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MARCH 1993

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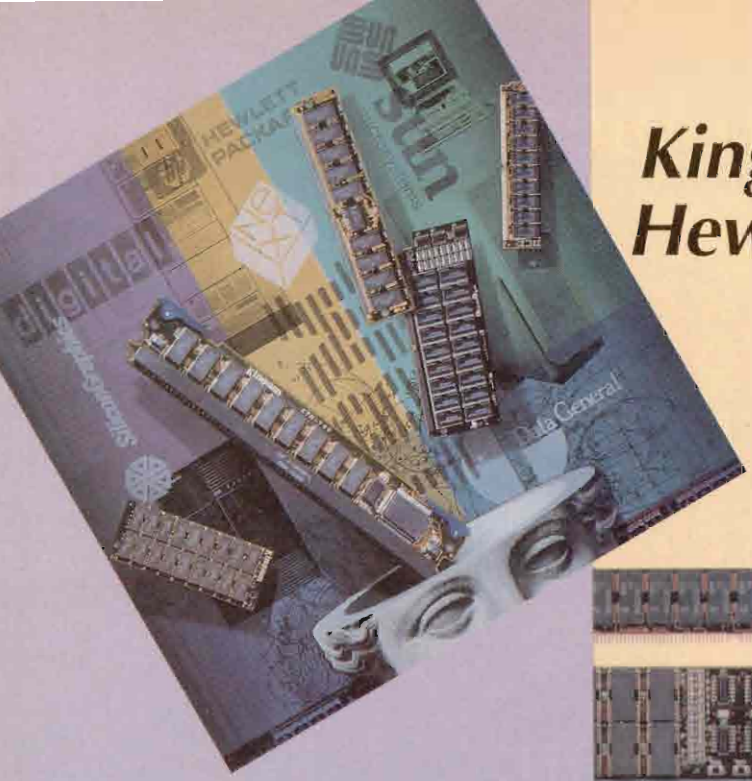

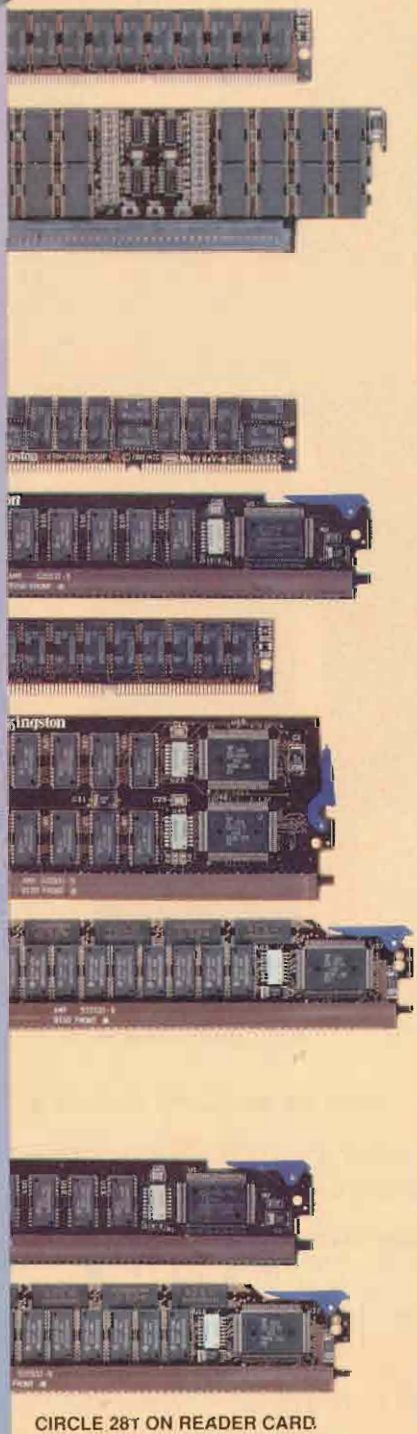

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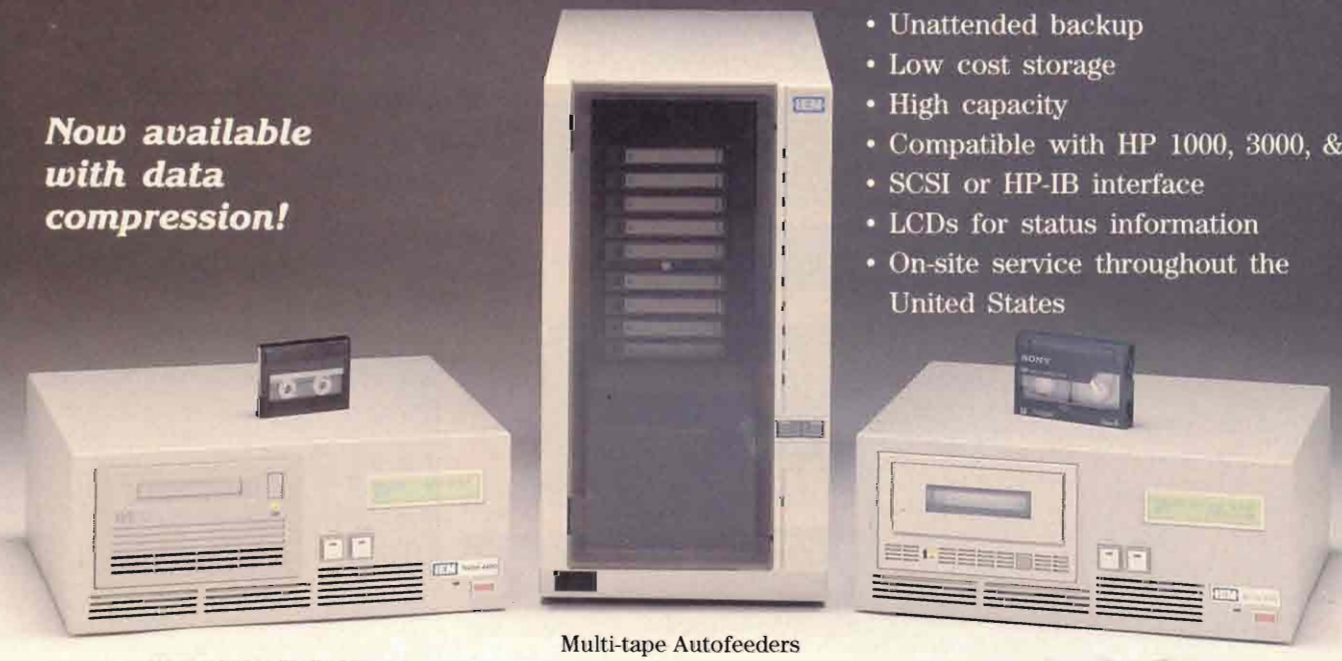

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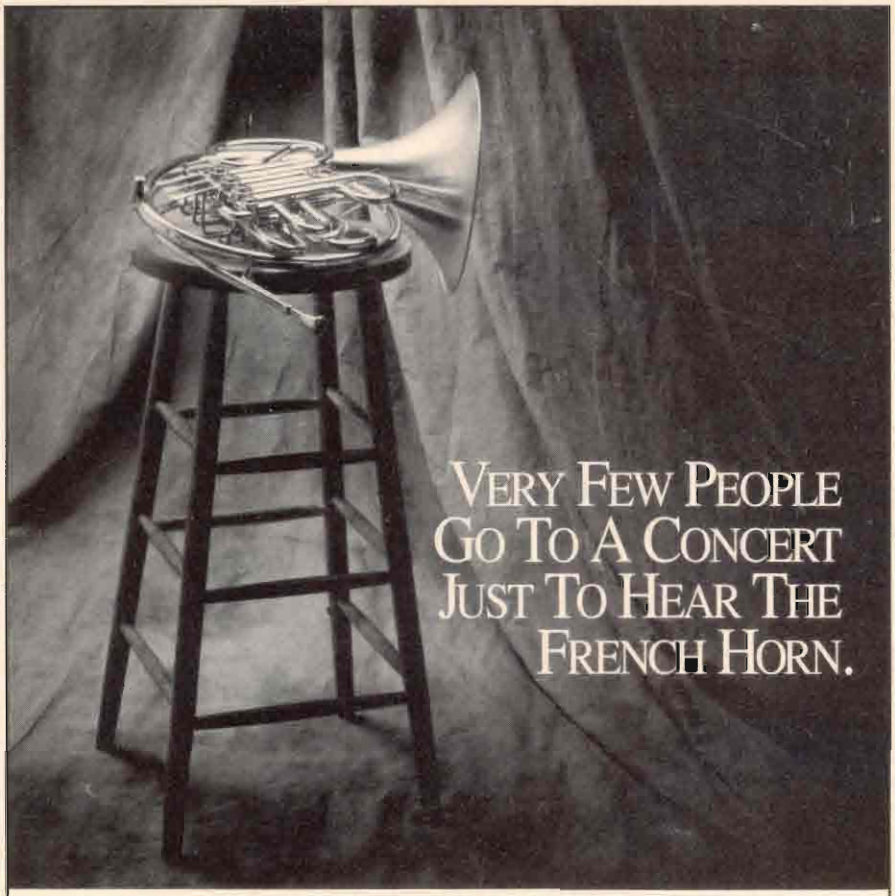

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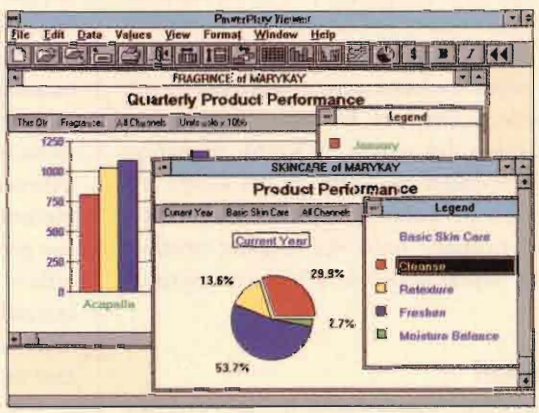

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The High Cost Of Cutting Costs

By Don Marks

For MIS, the current cost-cutting craze translates into a variety of challenges, dilemmas and double binds. After staffing cuts, today's draconian imperatives usually mean wringing the last drops of performance from existing systems and implementing low-cost server platforms where more compute power is required.

But the sheer simplicity of our new-found frugality may prove misguided. Contrary to the conventional wisdom that moribund mainframes always can be salvaged as servers, aging platforms are seldom ideal for new client-server applications. And even when building a new-style system on an old-style box is feasible, it may not be easy to implement these applications in a fashion that makes for simple migration to cheaper UNIX- or Intel-based platforms in the future. At the same time, in spite of the industry's present infatuation with squeezing large applications onto the smallest possible platform, PCs and UNIX workstations aren't always optimal hardware choices.

Cheaper By The Dozen?

At a recent user group meeting, I spoke with the MIS director of a market research firm about a downsizing project just completed at his shop. Faced with a $4 million IBM mainframe upgrade, his firm's parent company, a Fortune 500 concern, decided it was about time to obtain some in-house downsizing expertise. Thus, a decision was made to migrate the market research firm's compute-intensive statistical analysis application off the mainframe to a network of 12 high-powered HP 9000/750s.

The concept was a good one, and forward-looking at the time — the 750 had only recently debuted. Offloading the application would not only decrease the run time for a valuable analysis tool, but also free mainframe resources for use by other divisions of the company. The workstation network was an ideal platform choice in this case because the application, which consisted of multiple sophisticated sorts, easily could be divided into parts. In the future, as the volume of data to be sorted increased and performance degradation set in, additional upgrades would be simple: divide the data into more parts and add another workstation. Thanks to HP's volume discounts, hardware costs for the initial network were less than $500,000 — a savings of $3.5 million.

After a lengthy implementation process, the application ran like a charm — and fast, too. Processing time decreased from a grueling five days to less than two, despite ever-increasing data volumes. This year the firm will take advantage of HP's board upgrade program to upgrade all of the 750s to PA-7100-based 755s; it will probably add two more 755s, as well. The application should scream, and the upgrade cost will be nominal when compared with that of a similar mainframe performance boost.

The Long And The Short Of It

As with all silver linings, however, a dark cloud hovers around this otherwise model project. The hidden costs of migrating the application were high — very high. In fact, when consulting fees, training and system integration services were totalled, the bill came to more than $6 million — $2 million more than the mainframe upgrade would have cost. And it took two years!

From the standpoint of cost-containment, efficiency and responsiveness, you could certainly argue that this project was too expensive and too long. But was it? After all, it's arguable that the next time the parent company faces a similar situation having people on hand who know UNIX and understand how to offload applications could cut the costs of downsizing. Also, it's certainly plausible that at least this particular subsidiary of the organization will never again buy a mainframe upgrade. All future performance upgrades will cost less.

Like it or not, saving money in the long term frequently requires spending considerable money in the short term. Unfortunately, in many organizations, those short-term dollars simply aren't available; CFOs and auditors want cost-savings realized up front, which is seldom the most effective policy when implementing change.

By the same measure, though, how do we know when enough downsizing is enough? The cash always looks greener on the cheaper hardware platform, and the temptation to move to ever lower-cost systems must be tempered with realistic recognition of migration costs. Perhaps, as PC hardware prices plummet and Intel's Pentium chip improves performance, a PC LAN running Novell NetWare or SCO UNIX, or possibly even Windows NT, could prove a more cost-effective solution for this type of application. Yet for this company the cost of a second migration could be every bit as high as the first, possibly higher.

True, subsequent performance upgrades would be even cheaper than they are now with the 755, but where does it all end? On wireless LANs and palmtop devices? At what point have we invested sufficiently in cutting costs? At what point have we spent too much?

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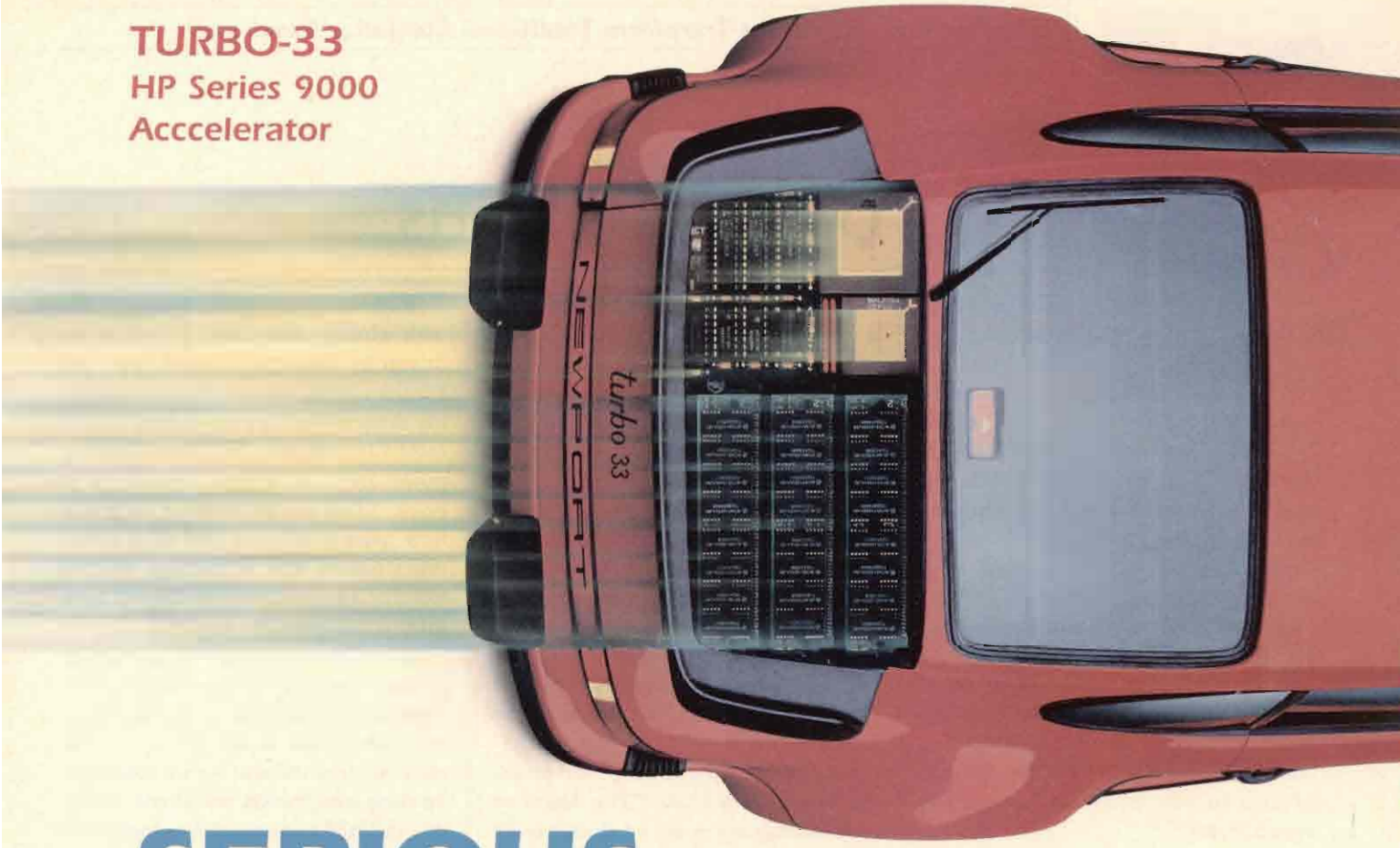

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INDUSTRY WATCH

Bill Sharp

The Belt Tightens

Joe was sitting in his office today with a huge closed-mouth grin on his face when I walked by. Grinning is highly unusual behavior for Joe, so I stopped to have a look. He was slowly turning a deep reddish-blue, so I quickly pulled him to his feet and prepared to perform the Heimlich maneuver to dislodge the piece of ham sandwich that must have stuck in his throat. To my amazement, he shoved me away, scribbling on a tablet, "Bill, HP is moving to a PC-like cost structures for most of its computer products, so I'm sitting by the phone waiting for my chance to buy an HP-UX server for under $3,000!"

I gave him my best sidelong "you're outta your skull" look, and walked out again, saying over my shoulder, "Don't bother holding your breath, Joe."

I was feeling pretty good about putting Joe in his place until I stopped to think about it. He had to be way off on the price, but the trend might be for real, so I called Peter Kastner, vice president of the Aberdeen Group, a Boston-based computer market research firm.

After relating to Kastner the preposterous idea that HP might ever move to a different cost structure, Kastner snapped me right around by agreeing that it was probably true.

PCs: The Mice That Roared

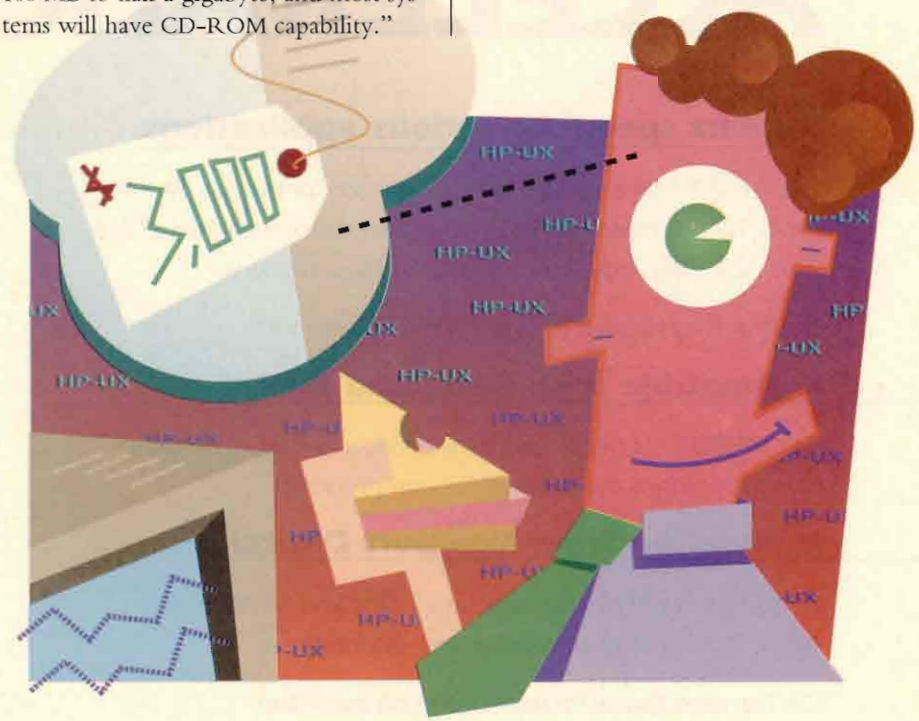
"Clearly one of the important stories of 1992 was the plummeting cost of PC hardware at a time when Intel and others were ramping up performance," says Kastner. This was the year in which big-name PC vendors suffered enough at the hands of low-end clone makers that they finally struck back with low-priced systems of their own, cashing in on a minor boom and simultaneously sealing the fate of several lesser PC makers.

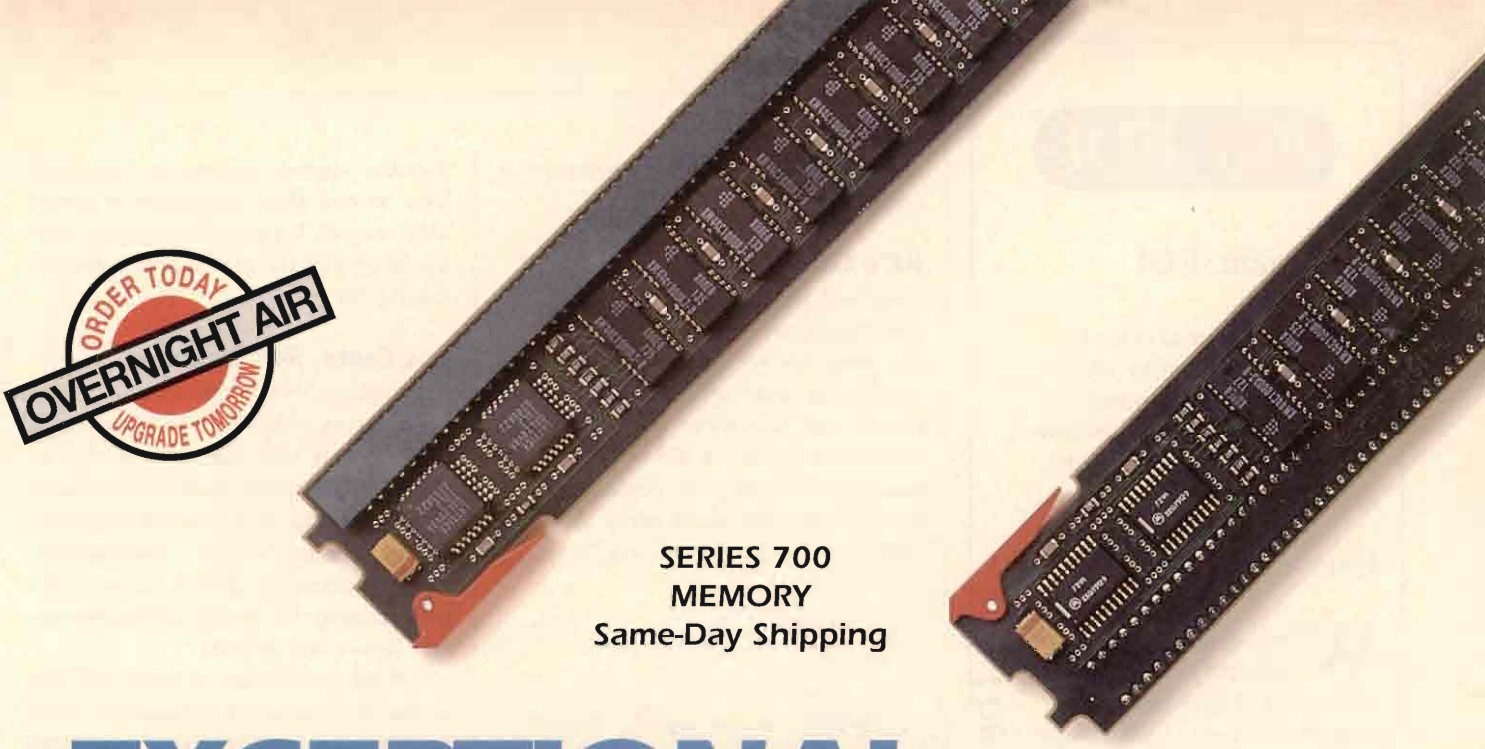
The message is clear: Larger computer makers are under much the same excruciating competitive pressures as the PC market, and they must move in the same direction to be competitive. As with PC makers, competition is driving them to provide steadily increasing performance while at the same time maintaining or even cutting prices — and that requires cutting costs.

Fierce competition and poor market growth are the driving forces behind this trend, which already has brought dramatic change to the desktop, and promises to do much more. "The degree to which things are going to change really hasn't sunk in for many people," says Kastner. "The average desktop will jump from 2 megabytes of memory to 8 MB or more, the hard disk will jump from 100 MB to half a gigabyte, and most systems will have CD-ROM capability."

Kastner seems totally unconcerned with whether these desktop systems are driven by PA-RISC or new Intel 586 Pentium chips. Architectures are marching along in overlapping tandem, as new Intel CISC designs provide increasing power and RISC designs come down in price. "The key to business success is how quickly MIS can help their enterprises harness new technology and put together killer applications that will keep them competitive."

HP's Olivier Helleboid, marketing manager for the HP 3000, agrees that remaining competitive is crucial in today's low-end market. In fact, he says, it was HP's premonition that such a commodity computing market would one day arrive that lead to many of the changes the company has made in recent years. "Prime, Wang, TI and others have had a lot of trouble or have left the systems market," he says. "In Europe, where I





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come from, there are very few computer companies left."

HP's Cost Consciousness

Helleboid points to changes in cost structure that began a decade ago for HP. "In the early 80s we had proprietary networks that were specific to each platform, and we went to a common network organization and to networking standards that are now common to all our products. Standards allow us to leverage our R&D expenditures."

HP is moving as rapidly as possible away from relying on a dedicated sales force ...

PA-RISC, while not an industry standard, is common across all but the PC and peripherals lines within HP. PA-RISC products share not only common processors, but packaging and power supplies as well, he says. "That whole strategy is benefitting us and we can see that in our profitability."

These are cost reductions that began several years ago, but Helleboid says HP is far from finished. HP has been talking for a while about changes in its sales methods. Like other vendors in the industry, HP is moving as rapidly as possible from relying on a dedicated sales force to a system that uses HP sales people for medium to large customers, while "channel partners," such as value-added resellers, make other sales.

In some cases, much of the contact with HP will be with telemarketing professionals who will complete as much of the sales and support process as possible before turning selected functions over to a sales person for an on-site visit.

"We're moving to a model that gives us more ways of working with customers," says Helleboid. "If they want a memory upgrade or support, they don't have to wait for a salesperson to arrive; they can call. It's a combination of making it simpler for the customer and reducing our costs."

Cut Costs, Not Services

Although in theory this telephone customer service model was intended to provide users with improved service, in practice it has meant many HP customers have less contact with their sales representatives than in the past. Consequently, some customers complained that under the new structure they would receive less post-sales service and support.

HP 3000 customers, in traditional data center environments particularly, have been hard hit by the changes, and HP recently developed a new sales support scheme to better meet their needs. Under the new approach, each geographic region will be assigned a field sales representative and two dedicated in-house support personnel. Together, this team will attempt to build closer relationships with customers and compile a knowledge base concerning the accounts in its region.

HP is also hoping to reduce its post-sales order fulfillment costs, says Helleboid, without impacting the level of customer service it provides. For example, marketing and support divisions currently are working to simplify everything from contracts to shipments. "We have a multidivisional group re-engineering that whole process, and we will take a lot of cost out of that."

At base, these changes reflect the gradual shifting of HP's revenues from increasingly inexpensive hardware to higher-margin products and services, such as software, middleware, networking and systems integration. High margins accompany new technologies in emerging markets. As HP's markets move from adolescence toward maturity, the measure of the company's mettle will be the ability to transform its own costs and structures in sync with those of the market. So far, so good. ■

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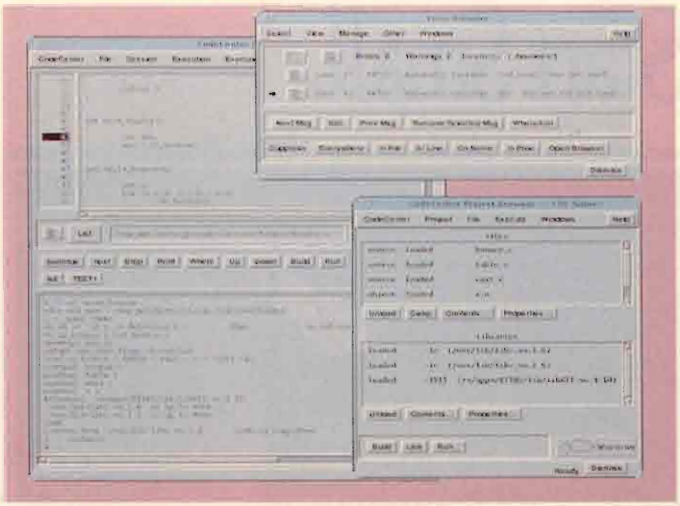
The Road To Better Code



CenterLine's CodeCenter Helps Programmers Steer Clear Of Software Development Jams

It's said the road to hell is paved with good intentions; if that's the case, perhaps the road to buggy software is paved with good ideas. All too often a good programmer's brainstorm winds up in a soggy drizzle by the time it slogs through the software development cycle. Coding, testing, debugging; recoding, retesting, redebugging — it can be one vicious cycle that often ends with users complaining that bugs still infest the program.

CenterLine Software's CodeCenter programming environment helps smooth the process of creating C language programs by streamlining the edit, compile, link, test and debug phases of the development cycle.

With its 4.0 release, CenterLine has enhanced the debugging features of CodeCenter. DBx-like features allow you to attach to a running process and use the environment for both interpretive and executable debugging, from single lines of code to a fully linked executable. In addition, an automatic run-time error check, available with previous releases of CodeCenter, helps you quickly begin the debugging process.

A prime example of a CodeCenter application is PADS Software (Littleton, MA). PADS, an HP business partner, develops software for the design and layout of printed circuit boards. PADS has been using CodeCenter for about two years to test its own programs, as well as other vendor source code with which PADS developers may be unfamiliar.

According to Howard Schutzman, chief engineer at PADS, "CodeCenter provides a robust development debugger." About 12 programmers at PADS use CodeCenter to debug complex software code. "CodeCenter delivers strong run-time checks, such as dynamically validating pointers and array subscripts," says Schutzman, who has used various versions of CodeCenter for more than five years.

CodeCenter detects and reports more than 250 types of errors. Although the program always has provided the run-time source code checks in addition to static error checks, release 4.0 lets you now load and check programs as either source or object code.

Several browsing features of CodeCenter have been enhanced with this latest release. For example, the error browser provides filtering and suppression facilities, the dynamic multilevel cross reference browser is fully hierarchical, and the project construction browser supplies a graphical interface to standard version control systems.

Schutzman also appreciates the compile capabilities of CodeCenter. "The compiler alone," he says, "provides warnings to many potential problems that standard tools may miss." This allows PADS developers to remove any problem before it appears during production.

CodeCenter 4.0 supports the OPEN LOOK and Motif user interface. In addition, CodeCenter 4.0 is integrated with industry standard frameworks such as HP SoftBench. PADS first ran CodeCenter on Sun SPARCstations, but now uses it on HP 9000/700s, which the company prefers for development.

Schutzman maintains that CodeCenter performs better than standard UNIX debugger software such as HP's own XDV. "CodeCenter is very picky," says Schutzman, "allowing us to produce a higher quality software in about half the time." — *Charlie Simpson, Contributing Editor*

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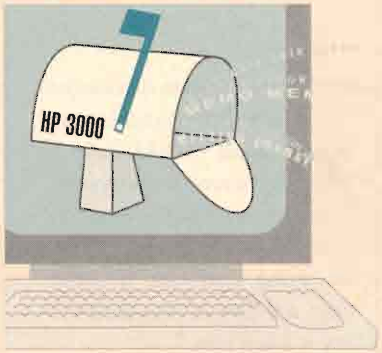

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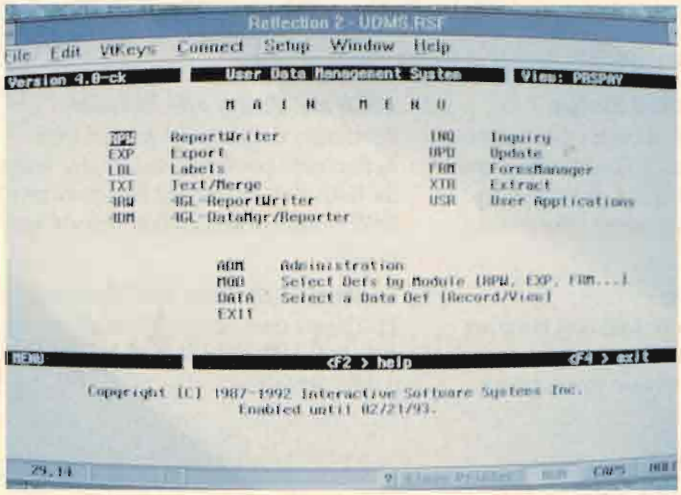

UDMS Offers Flexible Tools For Information Access And Data Management Across Multiple, Heterogeneous Databases

Given the many databases and file structures that can exist on an HP MPE /iX system, allowing users to access data from those sources and quickly turn it into information is a challenge for any system manager.

The User Data Management and Reporting System (UDMS) from Interactive Software, is a family of user tools that offers ease of reporting, exporting, updating and querying for users who routinely access files from Turbo-IMAGE, Enhanced Turbo-IMAGE, KSAM ALLBASE/XL, INGRES and other databases and file structures.

Users can join up to 32 files or tables in a relational data view through inner and outer joins. The ANSI window-based user interface provides seamless integration between multiple databases.

With UDMS users can: define their own reports; perform on-line queries; merge text with data, produce labels; create data management forms; summarize data; export data to PCs; add, change or delete data, given the appropriate security privileges; and develop full data entry applications using multiple databases.

Users can analyze data in one database, change records in another and delete data in another, simultaneously, and display the results in a report or download them to a chosen PC application. And the window-based user interface lets inexperienced users navigate the system through self-prompting windows containing field-sensitive HELP, select options and special function keys.

Sophisticated users, programmers and analysts can access UDMS's non-procedural 4GL that provides shorthand notation, looping capabilities, run-time links, conditional processing, arithmetic calculations and English-like commands. UDMS also enables access to 3GL functions through external functions. Users can develop comprehensible data views of complex environments, such as hierarchical structures, inner or outer joins and multiple file structures.

Korry Electronics, a manufacturer of electromechanical switches, has been making the transition from another report writer to UDMS over the last eight months. According to John Mertlich, manager of information systems, the company is running UDMS on its HP 3000 using ASK's MANMAN MRP II software. "UDMS is easy to use," says Mertlich, "and in combination with the MANMAN system — because it is ASK's software of choice — the data dictionary is already built, making it much easier to add onto." Although there is always reluctance to change, Mertlich says this transition to UDMS has gone smoothly because "the stability of that dictionary is a big plus."

Collier Jackson, designers of World Class Series financial software for HP platforms, was a beta site for UDMS and has been running it ever since on its HP 3000 960 and 922 for accounting and human resources tasks.

According to Mike Fisher, project manager, the company has about 20 users accessing UDMS each day. "Comparing it to other report writers (and it's really more than that), UDMS is more end-user related," Fisher says. He also finds the number of modules offered impressive, and notes that Interactive is "constantly delivering new features, helping MIS keep up with its demands."

The UDMS package includes 12 modules: Report-Writer, Forms-Manager, 4GL-ReportWriter, 4GL-DataManager, Text/Merge, Export, Labels, Inquiry, Update, Extract, Administration and User Applications. Prices for the package range from $4,500 to $54,000, depending on CPU size. — *Lenni Wright, Contributing Editor.*

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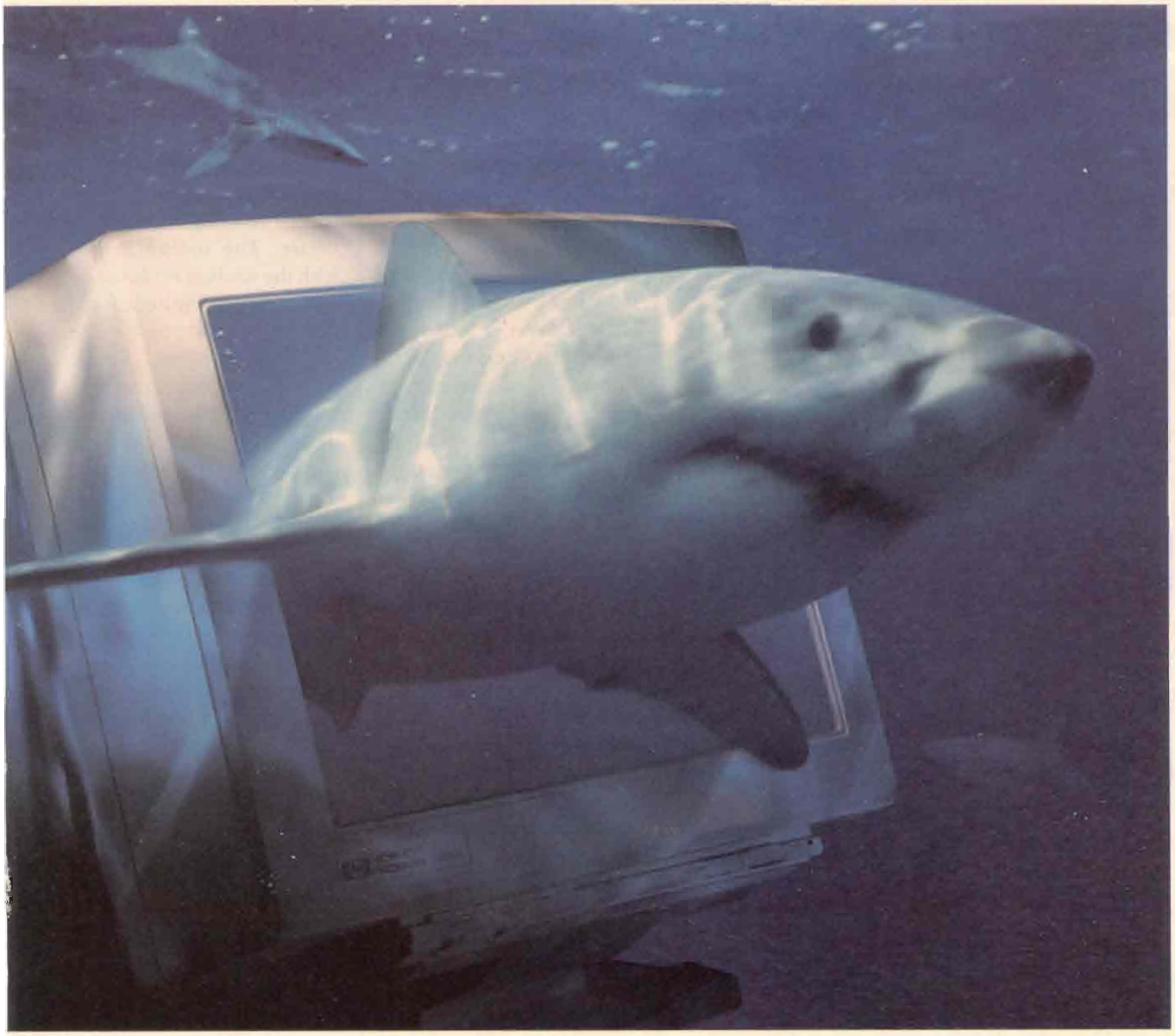

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Data Characteristics:		
Consistency	Local	Global
Update	Continuous	Periodic
Number Of Indexes	As Few As Possible	As Many As Possible
Purpose Of Indexes	Ensure Data Is Unique	Improve Query Performance

Red Brick Systems' Warehouse Provides Information Delivery From Multiple Sources

With Red Brick Warehouse, Red Brick Systems (Los Gatos, CA) provides quick, unobstructed access to decision-critical data residing on HP 9000 800 Series servers and HP 3000 business systems. Red Brick Warehouse is built to handle information delivery from multiple databases.

In retail, the beauty of dealing directly with a warehouse is the savings — you save money, time and delivery costs. Red Brick Warehouse attempts to provide these same services for information retrieval. By reducing query response times, decreasing expenditures of application development resources and eliminating data delivery hassle, Red Brick Warehouse makes accessing multiple databases as easy as working with a single information supplier. According to Richard Finkelstein, president of Performance Computing a Chicago-based consulting firm, "Red Brick Warehouse yields performance, with rapid response for user requests."

The three components of Red Brick Warehouse include a server, a loader and the RISQL Entry Tool, a line-oriented interactive query tool used to access the warehouse server.

Gold Mine, the source of Red Brick Warehouse's performance power, is Red Brick's Relational Query System technology that allows database access using industry-standard SQL or RISQL. RISQL provides access to data stored in the Warehouse and enhances its value through functions such as ranks, running averages and cumulative totals necessary to analysis and decision support.

In addition to the standalone product, Red Brick Warehouse is also integrated with and certified as part of HP's Cooperative Computing Solutions program, which provides customers with complete client-server solutions including hardware and software. According to Finkelstein, bundled solutions like these "eliminate one of the most costly portions of any client-server solution — dealing with multiple vendors."

Initially, Red Brick Warehouse for the 9000 will support several front-end tools, including HP's Information Access and Channel Computing's Forest & Trees, as well as many third-party databases. George Ferguson, Red Brick Warehouse product manager, explains, "We are not dictating a single database. The option to go with the database of choice is now available through Red Brick."

According to Greg Pulliam, product marketing manager for HP process industries, Red Brick addresses the issue of managing megadatabases. "We now see tens of gigabytes of data that need to be accessed quickly," says Pulliam. He sites large marketing, sales and finance databases as prime applications for Red Brick Warehouse.

Pulliam says that two basic, yet major problems exist with accessing such amounts of data, database load-time and query response performance. He maintains that in one example Red Brick "decreased load time from 14 hours to one hour; and improved query response 10 times."

Red Brick Warehouse for HP 9000 Series servers requires HP-UX, 1/4-inch cartridge or 9-track tape drive and a minimum of 100 MB of disk space. Price, based on the size of platforms and number of users, ranges from $20,000 to $125,000. — *Charlie Simpson, Contributing Editor*

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Productive Partnership

HP's Vision Of Shared Information Unfolds At Last — In Software Solutions From SAP

R3 is designed for scalable open systems using standards-based client-server environments and relational databases.

It was once called the Computer Integrated Manufacturing (CIM) strategy, a story HP told to its prospective customers about how data would move through the business of the future. Data would be accessible to all systems, passed along from R&D where product development took place, to manufacturing where the same data took slightly different form, to purchasing where parts were bought, etc.

This concept of shared information, easily used by all according to their need, was a vision for HP. What was a vision for HP, however, is a product blueprint for software vendor SAP (Systems, Applications and Products).

SAP is one of few firms offering an integrated system of linked solutions and a common database that spans much of what a corporation needs to run. It's the implementation of a vision that SAP has parlayed into a $442-million firm with 2,300 customer firms around the world (1991 figures). SAP is headquartered in Walldorf, Germany.

The firm was founded in 1972 by four IBM systems engineers who saw a market opportunity slipping away and decided to pursue it themselves. R2 resulted from that effort, a mainframe-based software system of linked applications using a central database.

Theory Into Practice

After 5 years of development and pilot testing last summer, SAP moved this same concept into client-server open systems with its R3 product whose implementation is aimed primarily at the UNIX market. Ken Detato, program director for R3, says the software will run on UNIX client-server systems from HP, as well as Digital, IBM, Siemens-Nixdorf and Bull HN. Versions of the system also are available for HP's MPE/iX and Digital's VMS "open proprietary" operating systems.

"R3 is designed for scalable open systems using standards-based client-servers and relational databases," says Detato. Despite SAP's support of its new R3 system on several brands of UNIX systems, the majority of current R3 installations in Europe are on HP hardware.

Basis System is the core of R3, including SAP's development environment, data model, active data dictionary, customization and centralized tables. Basis includes monitoring functions for system optimization and improving data flow. Basis is written in ANSI-C and it includes a graphical user interface.

Around this core are three clusters of applications for financial management, manufacturing/logistics management and human resources, including more than 20 individual applications with shared data pathways. R3 release 1.1 includes financial, cost and fixed-asset accounting, materials management, basic production planning, sales and distribution.

R3 allows you to separate front-end presentation servers from back-end database servers, with application servers controlling the logic between the other two segments. This allows more flexibility in system configuration, such as adding more users to the front end without requiring more back-end processing. "MIPs are cheaper at the front end," says Detato.

He attributes the healthy relationship between HP and SAP to two factors. One is the effort expended by HP to help SAP's effort to move to HP-UX. "At our center in Germany, there are 25 HP technical people working with R&D, helping to get the system onto HP and optimized," he says. Second, SAP had early access to HP's newest high-end Emerald systems. "We are working on joint marketing plans with HP," he adds. "It is a very good partnership." — *Bill Sharp, Technical Editor*

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Data Center Under Siege

Combined Forces Of Distributed Computing And Automated Operations Are Driving Operators Out Of The Computer Room — And Into New Careers

BY SAM DICKEY

Under constant pressure to find economical alternatives to traditional data processing solutions, many MIS managers have discovered a partial solution in downsizing to smaller, more cost-effective and flexible systems. Midrange servers with PC or workstation clients have grown powerful enough to handle most enterprise-wide applications and replace aging mainframes or even minicomputers. In theory at least, workstations and PC LANs deliver to users what they want at lower cost than centralized systems that use dumb terminals.

New software technology is also helping to chip away at the data center. Middleware standards, such as the Distributed Computing Environment (DCE) and Distributed Management Environment (DME), eventually will remove the remaining barriers to networked, multiplatform computing. And software tools that enable the automation of data center operations tasks eliminate the routine, manual jobs, such as pulling paper and hanging tapes, traditionally performed by operations staff.

Although client-server solutions and automated operations technology may help organizations cut costs, continued decentralization in combination with increasingly advanced automation inevitably leads to further downsizing — and often dispersal — of data center staff. Operations managers and, most of all, computer operators, find their skills threatened with obsolescence. Their traditional career paths appear to have become dead ends.

At the same time, MIS managers find themselves saddled with the task of supporting and integrating a cacophony of disparate departmental systems and software. While operations tasks have

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been eliminated, a new set of system integration chores has arisen to take their place. Data communications and interoperability problems, as well as basic PC support and configuration issues, have many MIS managers flooding the classifieds in search of Microsoft Windows wizards and Novell-certified network administrators.

Some MIS managers, however have discovered another way to locate the networking gurus and other specialized personnel they need: retraining operations staff. In their organizations, the very changes that are causing the data center to disintegrate have created new opportunities for those whose jobs otherwise would be eliminated. Their computer operators are gradually implementing cost-saving automation technology, then making the transition to new system and network management projects. So far, these managers are finding that the advantages of retraining data center personnel to take on these new information technology tasks are many, for the employee, the MIS organizations and the end-user.

Reinventing Operations

CHANGE IS ALWAYS difficult. Betsy Leight, executive vice president, OCS (Palo Alto, CA), says, "You have to scramble eggs to get an omelet. The data center manager is scrambling job descriptions, skill sets, responsibilities and accountabilities to get a more efficient, productive operation."

Implementing client-server platforms may mean hiring new talent, and operations automation may require cutting back the number of operators on staff, Leight says, but worker retraining and normal attrition can help avoid morale-damaging layoffs. The goal in the data center, according to Leight, is to identify the repetitive, monotonous jobs and automate as many as possible out of existence. Even when you've accomplished all you can, there will still be many tasks — particularly in multiplatform environments — that simply can't be automated. However, Leight observes, the remaining tasks will be more challenging — and ultimately more rewarding — for operations personnel.

"I have yet to see automation tools cause an operator to leave an organization," she says. "In the traditional, single vendor shop, everything was homogeneous. But you don't have that anymore. Multiple platforms mean more integration and technical support work must be done, probably requiring different skills — and right now that work can only be done by people."

Jim Bowerman, director of the Unitech product division, Raxco Software Inc. (Rockville, MD), adds, "A lot of the routine aspects of operators' jobs will go away, but the skill and compensation level of operators is going to go up significantly. The kind of problems operators will be dealing with will become much more sophisticated."

For example, Bowerman sees a trend toward the control of increasingly distributed systems in a single operational focal point. This is aided by management tools such as HP's OpenView, the network and systems management application architecture that offers one consolidated view of a single data center or an entire multiplatform enterprise network.

With a single point of procedural control, Bowerman says, "Operators will no longer sit around reacting to simple error messages. That will become an automated activity, [a function that] OpenView, or another management application, can do."

From Data Center To Desktop

ALTHOUGH A SMALLER STAFF can maintain central control over distributed systems, that doesn't mean that end users will become systems specialists. According to Len Eckhaus, president of the Association for Computer Operations Management (AFCOM; Orange, CA), the increasing sophistication of technology means a greater need for support at the local level in systems analyst-type positions. "End user departments will snap up people out of operations," Eckhaus says, "These department have a need for people with a background in data processing because end users themselves are doing more work with computers."

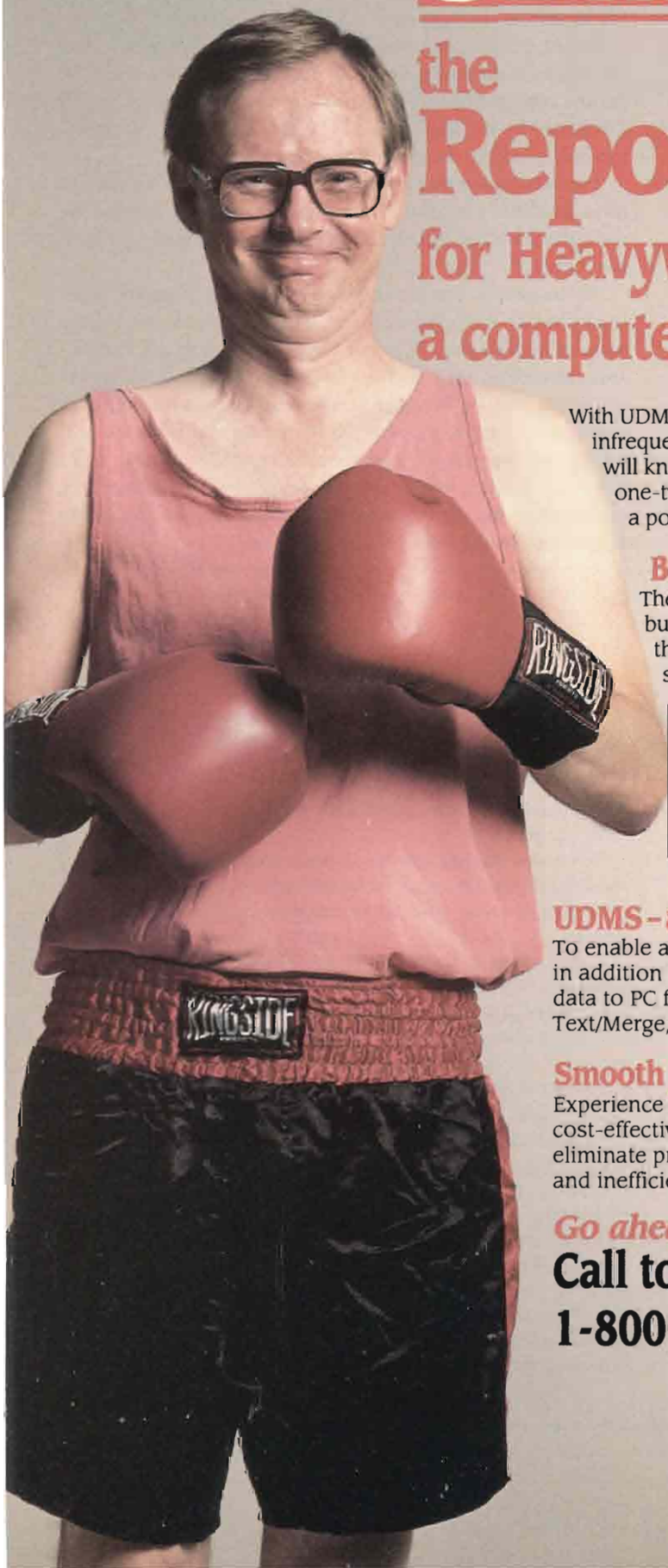
Janice Zdankus, mainframe alternative program manager, HP (Cupertino, CA), agrees that because of the trend to get information technology into the hands of end users, it has become common to put operations people out into different divisions of a company.

"Unless they're under extreme pressure to reduce costs, companies are reluctant to let [operations] staff go. Companies are [seeking alternative] more productive ways of using them. Becoming local experts is one way," Zdankus says.

Strictly speaking, organizations became multiplatform environments as soon as PCs arrived on the corporate scene years ago. Although they were originally regarded by MIS as somebody else's problem, Leight points out that MIS can no longer afford to ignore them. "An MIS manager today realizes he needs somebody on staff who can deal with PCs, the fundamental issues of data integrity, up time, reliability and connectivity," Leight says. With retraining, she believes, a former data center operator would be an ideal candidate for this job.

Bowerman adds that as well as technical skills, a retrained operator already possesses a valuable understanding of the business's unique requirements and priorities. The operator knows the organization and its computer network from the top down.

"When you move toward an automated environment the technical details become somewhat less important," Bowerman explains. "You have a management system that knows the command for restarting a communications line. But a person familiar with the business knows that that communications line is associated with a claims processing system, for example, and



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knows that it is critical for that line to be up during certain hours, or down when other applications are running. That knowledge becomes very important."

Bowerman also notes that operations automation tools help boost productivity in companies that are expanding their computing function as well as those being forced to cut back.

"I visited a Chicago bank which, because of mergers with other banks, had increased the workload in its data center six times in three years. Instead of adding staff they have increased the level of automation." Instead of the normal control room bustle, Bowerman says, "Their control room was very quiet. There were just two people monitoring [activity], and one of them was building a scheduling dialogue to run on an application in addition to monitoring the console. In other words, [he was] involved in a proactive activity."

The Human Cost Savings

HOW DO OPERATORS RESPOND to the idea of retraining and job change? Given that it means they get to keep — and improve — their jobs in a tough economy, they tend to like it just fine. "They love it," Leight says. "It's job enrichment for them. They look at automation tools, especially products that are widely used, as applications an operator an include on a resume as experience. Added skills are an asset in the long run." Leight says.

Leight believes that for most operators the job enrichment advantages of retraining outweigh the threats of automation. "A person who performs marginally can find any reason to feel threatened by the loss of a job," Leight says, "but most operators will welcome the chance to increase their skills."

For data centers that are approaching automation for the first time, Eckhaus advises that successful automation projects are those that have had the objectives laid out to the staff right from the start.

"Management lets the staff know how the company is going to handle the personnel issue, and attempts to give them a sense of involvement. Without their participation and enthusiasm automation projects tend to get bogged down in resentment and fear. By bringing people into it at the beginning an organization can do a better job informing staff members that job elimination doesn't have to mean layoffs, that they can be placed in another role in the company." Indeed, it may be a role that benefits both employer and employee. — *Sam Dickey is a freelance writer based in West Chester, PA.*

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RETRAINING GROUND: AT SPALDING, OPERATORS MOVE UP, NOT OUT

Spalding Sports Worldwide, Chicopee, MA, the nation's oldest sports equipment manufacturer, has automated its entire operations, including 10 overseas sites with HP 3000 business computers and a recently added HP 3000 922/200 corporate business system.

According to Bard White, chief information officer and worldwide MIS director, although automation of MIS has been extensive, including the implementation of the HP OpenView management system, the reduction of MIS staff has never been necessary.

"As we continue to move toward more on-line systems and take advantage of all the automation tools that are available, we have found we don't need as many operators, but we do need network people, PC people and people for additional services that we've never offered before," White says. "We've shifted functions in operations but I haven't had to displace anybody."

For example, Spalding's headquarters went from zero to 350 PCs in five years. Data center operators have been retrained to maintain them. "You don't want to make computer jocks out of end users," White says. "[Computers] are strictly tools for end users, whether they're used for word processing, spreadsheets or as terminals into the HP 3000. We have to maintain them, do audits on them, and install new versions of software."

For operators, retraining is a positive move, White says. "To gain additional skills is a real advancement," he says. "They always knew how to run big computers, in addition to that they have now become proficient in PCs."

White says that not only has he never found an operator who wasn't glad to learn PC skills, but his staffers frequently are willing to spend their own time, off-hours or weekends, to attend classes in PC support.

One career path that opens up to operators is programming, White says. "I like my programmers to be former operators, and I like to hire at the junior programming level from within the company. I believe the best programmers are those that know the operations and know the code that they're building—what it does, what it means to the system, how it interfaces with the databases in the machine room, and what all that means.

"I don't believe that to be a good programmer you need a college degree. Programming requires a set of skills that a degree doesn't necessarily guarantee. Former operators make very good programmers," White says.

Do enhanced skills mean a former operator is likely to leave for a new job? "When you provide training there is always that risk," White says. "But you can't be out close to the leading edge unless you have a group that is highly trained and highly motivated. It's my job to make sure I provide the tools and keep these people. My attitude is: If you're unhappy, come to me and I'll find a place where you will be happy."

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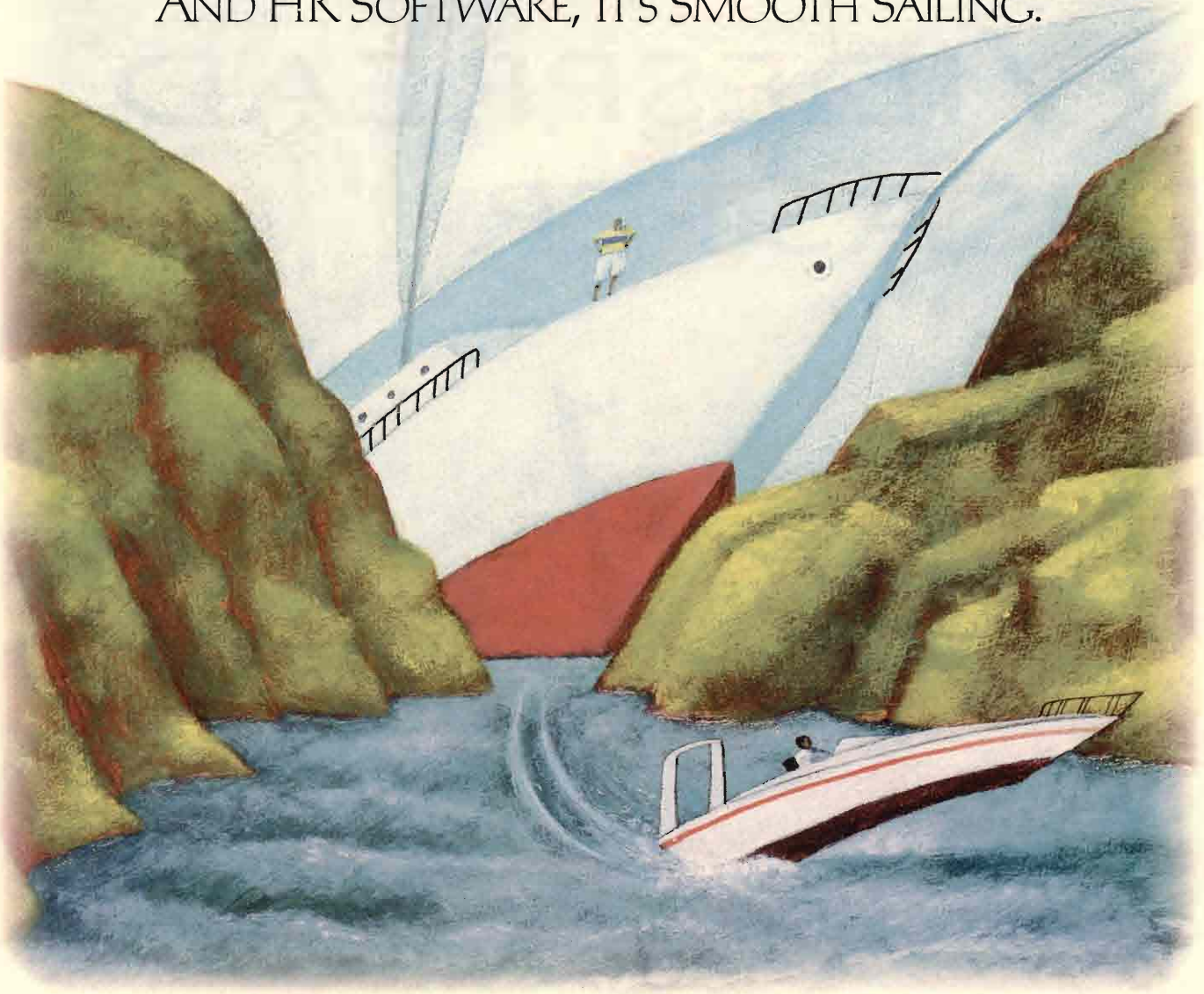

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WIDESPREAD DISASTER

How To Cope When Disaster Disrupts Your Multiplatform Enterprise Network

By Lynn Haber

Distributed, enterprise-wide computing offers organizations much-increased productivity, better use of resources and, the ability to set up satellite and regional facilities. But when it comes to disaster recovery, a distributed computing environment poses challenges that never confronted the traditional minicomputer or mainframe data center manager.

"Workgroup recovery is more about restoring the functionality of people than it is about restoring data," says Bruce Battjer, president of Sungard Recovery Services Inc. (Wayne, PA).

Michael Tobin, vice president of marketing for Comdisco Disaster Recovery Services (Rosemont, IL), agrees. "Recovering a distributed site means dealing

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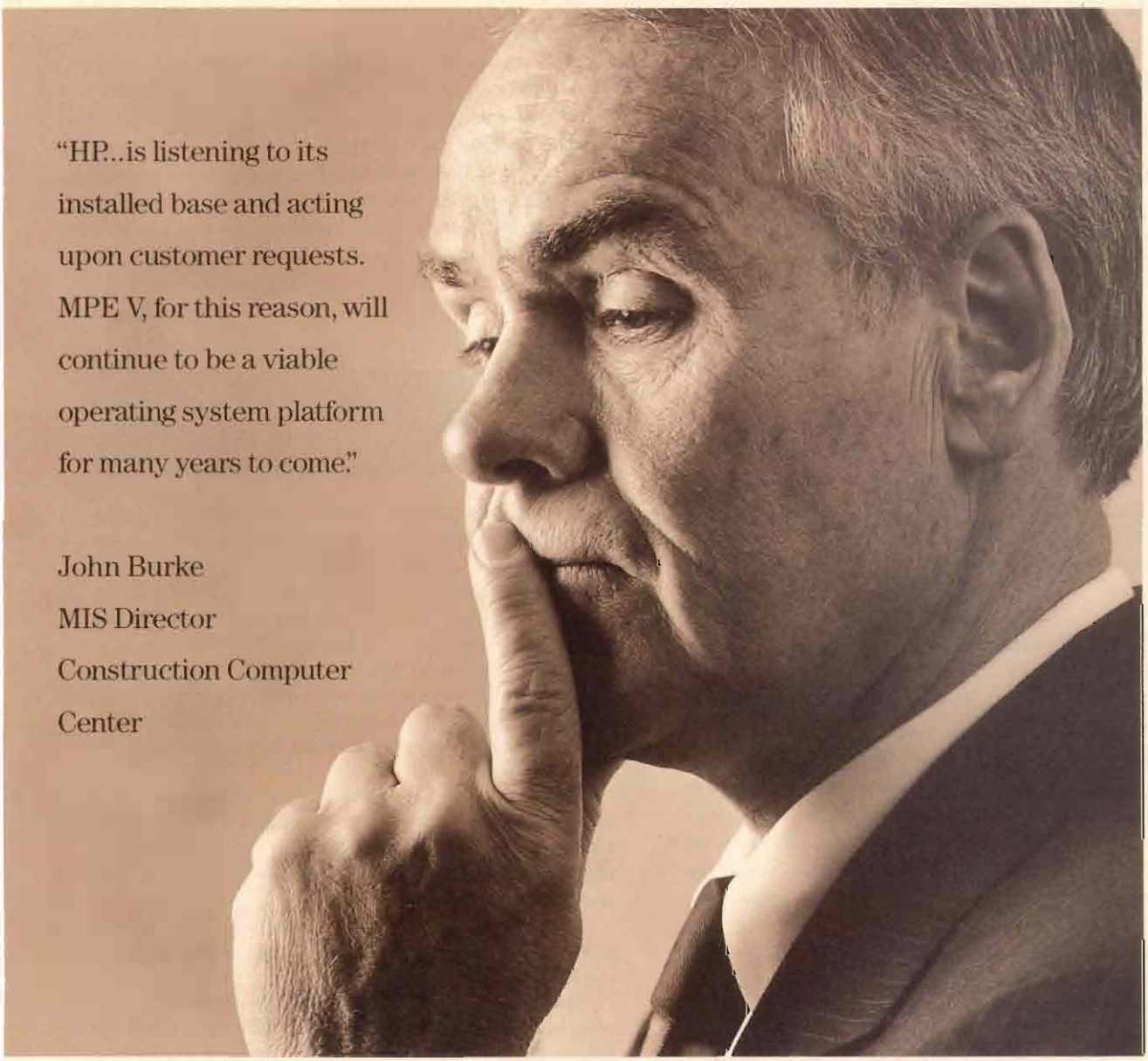

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HEWLETT PACKARD

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Critical to the success of a disaster recovery effort in a distributed environment is deciding who's in charge or how the plan will be managed.

more with the diversity of both machines and people. It's a much more complex situation than your traditional data center scenario. There are hidden vulnerabilities," he says.

Distributed computing environments, say industry participants, put an organization's operations at greater risk because of increased exposure — more systems mean more potential points of failure — and accessibility — more points of entry for disruptive, virus-bearing hackers.

Whose Headache Is It, Anyway?

TO THE CORPORATION WITH A distributed computing architecture, while the principles of disaster recovery planning remain the same, the management issues involved do not. And, the unfortunate truth about disaster recovery is that there is little awareness in the larger user community that new distributed environments are every bit as susceptible to power outages, fire and water damage and other computing catastrophes as centralized systems — if not more so.

"A distributed environment is typically an extension of the PC world where the control of data moves into the hands of the user," says Michael Kennedy, unit head of corporate networking at Arthur D. Little Inc. (ADL; Cambridge, MA). "Not only don't they understand the issue of disaster recovery, they don't see the critical nature of what they're doing," he adds.

With no one taking ownership of a central recovery plan, the prospects for organized disaster recovery in a distributed environment are dismal. "Even if MIS has a plan, but the user departments haven't thought about what it takes for them to recover, then it's useless," says Belinda Wilson, disaster recovery consultant with Hewlett-Packard's Disaster Recovery Planning service.

Critical to the success of a disaster recovery effort in a distributed environment is deciding who's in charge or how the plan will be managed. Standardized methodology and consistency of terminology and approach make the feasibility of a team approach real.

At the 3M Company (St. Paul, MN), a worldwide organization with about 80,000 employees and numerous off-site manufacturing plants, sales centers, warehouses and other facilities, in addition to two main corporate data centers, the responsibility of disaster recovery belongs to each individual facility.

"About two years ago, we put together a generic plan for distributed sites and allowed each site to adjust the plan to fit their needs," says Bob Niebuhr, disaster recovery specialist at 3M. "As our computer systems became more distributed and LANs and WANs became more prevalent, we had to shift our disaster recovery planning model away from a centralized mainframe approach," he adds.

Continued on page 34...

Workgroup Recovery: Hot Site In A Box

Not only does disaster recovery planning in a distributed computing environment challenge MIS, it has forced disaster recovery service providers to rethink their offerings as well.

"When it comes to workgroup recovery, the hot site business model breaks down," says Bruce Battjer, president of planning solutions at Sungard Recovery Services Inc. (Wayne, PA).

Whereas hot sites are modeled on the notion of it being a shared service for potentially thousands of users located anywhere in the U.S., workgroup recovery requires local facilities, which automatically reduces the number of customers that can potentially share the resource.

Nevertheless, companies like Sungard, Comdisco Disaster Recovery Services (Rosemont, IL), and Hewlett-Packard's Disaster Recovery Planning service, to name a few, are packaging new services aimed to meet the needs of organizations with distributed computing environments.

Sungard, for example, has approximately six MetroCenters, a multipurpose facility designed to meet the needs of workgroups requiring local recovery facilities.

The company also announced, last year, a Quick Ship PC program, in partnership with Intelligent Electronics, one of the nations largest distributors of PCs. The program guarantees a shipment of PCs to a location of the customers choosing within 24 hours.

Scheduled for availability in 1993, will be a centralized voice recovery system targeted at customer service work groups, and a program for Data Support at any location.

Similarly, Comdisco has devised a service that goes to the customer location. Called COMROC, the solution is a facility on wheels, 9,000 square feet, that gets delivered and set up at a preplanned destination. The company also offers the shipment of equipment as needed, according to Michael Tobin, vice president of marketing.

HP offers Express Service in New England, shipping small systems, including PCs and UNIX servers, to users where they need them. The company plans to expand the service nationwide.

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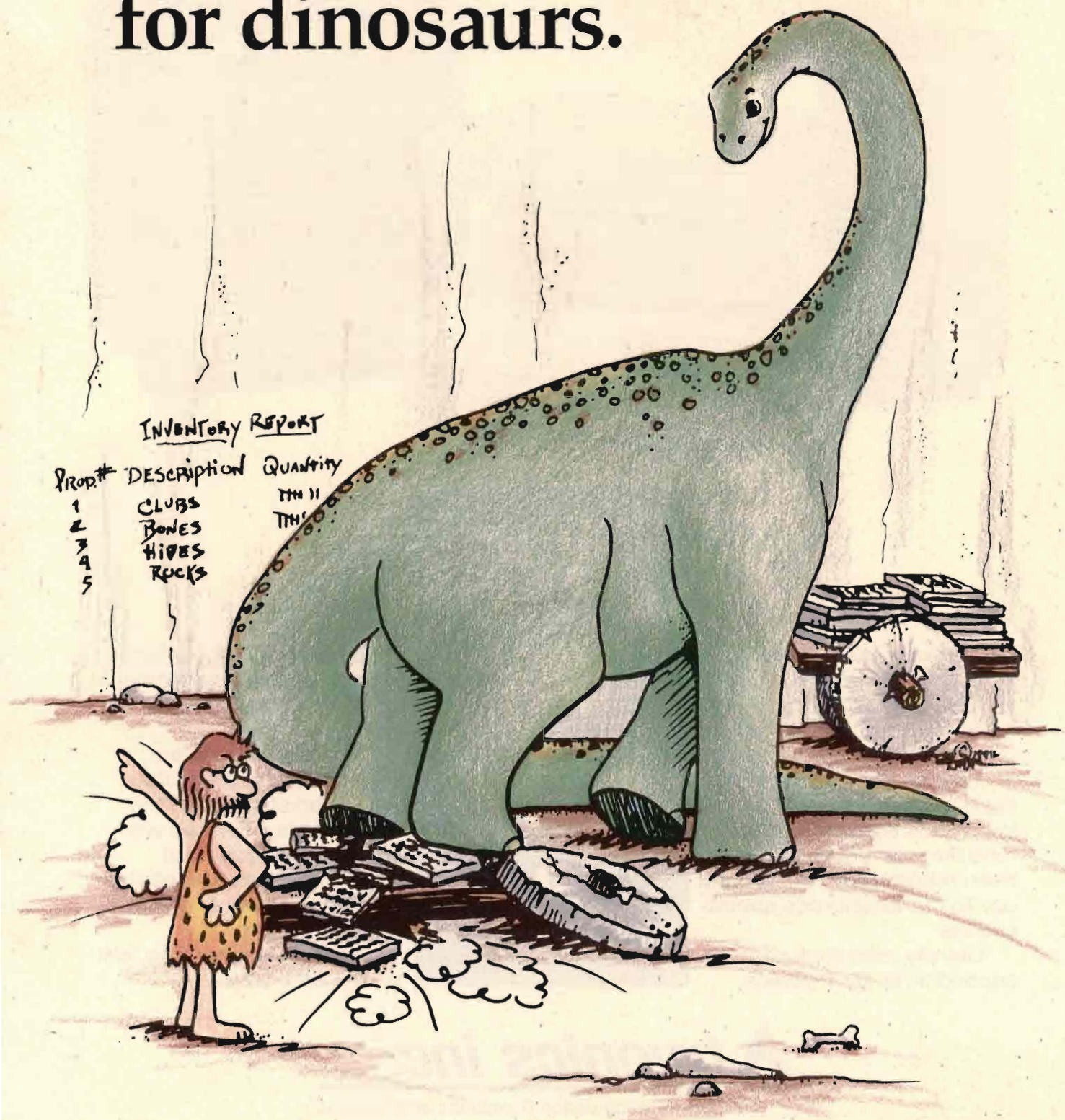

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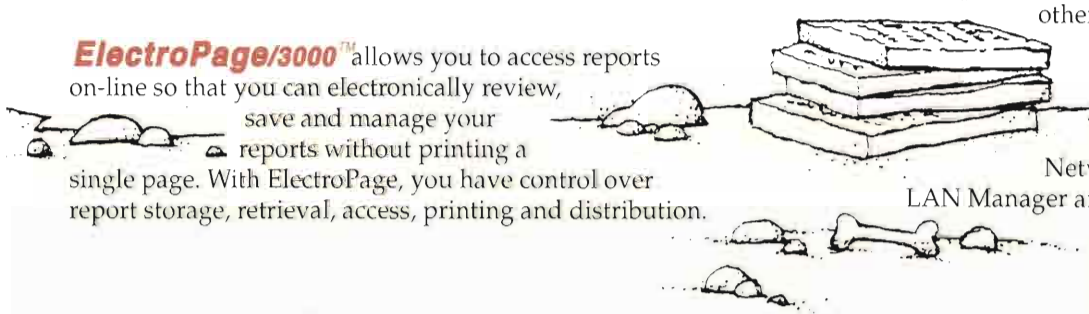

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There is an upside to having a distributed computing architecture in a disaster recovery situation: All of the company's resources are not in one basket.

...continued from page 30.

Employees in all of the company's organizations including networking, distributed technology services, central technology services, operations and facilities meet weekly to review, modify, change and discuss disaster recovery. "We make disaster recovery a part of the day-to-day management of IS operations," says Niebuhr.

Wisdom For Workgroups

AFTER OWNERSHIP FOR THE plan, MIS managers and consultants agree that the second obstacle to disaster prevention and recovery in distributed environments is inadequate user understanding. In distributed environments, the cliche goes, the computer is the network. Unfortunately, disaster recovery specialists have found, few users understand the implications of this new computing model. "We had to reground our thinking and look at how solutions are interconnected," says Bradley Kurtz, systems analyst at Hoechst Celanese Corp. (Rockhill, SC), a worldwide manufacturing company.

In a networked environment, maintaining local or wide area connections to applications is crucial. Establishing network redundancy and fault tolerance via wiring or the purchase of hot backup services from the telephone company is a must for successful recovery. "If you can't get to the information then it doesn't do you any good," says Kurtz.

Claude Brazell, U.S. program manager with Hewlett-Packard's Disaster Recovery Planning services, reports that he has seen an increased need in telecommunications or the data communications link as organizations become more distributed. "Not only is it an expensive consideration but the technologies are changing. We're seeing bridges and routers, in general the communications piece is getting more complex," he says.

And while network management, or the need to know what is going on in the network, is also vital to disaster recovery, ADL's Kennedy reports that the network management tools available today lack sophistication for distributed computing environments. "However, no matter how inadequate these products may be it is important to run network management software from your network operations center," he suggests.

Service Closet Catastrophes

ALTHOUGH DEPARTMENTAL computing solutions are relatively inexpensive when compared to mainframe costs, the physical security of these devices must still be considered in any disaster recovery plan, particularly servers, a repository of valuable information.

"We're seeing a trend in organizations to centralize servers in a protected area, much in the same way as the mainframe in the traditional data center has always been isolated," says Kennedy. A server replacement is another option for companies, allowing them to switch boxes in case disaster strikes.

One of the biggest issues in a client-server environment, Brazell raises, is how to replace all the equipment for the clients if they're lost. It's one thing to duplicate a centralized data center but to duplicate an entire remote site with number of users takes some doing.

"The complexity of networking and hardware have changed and the challenge in a disaster recovery situation is to make the recovery as invisible to the user as possible," he adds.

Independence Or Interdependence?

ALTHOUGH PLANNING FOR disaster recovery in a distributed computer environment is more complex than dealing with a traditional data center, industry participants agree the unique challenges can be dealt with.

However, there remains the fundamental reason why disaster recovery in a distributed environment fails and that is the common mistake of underestimating the degree of dependence an organization places on its personal computers and peripherals such as printers and fax machines, networks and telephones.

"People just don't think about how much their jobs depend on those functions — or else they'd take care of it," says HP's Wilson.

In all this grim news there is an upside to having a distributed computing architecture in a disaster recovery situation: All of the company's resources are not in one basket.

And, notes Kennedy, the network can be managed logically through the network control center and many vendors support their products through remote maintenance. — *Lynn Haber is a freelance writer specializing in computer and communications technology, based in Boston, MA.*

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How Critical *is* Mission-Critical?

Are You Willing To Pay A Premium For Fault-Tolerant Systems? Do You Need To? MIS Managers In Distributed Environments Are Prioritizing Applications — And Users — According To System Costs And Business Needs

The high reliability of today's RISC-based computer systems means strict fault tolerance has become less crucial than it once was. At the same time, however, there's increased demand in virtually every information technology (IT) organization for high availability and fast recovery capabilities. Yet, because of cost, many IT managers are taking a critical look at their fault-tolerant requirements.

In evaluating their needs, businesses should weigh their actual availability requirements verses what they are willing to pay, according to Peter Kastner, vice president of The Aberdeen Group in Boston, who explains that price/performance is key because fault-tolerant systems are significantly more expensive. He says businesses are willing to pay this extra premium for certain mission-critical applications where 99.9 percent availability is required.

"We believe that the time for fault-tolerant computers has passed and will not grow much faster than the overall computing market," says Kastner. However, he points out that today fault-tolerant systems are used in every industry, often as front-end processors, and for applications ranging from 911 systems to transaction processing.

PAULA JACOBS

Alan Smith, network manager for the U.S. Federal Corps of Engineers in Sacramento, says that his organization is becoming more reliant on its network, which is spread over nine floors of a 19-story building. The configuration includes HP and HP Apollo workstations, an HP EtherTwist hub and Cisco routers, connected over an Ethernet backbone and FDDI ring. Yet, because of the inherent reliability of the network design, Smith has not found it necessary to implement extraordinary fault-tolerant measures. "Because our network is modular and configurable, we can fix any outage very rapidly," explained Smith who noted that, even if the network is down, he is still providing a service to users.

Meriter Health Services, a community acute care hospital in Madison, WI has a comprehensive disaster recovery plan in place. The plan documents key standard procedures, including backup and off-site storage. The 517-bed hospital also has standby generators, an UPS system incorporating battery-backup, as well as fire and smoke detector equipment in the event of an emergency.

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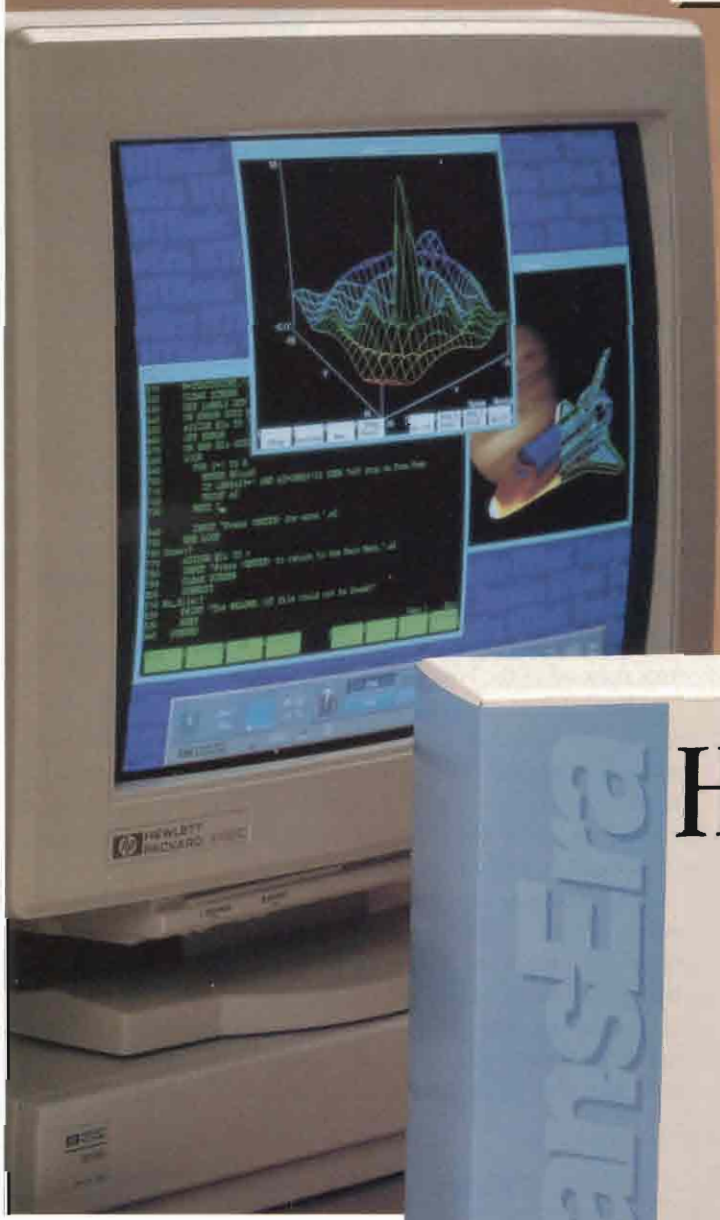

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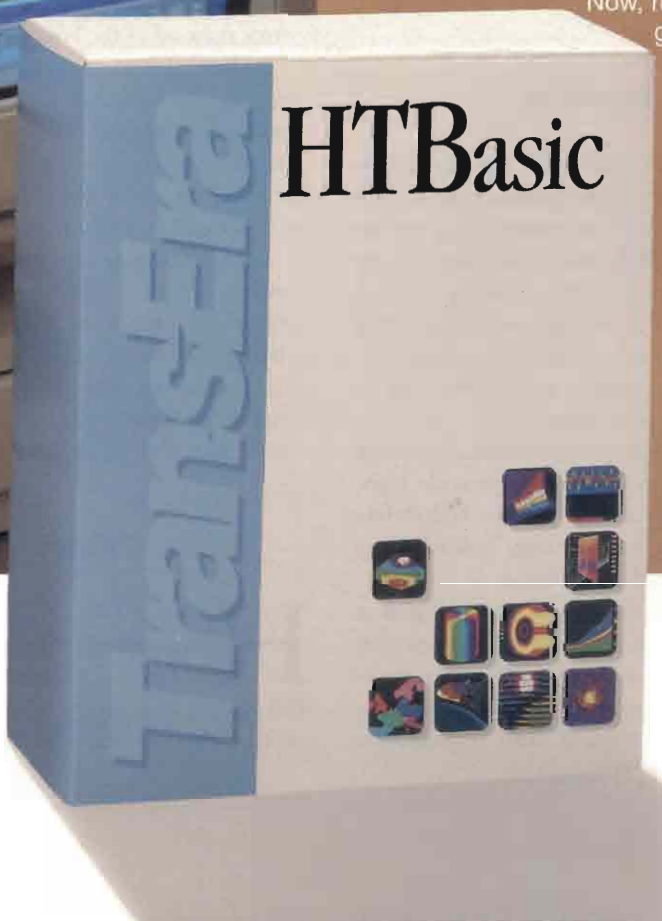

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However, Peter Strombom, vice president of information services at Meriter says that because of the extremely high reliability of the hospital's HP equipment, the need to invest in fault-tolerant systems or RAID technology has not been necessary. HP 3000 systems are used in an HP Ethernet network that includes HP Distributed Terminal Controllers (DTCs) and 600 terminals. Approximately 450 users access the HP system for a variety of clinical applications, including admitting, discharging, ordering and maintaining medical records.

Chris Christiansen, research director, worldwide commercial systems at International Data Corp. (IDC) pinpoints the areas that organizations should consider when evaluating fault-tolerant and high availability requirements. Explaining that system configuration is key, he suggests organizations factor in variables, such as remote LAN management, database configurations, software distribution to remote servers and clients, security issues and transaction times.

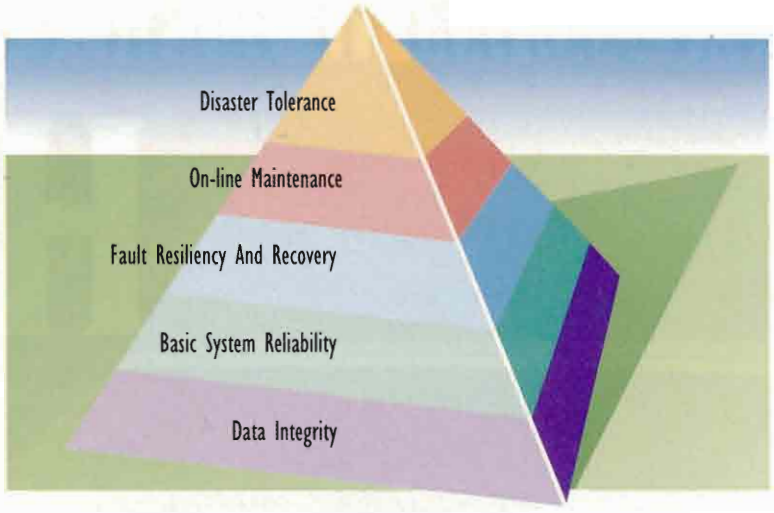

Figure 1: HP's "hierarchy of needs" model represents varying degrees of fault-tolerance and system availability.

In preparation for future requirements, Christiansen advises IT managers to differentiate between scheduled and unscheduled downtime, and determine what the organization can really afford. He notes that seasonal factors also are important for certain industries, such as retailing, which cannot afford downtime during the holiday shopping season. IT managers should then look at potential single points of failure and prioritize key areas. Finally, once exact requirements have been determined, he suggests that organizations issue a Request for Proposal (RFP), manage the RFP process strictly, and choose the exact solution they need.

Bottom Line Priorities

FAULT-TOLERANT REQUIREMENTS factor heavily into the IT strategic plans of Minneapolis-based DAMARK International, a catalog mail order company that generates $300 million of business annually. Mail-order customers can use a toll-free, 800 telephone number to order a variety of consumer wares, including home office equipment and sporting goods. Business success depends on the ability to provide customers with the latest product and pricing information and to record consumer-oriented transactions accurately.

Several years ago, DAMARK International decided to invest in a fault-tolerant computer system in order to provide high, constant availability. The company uses a Sequoia fault-tolerant system for inventory control, warehousing, general order processing and other mission-critical applications.

"Since that time, we have had the opportunity to look at our continually growing applications base and define those that are truly mission-critical," explains DeMarquis Walls, vice president, information systems and technologies at DAMARK International. According to Walls, complete fault tolerance is required for applications that support customers directly. In other areas of the business, if the system is unavailable for a few hours, it may be costly but not critical.

Therefore, DAMARK has conducted a cost study to differentiate between fault-tolerant and high-availability needs. Company findings indicate a range of 18 to 25 percent cost differential between fault-tolerant and high-availability requirements, depending on application and disk. "The premium for fault tolerance needs to be justified," explains Walls whose annual IS expenses total approximately $4 million. "If we put everything into a fault-tolerant system, that could cost an extra $1 million annually, which comes right off of the bottom line."

As part of a strategic IT decision to migrate to UNIX, the company has added an HP 9000/847 system for merchandising applications, such as product acquisition, vendor tracking and pricing. Oracle, including a full set of Oracle CASE tools, is used for development activities. Eventually, DAMARK plans to port its existing Pick applications to UNIX.

The company is also evaluating the financial implications of continuing to use a fault-tolerant system, particularly as the HP 9000 system has proved extraordinarily reliable. One avenue that is being explored is to replace the Sequoia system with two HP 9000 systems in order to provide equivalent redundancy and potential cost savings. If selected, such a configuration would also include the use of RAID subsystems for data reliability.

"Hierarchy Of Needs"

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copies of data on separate disks, while HP SwitchOver detects system failures and provides for automatic switchover between a primary and secondary processor to provide near-continuous operation for critical applications. Additionally, HP 9000 Series Fault-Tolerant Systems provide transparent fault recovery and uninterruptible on-line service for demanding business and network applications requiring virtually 100 percent uptime.

According to Bryan Dean, HP 3000 product manager for High Availability, the company has defined a System Availability "Hierarchy of Needs" to address a range of commercial requirements. This hierarchy ranges from basic data integrity needs to the most stringent requirements of environments, such as financial services or process manufacturing, that require continuous access to distributed data (see *Figure 1*).

"We don't feel that the fault-tolerant market is that large," explains Dean. However, he emphasizes that the HP 3000 series, which ranges from the basic system to SharePlex/iX coupled systems, meets customer needs for data integrity, on-line system management and maintenance, and "lights out" system management. HP is also continuing to enhance the HP 3000 with features that address the entire set of system availability needs, including provisions to improve network traffic distribution without degrading performance.

Maintaining high availability is complex, and the issues vary according to the systems environment. Managers must address several key issues when developing an effective plan. For example, can you do without automatic switchover or rollback and recovery online? Can you rebuild crashed disks online? Are there single points of failure within your systems environment? How are power supplies protected? What allowance is there, if any, for gradual shutdown? Are there contingent telecommunications lines and multiple paths to the host?

John Gantz, senior vice president at IDC, explains the key issue is availability across the organization. And with the addition of network devices, routers and bridges, and client software from different vendors, there's a much more complex range of issues. Moreover, managers must determine whether it is fault tolerance or high availability that is necessary. To say the least, understanding of these issues and the financial implications involved has become mission-critical. — *Paula Jacobs is a marketing consultant and frequent contributor to* HP Professional. *She can be reached at pjacobs @world.std.com*R.

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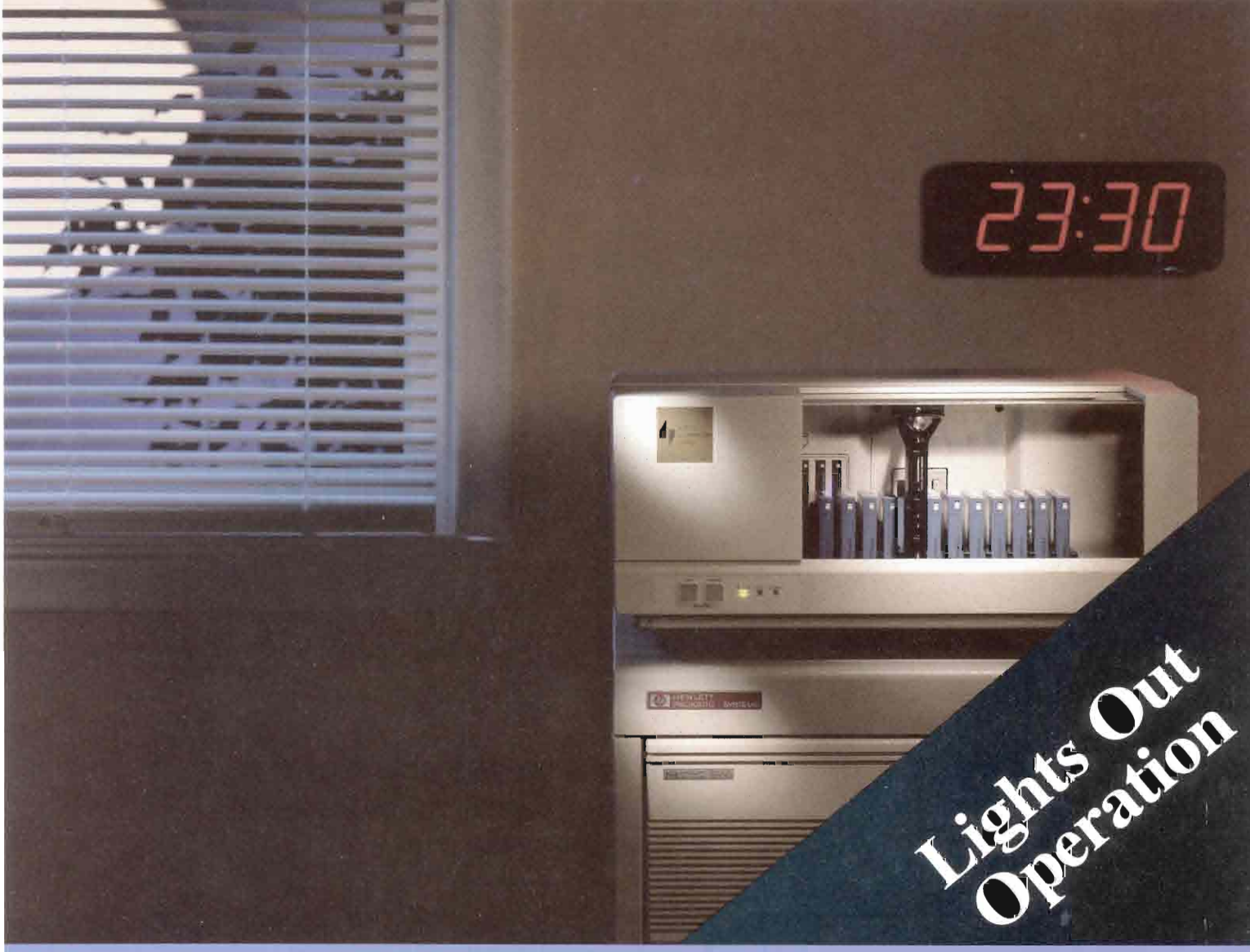

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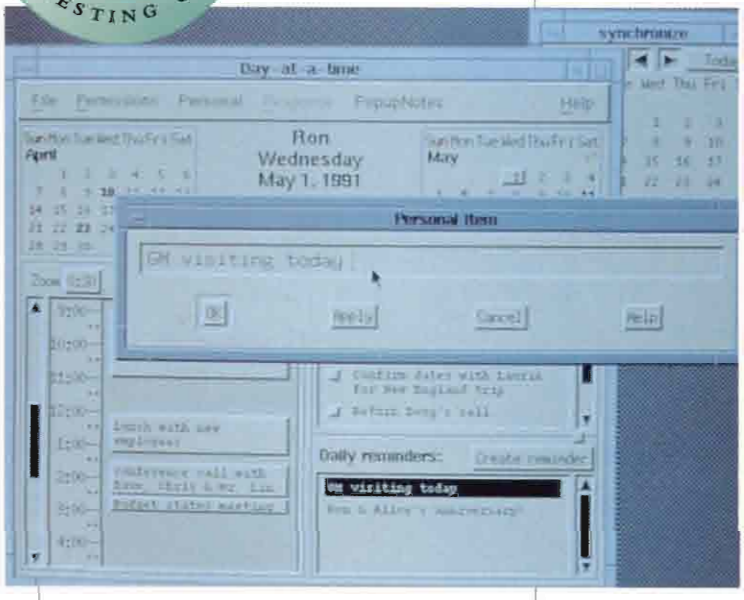

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CrossWind Technologies' Synchronize Provides Easy-To-Use X-Based Scheduling And Time Management Services

If you frequently find yourself strapped for time, if you or your associates have missed meetings, or overscheduled appointments — or if you simply need a means for more efficient and flexible time management, CrossWind Technologies Inc.'s Synchronize might be just what you need to catch up with yourself.

Synchronize Version 1.2 is a multiuser time management program for UNIX/X-Windows systems. Synchronize provides several capabilities: a multiuser appointment calendar, with your own version forming part of a common database; an individual "things-to-do" list, keyed to your calendar; "tickler"-type reminders; pop-up notes, which can be used as addenda to meeting announcements, reminders, or to-do lists; and permission controls for specific user access to calendars, reminders and pop-ups.

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Synchronize runs on many different UNIX platforms, including the HP 9000/300, 400, 700 and 800 series workstations and servers. Its distribution medium is one QIC tape holding a single **tar** file. The file subsystem produced by dropping the contents of this tape usually consists of a single hierarchy that contains the application's database, its executables, its **uil** files (those files that define and control the various

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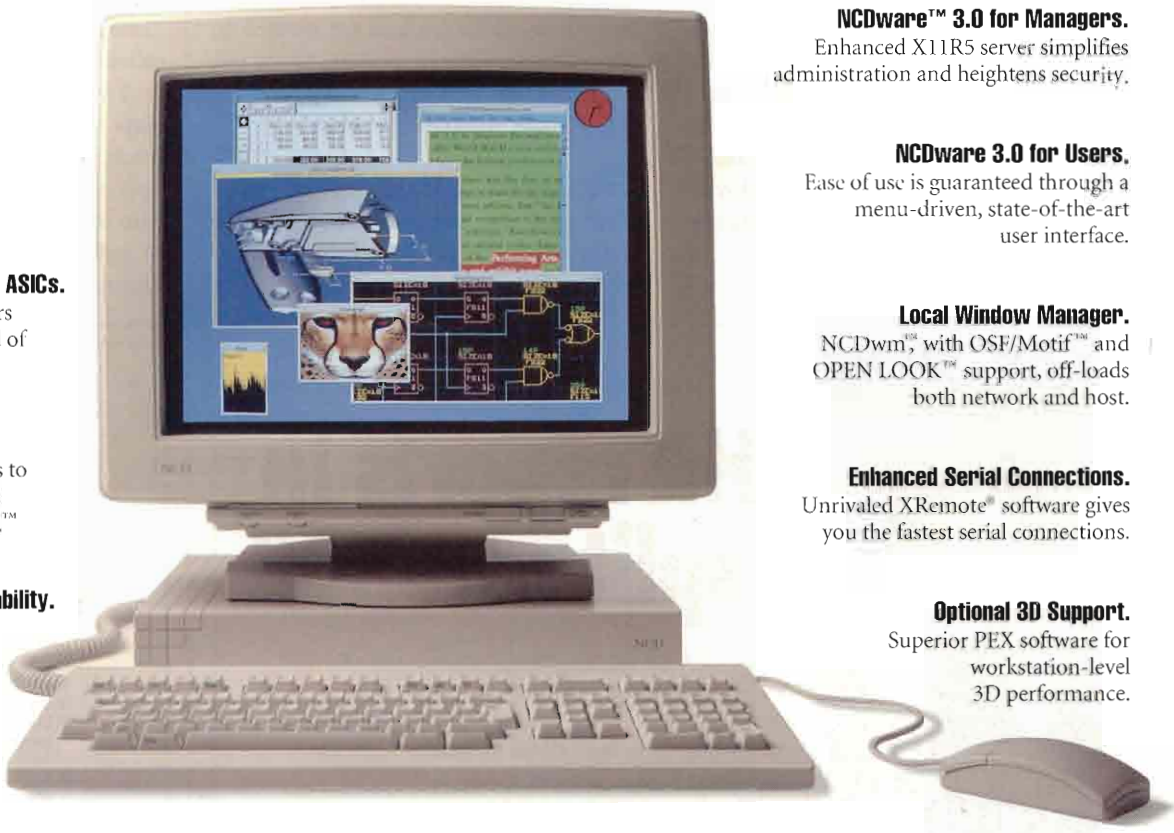

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Synchronize windows), its "resource" (e.g., user definition) files, and installation and other shell scripts. This hierarchy may be placed anywhere on your intended host.

Installing and configuring Synchronize is similarly straightforward. Once you've decided where the package will reside, log in as root. Then, create a directory in the chosen file subsystem; assign ownership of that directory to an appropriate user with **chown** (CrossWind recommends using bin as the owner because, for obvious reasons of accessibility to all users, the database at the heart of Synchronize cannot be owned by root); **cd** to the directory you've just created/**chown**ed; **tar** off the distribution medium's contents; and run the install script. That script will ask you several questions, such as the chosen location for the Synchronize hierarchy, license number for your site, and whether you need symbolic links created between Synchronize and your X installation.

Time clipped along quickly as we loaded Synchronize on our HP 9000/834. After the install script completed, we used **vi** to edit the Synchronize user files to include all individuals we wanted to allow to access the application. Once this was done, we were ready to spend some quality time with Synchronize.

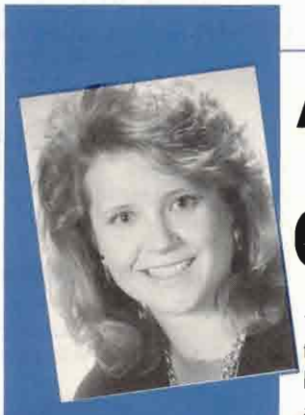
Mini-Cal, with its Day-At-A-Time feature, is the entry point into Synchronize.

One Day-At-A-Time

We began our test using the section in the User's Guide entitled "A Quick Tour of Synchronize." This section covers a main function of the application — scheduling meetings — as well as several of its most important windows: the Mini-Cal, the Day-At-A-Time window and the Event Editor.

We began our work by opening an Xterm window and keying in the command "synchronize" at the shell prompt. What appeared was the entry-point into Synchronize — its Mini-Cal. The Mini-Cal is a calendar for the current month, but it also allows you to move its display backward or forward through months and years by clicking on the left or right arrows in its upper border. Clicking on a given date in the Mini-Cal causes Synchronize to open a new, larger window called Day-At-A-Time.

The Day-At-A-Time Window displays the current user name, day of the week, date and calendar for current and upcoming month in its upper portion. Also included in this "header" is a group of pull-down menus: File, Edit, View, Options and Pop-Up Notes.



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The body of the Day-At-A-Time window reflects the major Synchronize functions: scheduler, to-do list and personal reminder areas. From the Day-At-A-Time window and relying solely on the Quick Tour, we were able to create and schedule an event and select its attendees. By clicking on a December date from the Day-At-A-Time window and then clicking the Create Event button, we caused Synchronize to open its Event Editor. We named our event by clicking on and then keying in into the Event title bar. We scheduled the event by clicking on a start time and dragging to an ending time. (You can add more information about an event by using the Pop-up notes menu.) Then, we chose the attendees by clicking on the users presented to us.

Finally, we used the Add and Close item of the Event Editor's File menu to "lock and load" our event. Then, we closed our current Day-At-A-Time window and brought up a new one for the date of the event we had arranged. What we saw was the event — a fictional football playoff game — and when it was scheduled, complete with the time frame we assigned to it.

So Much To-Do, So Little Time

Next, we worked with Synchronize's To-Do Editor, Reminder Editor and Alarm Scheduler. For each of these functions, we started at the Mini-Cal. With a minimum of clicking and keying, we quickly and successfully navigated each of these Synchronize features.

We eventually came back to Day-At-A-Time, where we now saw displayed not only our mythical playoff game, but also several tasks to be done on that same date, as well as a reminder to pick up a birthday card for Mom. The "alarm" we created through the Alarm Scheduler opened an Event Notification box that reminded us that we had a game to attend and that the game started in 20 minutes, at 1 p.m. on December 21, 1992.

Other features include the Recurring Events Window, through which you can schedule recurring events, tasks, or reminders such as weekly staff meetings. RSVP groups are a feature of the Event Editor as is a means by which you can display users according to how they have responded to an event announcement — that is, whether they've clicked the Yes, No, or Maybe radio buttons in the Will You Attend? box of the Day-At-A-Time window showing a particular event. And, User Groups is a feature, drawn on by the Event Editor, the Reminder Editor, and the Permissions menu of Day-At-A-Time, with which you set up Synchronize user groups analogous to those in UNIX's /etc/group).

There's little doubt that Synchronize fulfills its promise of providing you with a flexible, easy-to-use, effective X-based time management system. In fact, maybe it's time for your organization to get Synchronize-d. ■

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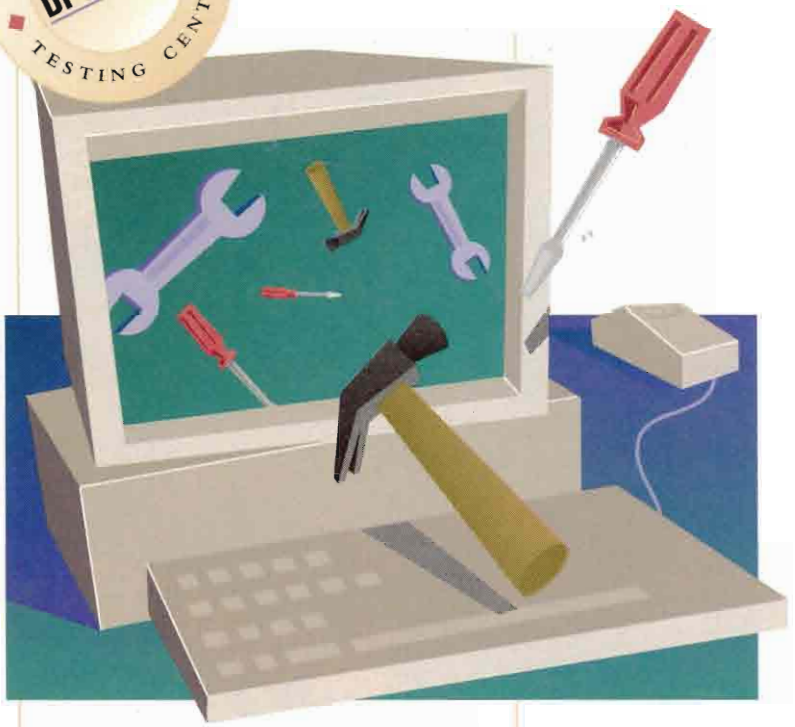

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Integrate Full-Featured Word Processing Capabilities Into Any HP 3000 Application With MiniSoft Inc.'s MiniWord And MiniSoft Toolkit

Judging from the name, you might suspect that MiniWord is just another "lite" PC application designed to provide a limited range of features, while not consuming too much memory or disk space. In fact, MiniWord from MiniSoft Inc. is a full-featured word processing package that runs on multiple platforms, including the HP 3000. And when used in conjunction with MiniSoft's optional MiniSoft Toolkit, MiniWord allows software developers to incorporate the power and flexibility — not to mention the glitz — of text and document processing into any application (even one using V-PLUS on the HP 3000).

We were interested in reviewing MiniWord and the MiniSoft ToolKit on the HP 3000 because we were impressed by these claims and because word processing and document handling capabilities have long been a weakness in the HP 3000 environment. Our test system consisted of an HP 3000 917LX running MPE/iX version 4.0 and a variety of HP terminals or PCs running terminal emulation software. We tested Version 6.10.C of MiniWord.

The Little Engine That Could

The only thing "mini" about the MiniWord engine on the HP 3000 is in the name. It has every feature you would normally expect in a PC-based word processor, plus you get the security, data integrity and

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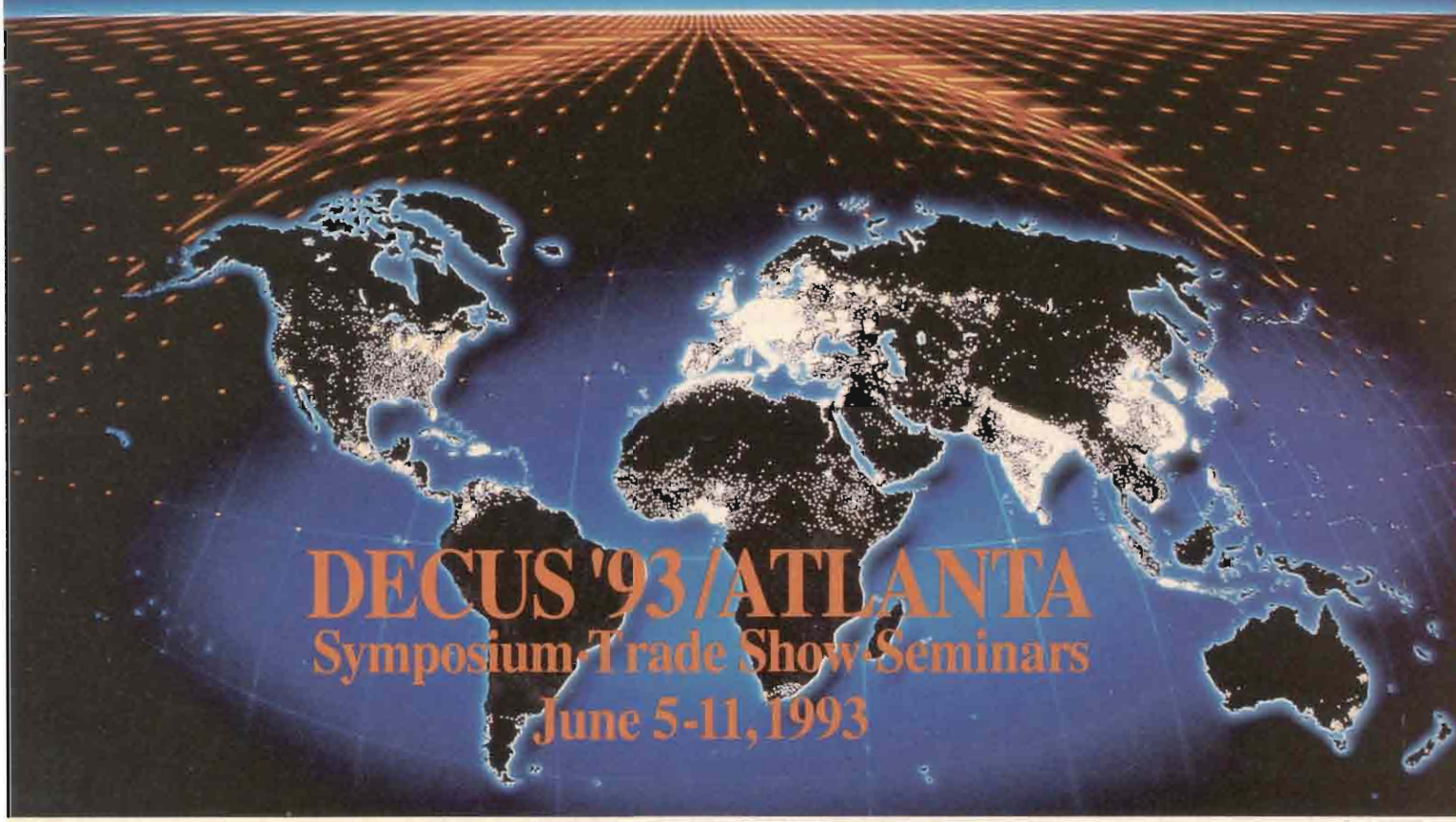

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system management you've come to rely on with the HP 3000. Also, in addition to the usual word processing features, such as automatic word wrap, block text copy and move, ASCII file import and export, mail/merge list processing, etc., MiniWord on the HP 3000 offers several features that deserve special attention:

■ ***Raw Performance And User Interface:*** Despite HP's 15-year claim to the contrary, the HP 3000 can execute character mode applications. MiniWord enables type-ahead on MPE/iX, so there is no discernible delay to confound a typist or disturb the automatic word wrap. We were able to prepare the first draft of this review using MiniWord over a 2400 bps dial-up link — a tribute both to the software engineers at MiniSoft and to the often maligned character-mode capabilities of the HP 3000 and MPE/iX.

■ ***Glossaries:*** "Glossary" is a polite name for a necessary evil: boilerplate. MiniWord provides a utility for managing those paragraphs and phrases that are used repeatedly in documents. If you must, you can place boilerplate text anywhere in your document using simple key combinations.

■ ***Decimal Tabs:*** The decimal tab is a special tab indicator that's useful when you're entering columns of numbers. At a decimal tab, all digits (0-9) and the characters $, +, -, or (move to the left of the tab mark until the first decimal point, blank space, or return. The decimal point always lines up at the tab mark.

■ ***Auxiliary Dictionary:*** In addition to a spell check dictionary of 140,000-plus words, MiniWord provides a user maintainable auxiliary dictionary of up to 500 words. This is an important feature, because most industries have a specialized vocabulary not included in a standard dictionary.

■ ***A-Bridge Utility:*** This utility extracts information from various file types (including KSAM and IMAGE) and creates a list document for mail/merge.

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If you've designed or written an application system, you've probably run into the situation where you would like to give the user the ability to enter and edit multiline free form text. You gave up on it because it was too complex. MiniSoft's ToolKit saves the day.

The MiniSoft ToolKit is a collection of four procedures (Start, Stop, Write a command, and Read the result) that can programmatically access MiniWord, WordPerfect or Microsoft Word to perform word processing and document management. The ToolKit is accessible from all major programming languages.

On the HP 3000, communication between the application and the ToolKit is handled through two IPC (message) files, one to receive commands from the application and the other to hold the

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result of each command. (The UNIX implementation employs two named pipes.) On the HP 3000, the usual sequence is for the application to post a command by writing a specially formatted record to the command file, then issue a read against the result file (which suspends the application process until the read can be satisfied). The result record is then examined, and the application program takes the appropriate action.

Our sample test application prompts for a document name, sets up some document parameters, then puts us into create document mode. When we finish creating the document, the application converts it to an ASCII file and deletes the MiniWord document.

A similar process might be used for example in a support call application that would store the report (created with MiniWord) in a database referenced by customer and product. The ToolKit also could be used in an application to create personalized form letters combining glossary boilerplate, database information (address, etc.) and new text.

Learn By Doing

Despite its advanced features we found that a few MiniWord functions perform less favorably than others.

- The DELETE function key moves around annoyingly — different keys are used at different points in the application.
- The list processing (mail merge) function is extremely sensitive to format. It took me several tries more than should have been necessary to get the training manual example to work correctly.
- The MiniWord Reference Manual is complete but should be more clearly divided into User and Administrator sections. The MiniSoft ToolKit manual could stand improvement. Fortunately, POWERHOUSE and COBOL examples were included in the package (but separate from the manual).

To create an application employing the ToolKit on the HP 3000, it is necessary that you understand how message files work. They're actually quite simple and straight forward, but if you've never used them before, they can be confusing. Several iterations of trial and error will probably be necessary.

In all, MiniSoft Inc.'s MiniWord provides a consistent approach to word processing for systems ranging from the single user desktop PC to mainframe-class systems with hundreds of users. The optional ToolKit module gives software developers the opportunity to incorporate comprehensive word processing features into their programs without having to write volumes of new code. ■

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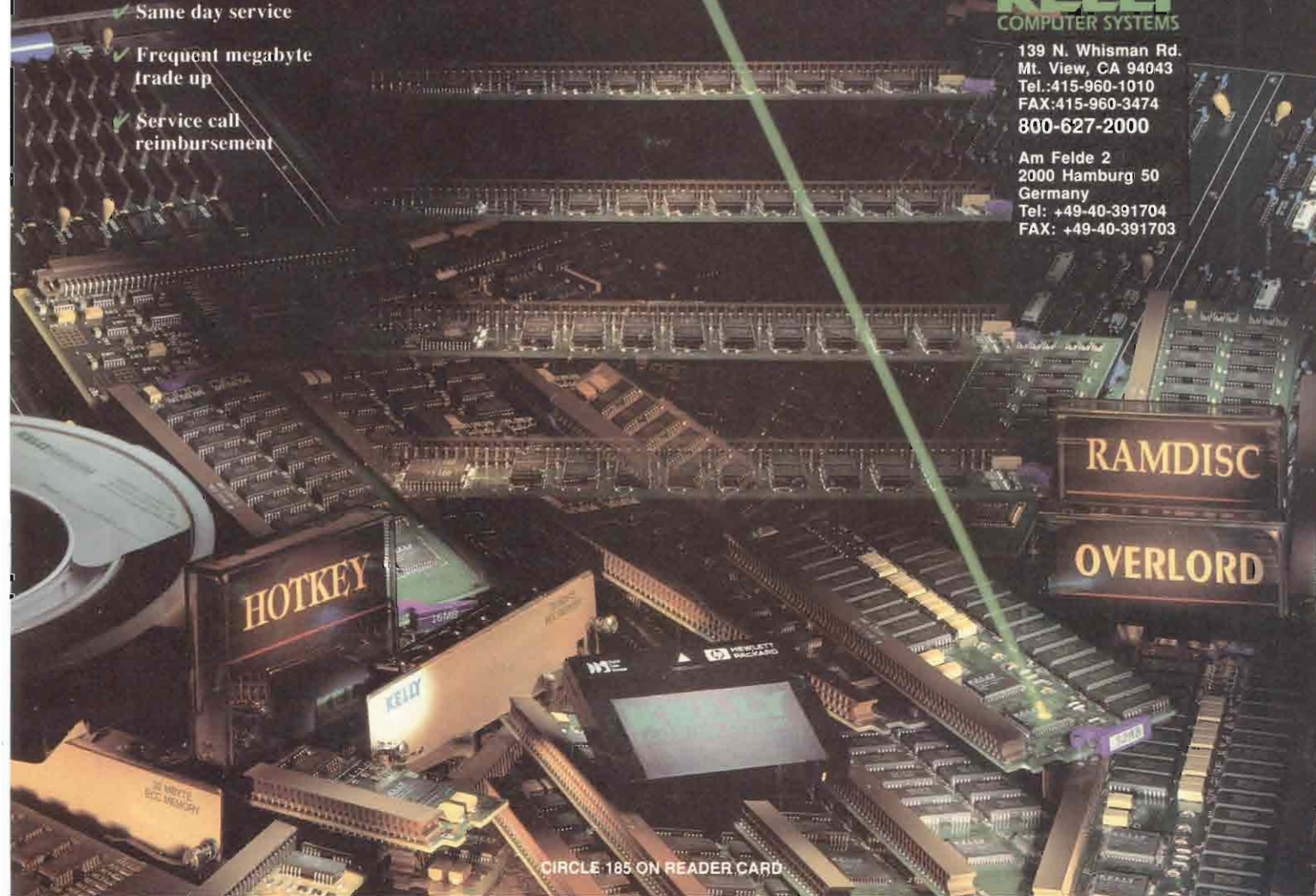

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UNIX

Miles B. Kehoe

The HP-UX File System Lets You Set And Change Attributes For File Access

With Your Permission

The HP-UX file system provides the capability to limit access to every file in the system. Remember that, in HP-UX, the word "file" is used to describe conventional files, such as program executables or data files, as well as directories, or even physical devices, such as terminals or disk drives.

Two of the critical files on your system are created by the system manager when you first install HP-UX and are modified whenever you add or modify users. These files are the **passwd** file and the **groups** file, both located in the **/etc** directory.

The **passwd** file defines all the users with accounts on your system. Associated with each username is a password, a group number, the real-life name of the user, and the default shell or control program. For security, the password is encrypted.

The group number in the **passwd** file corresponds to the names listed in the **groups** file. Groups in HP-UX are not like those in MPE. Files exist in their defined locations, and you can have files in several different groups in the same directory.

HP-UX supports three different classes of users for any particular file: the owner of the file, users in the same group, and the universe of all other users. Each file has default permissions associated with these classes of users when the file is created, although any file attribute can be changed later.

The owner class is straightforward: It is the user who was logged in at the time the file was created.

The group, like the owner, is assigned when the file is first created. By default, a file's group is determined by the group to which the user is assigned. Note that if a user is included in several groups, the group assigned to a new file is the first group listed in the groups file to which the user is assigned.

> Like most features and functions of HP-UX, permissions provide capabilities but come at a price.

The universe class applies to all other users in all groups on the system. You can imagine that, because the wrong code on a file can let anyone who logs onto your system read, alter or even delete your files or directories, you have to be careful of security problems right from the start in HP-UX.

Permissions Granted

Within each class of user, HP-UX allows three different types of permission to be associated with a given file: read access, write access and execute access.

The read attribute is self-explanatory. If a file is marked as having read access for the class of user you're logged in as, you can view the contents of the file. Therefore, if you're the owner of a file and the read flag is set for the owner class, you can browse the file. Notice that it's possible in HP-UX to set permissions such that even the creator of the file cannot read it! Luckily, the creator also can change permissions.

The write attribute means that a given class of user can make changes to the file or delete the file. There is no special delete permission in HP-UX. Also, anyone with write access should normally have read access, although that isn't necessarily the case.

The execute attribute is unique to

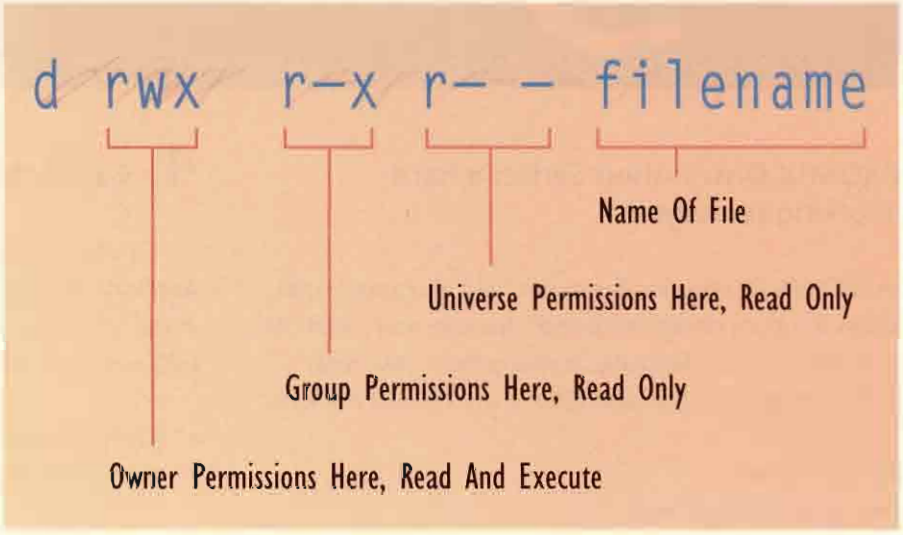

Figure 1: Understanding file permissions and attributes associated with a given file.

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HP-UX and UNIX. Execute access means different things, depending on the type of file in question. For a program or a shell script (a batch file or command file), the execute attribute on a file means it can be executed by HP-UX. If the file is a directory, the execute attribute means the user can change directories to that directory and, by default, has read access in the directory.

There is one more attribute common in HP-UX that indicates whether a file is a normal file, a directory or a special (device) file. This bit is normally set by the system when the file is created.

You can examine the permissions of any file by using the **ls -l** command. *Figure 1* shows how to read the permissions and attributes associated with a given file.

Changing Attributes

Because each class of user has three bits of permission attributes information associated with it, permissions are normally

Let's Make A Deal: HP Expands Workstation Trade-In Program

In effort to lure new customers away from competing platforms, HP enhanced its workstation trade-in program, TradeUp '93, to include a broad range of workstations, PCs and X terminals. Effective throughout 1993, the new program accepts an extensive list of brand-name systems in return for discounts of up to 30 percent on new HP workstations and X terminals.

Competing products covered by the trade-in program include workstations and X terminals from Sun, Digital, Silicon Graphics and IBM, as well as Intel-based 386 and 486 PCs and Apple Macintosh systems. Older HP and Apollo workstations also qualify, providing an upgrade path for HP's Motorola installed base to move to PA-RISC-based systems.

According to Gary Eichhorn, general manager of HP's Workstation Systems Group, HP has attempted to "cover every base — from generous trade-in credits to channel neutrality" in effort to draw workstation and X terminal users from other platforms. New customers exercising the trade-in option can realize more than $10,000 in discounts on new HP systems, Eichhorn noted.

TradeUp '93 allows customers to trade to workstations or to more cost-effective X terminals, including HP's RISC-based HP 700/RX stations. According to HP, it is the only program in the industry that accepts trade-ins toward the purchase of X terminals.

TradeUp '93 also permits customers to apply discounts toward expanded RAM, mass-storage devices or HP layered software products. There is no minimum number of systems users must trade in before the discount can be invoked, and trade-in discounts apply to the standard HP purchase agreement above and beyond program discounts.

In addition, HP announced that it would continue its software license transfer program that enables customers upgrading to HP systems to "functionally duplicate their existing software environment." HP's Open Migration Program also offers a suite of interoperability tools and services designed to help HP Apollo 9000 Series 400 and Apollo DN Series customers migrate their applications to HP Apollo 9000 Series 700 systems.

The Going Rates

The TradeUp '93 program covers two basic categories of system trade-ins:

Category I customers receive a 15 percent credit toward the purchase of new HP systems and equipment, in addition to standard HP discounts. Category I customers include those trading in:

- Sun SPARCstations.
- Silicon Graphics MIPs-based systems.
- IBM POWER RISC-based RS/6000s.
- HP 9000 Series 300 and 800 (workstations).
- HP Apollo 9000 Series 400.
- Apollo workstations/servers.
- Digital DECstations.

In addition, Category I customers who trade in 20 or more systems or Category I Channel Partners who trade in 50 or more systems by October 31 will receive a 20 percent discount. HP 9000 Series 400 customers who prefer a board upgrade as opposed to a new system also can receive a 15 percent discount toward a board upgrade kit without trading in their existing workstations. And customers who trade in HP 3-D graphics workstations can receive a 30 percent discount toward new HP 9000 Series 700 3-D graphics workstations.

Category II customers receive a 10 percent trade-in credit, in addition to standard HP discounts, for trading in:

- Non-SPARC Sun workstations.
- 386- and 486-based PCs.
- Non-MIPs Silicon Graphics systems.
- Apple MacII systems.
- Digital VAXStations/color X terminals.
- NCD color X terminals.
- IBM RT workstations/color X terminals.
- Tektronix color X terminals.
- HP 700/X terminals.
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given in octal. Thus, a file that has unlimited access to all users would have all nine permission bits set and is said to have the permission of 777. On the other hand, a file that can be edited and deleted by its creator but only browsed by all other users would have a permission of 744.

You can change the permissions associated with files using the **chmod** command, which is an important part of HP-UX. To use it, you just specify the name of the file and the new octal permissions to be associated with the file. As long as you have write access to the directory you are in, the attributes are changed immediately.

Like most features and functions of HP-UX, permissions provide capabilities but come at a price: If you're not careful, you can accidentally destroy a system. Be sure you understand what you're doing while you're learning, and whatever you do, don't use **root** as your normal login!

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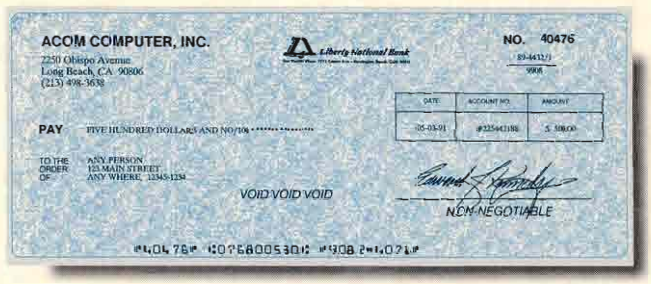

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John P. Burke

POSIX, Shmosix

"POSIX, POSIX, POSIX. I'm sick of hearing about POSIX. It does nothing for me." — *Anonymous system manager.*

"Support of the POSIX.1 standard is a leap forward ... for MPE/iX." — *HP training course materials.*

Well, POSIX support for the HP 3000 has finally arrived (sort of) after two years of marketing fanfare. It works great, too — for the "analysts," the CFOs, CEOs and the consultants, who need to certify that what they're buying is an "open system" before they sign a purchase order. But for those already in the HP 3000 IS trenches, HP's delivery of an SQL read-write interface for TurboIMAGE, now dubbed IMAGE/SQL, is a much more significant addition to the HP 3000.

Of course, the concerns of new customers and existing users are both justifiable. And which of the two enhancements you find more appealing is really a matter of perspective.

Open Systems Rationale

Many current HP 3000 users are under extreme pressure to move to "open systems." The lure is:

- You're in the driver's seat, not your vendor because you can theoretically choose hardware and software from a pool of vendors.
- Costs for computing will come down from increased competition.
- It's politically correct.

With this open systems credo prevailing, what else could HP do? Either the HP 3000 became an "open system" or it simply died on the assembly line. While the MPE installed base is large and extremely loyal, it doesn't have the necessary critical mass to be self-sustaining, much less to create new growth. Enter POSIX.

When you try to figure out exactly what POSIX means for you, forget all the gobbledegook about 1003.1 and the alphabet soup of organizations involved with developing POSIX standards. POSIX for the HP 3000 is:

- A hierarchical file system that still restricts you to using MPE groups for any files of interest, such as program files, databases and job streams.
- A set of operating system APIs that can only be accessed from C.
- Several utilities and tools (such as **vi**) that *may* have some usefulness.
- A dose of "feel-good."

I recently attended an HP-sponsored seminar describing POSIX for the HP 3000 and what it meant for existing users. The instructor noted that one of the session's goals was to let attendees "feel good about still being on MPE."

If you're eager to know what POSIX-compliance has to offer, consider that you must explicitly specify POSIX files. Utilities such as LISTFILE and STORE will perform blithely unaware of any POSIX files on the system *unless you tell them to look for POSIX files.* (Does this sound like a prescription for disaster or what?)

If you do in-house development, POSIX will have minimal impact on your operations.

So, if you're a current HP 3000 user, and especially if you do in-house development, POSIX will have minimal impact on your operations. In fact, HP recommends *against* writing to POSIX in this type of environment.

If you're a software developer that *could* have a market on other platforms *and you work in C,* the good news in HP's support for POSIX is that you now have a route to expanded markets. The bad news is that other vendors also have an easy route to your market.

TurboIMAGE: The SeQueL

HP's real key to maintaining its user base, by way of open systems, is IMAGE/SQL. Relational databases with SQL as the standard interface are a prime component of open systems. But the typical HP 3000 customer is a heavy user of IMAGE, a modified network model DBMS. With IMAGE/SQL, that typical customer can hold its head high and say "We do relational!"

Even more important than the political correctness of being able to "do SQL," IMAGE/SQL will provide the path to client-server computing and graphical user interfaces for the HP 3000 user. In simple terms, it involves a cooperating two-way communication between the PC (client) and the HP 3000 (server) and usually has a GUI interface on the front end.

The small- to medium-sized shop cannot develop client-server or GUI-based applications from scratch. Although such computing models and interfaces might be wonderful for end-users, they are still a nightmare to develop without considerable help from powerful development tools — tools that use SQL as the DBMS interface.

A few years ago, HP's public position on adding relational access to IMAGE ran something like this: An SQL shell for a network database was technically impossible, and who would want it anyway? As it turns out, it was feasible beyond our dreams (after all, a read interface was all that most of us were dreaming about), and everybody is going to want it. Furthermore, IMAGE/SQL now becomes the only truly "open" relational DBMS on the market because its internal structure is published, unlike relationals from Oracle or other vendors.

The Image Of IMAGE/SQL

At this writing, not all the ballots have been counted, but the odds favor all MPE/iX users receiving IMAGE/SQL (in exchange for increased support fees). INTEREX and especially SIGIMAGE deserve credit for encouraging HP to do the right thing. Somewhat unsettled, and certainly under-publicized, however, is the make-up of IMAGE/SQL.

Just what *is* IMAGE/SQL exactly? For now, it appears that:

- IMAGE/SQL is TurboIMAGE/iX plus high-level ALLBASE/SQL, with the ALLBASE DB core and certain other functionality disabled. ISQL and some utilities are included. IMAGE/SQL may also eventually include stored procedures.
- HP's goal with IMAGE/SQL is to achieve Level 2 ANSI Data Manipulation Language (DML) support (SQL '89 standard) by the summer of 1993. This means full read-write capability (the SQL commands SELECT, INSERT, DELETE and UPDATE). Read access is currently shipping with new systems on a retro-fitted version of MPE/iX 4.0.
- The key to unlocking SQL access to a TurboIMAGE database is the utility ATCUTIL. It ATTACHes the database to a DBEnvironment, logically mapping each dataset (names, items, item types, and security) to a table emulating ALLBASE/SQL characteristics.

HP expects that any product that works with ALLBASE/SQL and uses just the DML part of SQL also will work with IMAGE/SQL. Note that none of the structure modification components of SQL are included: CREATE INDEX, CREATE TABLE, ALTER TABLE, etc. Initially, the product only addresses the DML. In fact, the first full release of IMAGE/SQL probably will not be aware of OMNIDEX or SUPERDEX indexes, limiting performance. Furthermore, locking will only be at the set (table) level.

Why quibble? Even in its initial, limited form, IMAGE/SQL has tremendous implications for current HP 3000 users and for maintaining the loyalty and

Word Processing Integration For Host Applications.

The MiniSoft ToolKit is a programmatic interface which allows application and system programmers to incorporate a comprehensive set of word processing features directly into their application programs. The MiniSoft ToolKit has an impressive list of features including: text editing, printing, and file conversion.

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The MiniSoft ToolKit operates on HP 3000-MPEV, HP 3000-MPE/XL, HP-UX, XENIX and VAX-VMS.

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stability of the installed base. And though POSIX support on the HP 3000 is crucial for the system's long-term market viability, it has very limited impact on current users.

Maintaining Perspective

Late last fall, a major uproar concerning HP's commitment to MPE developed over remarks attributed to Wim Roelandts, vice president and general manager of HP's Computer Systems Organization, in an article that appeared in *ComputerWorld*. The remarks, which Roelandts claims were "misquoted and taken out of context," seemed to imply that MPE users were second class citizens in HP's world and that the HP 3000 had little growth potential: "For our MPE strategy, our number one objective is to maintain the installed base." Huh?

Another perspective? HP needs to maintain a strong, loyal customer base in order to develop new customers.

In the same article there appeared a characterization of HP-UX users, which I've since heard repeated by HP personnel: "[HP-UX users are] more interested in adopting the latest 'hot boxes' and aggressively moving to new technology that they install on their own [while] MPE users tend to look for solutions that the vendor installs." Ouch!

A different perspective might be: MPE users are more business savvy, more interested in solving problems and creating strategic systems. The "hot box" crowd is barely removed from, and perhaps still emotionally attached to, the video games arcade.

The truth is MPE and IMAGE oldtimers were pretty big risk takers in their day. It's a matter of perspective whether they continue to be risk takers today. So too is the relative importance of POSIX versus IMAGE/SQL.

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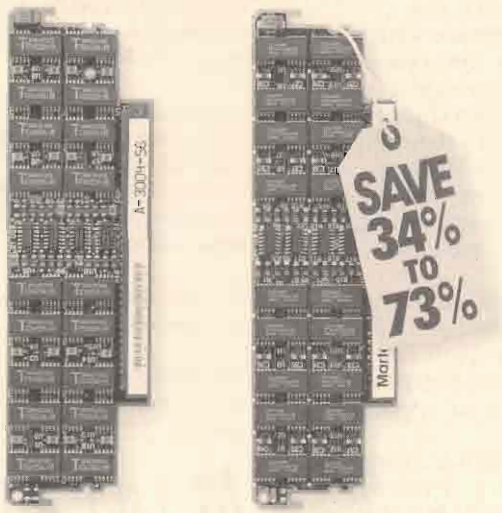
Pssst! Check This Out

The MPE TUNE command can be a blessing or a curse — if you've used it, you've probably experienced both extremes. With platform release 2P, Classic HP 3000 users now have the same capability to create chaos that MPE/iX users have had for some time: Specify a boost priority of either OSCILLATE or DECAY (the default priority algorithm) for each circular queue (CS, DS and ES). This can be useful when trying to balance a mixture of interactive and batch processes. Check it out. Carefully.

The only significant difference.



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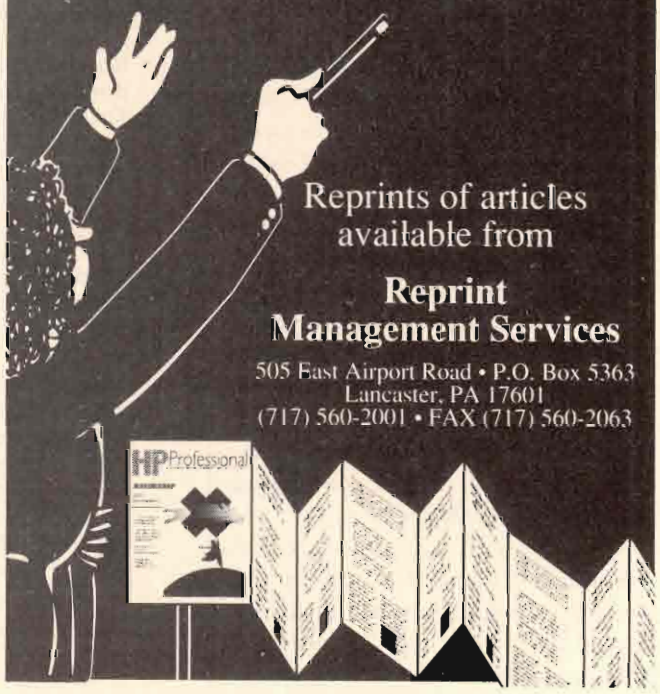

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NETWORKING

Tim Cahoon

Internet Expeditions

I have always marveled at the great explorers of the Victorian age. For them, every journey was worth beginning, and attaining their destination often mattered less than the process of discovery itself. In the spirit of those explorers, I have begun a journey — into the cyberspace of the Internet.

When exploring the mysterious interior of a new continent, you must first select a port city. Likewise, I had to find some port of call to get into the Internet. Registering for a university-sponsored computer class about internetworking seemed a bit extreme, so I turned to CompuServe instead.

CompuServe is a large information service that is accessible worldwide. All the major PC software vendors have support forums on CompuServe. I visited the TELECOM (go telecom) and the UNIX forums (go unixforum).

Once inside these forums, I searched the appropriate libraries for keywords such as INTERNET, ACCESS, PUBLIC and PDIAL. PDIAL is an acronym for Public Dialup Internet Access List. The search found the following files: DELPHI.TXT, CORPIN.TXT, ACCESS.TXT and PUBLIC.TXT. These files list services that provide varying degrees of access to the Internet.

The files DELPHI.TXT, ACCESS.TXT and PUBLIC.TXT listed public access sites across the country. I called several of these sites to gather information on the cost and range of services they offered. The most common services available were: USENET news, E-Mail, SHELL (includes FTP and Telnet), and various types of network connections. SHELL access lets you logon to a system and then go into the network from there.

Because I dial in from a PC, my concerns are long-distance charges, connect time rates, SHELL access, disk storage rates (for downloads from remote systems), E-mail and USENET news. After some comparison shopping, I found a local service for a flat monthly fee of $20. This fee provides local access anywhere within my area code, limitless connect time, and no charges (within reason) for disk storage. I can read the USENET news, send/receive E-mail, and Telnet or FTP to any Internet site worldwide.

There are many ways to reduce your long distance modem bill.

Alternative Trade Routes

Because the business of providing public Internet access is so new, rates often fluctuate. Some sites charge $100 per month plus usage. Others charge $24 per month, plus usage after the first hour. The DELPHI network, which is similar to CompuServe, is the first commercial network to provide full Internet access. For a small additional monthly fee, DELPHI members can access the Internet via Telnet and FTP. Information on DELPHI is available at (800) 336-0149 (voice).

Don't rule out cross-country services in your search. There are many ways to reduce your long distance modem bill. One good way is to use services such as PC Pursuit from U.S. Sprint. For a monthly charge, you get a fixed number of usage hours between 6 p.m. and 7 a.m. local time. PC Pursuit allows you to dial into the Sprint network with your PC. Your call is then routed to an out-dial modem local to your destination. For more information on PC Pursuit, call (800) 736-1130. PC Pursuit also offers services for handicapped individuals.

After reviewing these files and the networking periodicals I receive, I was beginning to understand this mysterious continent called Internet. Networks have been created to connect universities, high schools, and research centers within certain areas. Often these regional or mid-level networks are based on state boundaries. The mid-level networks, in turn, are connected together by the NSFnet backbone.

Because of funding and charter restrictions, many mid-level networks are prohibited from carrying commercial network traffic. However, a growing number of once strictly non-commercial academic organizations now are actively pursuing commercial accounts. Allowing businesses to purchase access to their networks helps to free them from the whims of government funding and university politics. To provide these commercial services, many mid-level networks link themselves together to bypass the NSFnet backbone. Some now cover the entire United States. The file CORPIN.TXT has more information on this burgeoning class of networks and the services they offer.

To better understand the native language of Internet users, I recently picked up *ZEN and the Art of the Internet* by Brendan P. Kehoe. It provides background concerning the culture and etiquette of the internetwork aborigines new Internet explorers might encounter. It also provides handy tips and suggested routes into the Internet's interior. — *Tim Cahoon can be contacted via E-mail through CompuServe (72467,666), cahoon@propress.com, or tcahoon@garnet.msen.com.*

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NEW PRODUCTS

HP Offers OpenODB Bundles, Distance Learning Solution

HP introduced new bundles for OpenODB, its commercial-grade object-oriented database. The company also announced that it will commercialize the HP Distance Learning Solution, an interactive distance learning system.

The new bundles for OpenODB include an evaluator's bundle and a learning version. The evaluator's bundle includes a three-month license for one to 64 users, documentation, a pass to a four-day OpenODB training class and three months of technical phone support.

The learning version targets students, researchers and technical evaluators who want to learn more about OpenODB and its object-oriented SQL interface. This bundle includes a one-user OpenODB software license for an unlimited time period and documentation.

Both versions are available for the HP 9000 workstations and business servers. The evaluator's bundle costs $5,000. The learning version costs $10,000.

The HP Distance Learning Solution has been used to train HP employees and customers for the past five years with cost savings that average $20 million per year. Its commercialization marks HP's entry into the rapidly expanding market for interactive distance learning systems that will help companies reshape training and communication strategies.

HP believes the new solution will allow companies to respond more quickly to changing market conditions, cut training and communication costs, provide faster time-to-market information and use information technology more effectively.

Distance learning can be used in areas including training, marketing, planning, research and development, and human resources. HP initially will target the training departments of large corporate customers.

HP's commercialization of its HP Distance Learning Solution will help companies cut costs and respond more quickly to changing market conditions.

HP Unveils SMDS, Frame Relay Test Tools; Launches OpenView InterConnect Lite

HP introduced an SMDS test bed, a conformance-testing tool for the Frame Relay Protocol and the HP J2263A handheld cable test set. The company also unveiled HP OpenView Interconnect Lite and the HP 4983A FDDI network advisor.

The new SMDS test bed is a workstation-based test bed that allows high-speed testing of 34-Mbits and 45-Mbits SMDS networks. Building on the HP PT502 SMDS protocol tester and the HP 75000 Series 90 ATM analyzer, the SMDS test bed is designed for testing emerging broadband networks. It includes a high-speed EISA interface card for an HP 9000 Series 720 workstation and test software based on the OSF/Motif graphical user interface. It is priced at $20,000.

HP's ACTFR executable test-suite software, a conformance-testing tool for the Frame Relay protocol, runs on the HP PT502 and PT302 protocol testers and tests the Frame Relay protocol according to the specifications of the Frame Relay Forum and National ISDN Users Forum (NIUF) ACTFR test abstract.

The ACTFR executable test suite can be used by developers and network implementers to verify the compliance of Frame-Relay products to ANSI T1.617 standards. An HP PT502 equipped with the software automatically sequences through tests that are designed to stress a protocol's implementation. This capability provides correct and incorrect input and verifies proper device reaction to that input. The test suite is priced at $1,030.

The HP J2263A handheld cable test set allows automated testing of LAN and WAN cabling systems including near-end crosstalk (NEXT) testing for certification of category 5 wiring and

Easy Upgrade For HP Hard Disk Systems

Workstation Source announced the SEJUS DIODISC, designed to fit into the standard DIO backplane of the R/3xx Controller or any other HP 200/300 Series 900. This provides simple and easy plug-in upgrade of hard disk from 52 MB to more than 500 MB in one module. Each module uses two DIO I/O slots.

Multiple modules can be used in the same system for increased disk capacity without the need for additional desk space or rack space. If required, the module can be easily removed for safe keeping of sensitive data or for convenient transport from one system to another.

An added feature of the 52- and 105-MB modules is that the DIO Accessory slot is still available for use as with a normal DIO I/O card. Small form factor, high-speed SCSI disk drives are used and a standard SCSI-2 connector allows other SCSI devices to be connected to the system. Supported operating systems are RMB 6.01, HP-UX 7.0 and HP+11.

Contact Workstation Source, Vortex PR, 25 Ashlyns Rd., Berkhamsted, Herts HP4 3BN, England, 0442 876234.

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AMSOFT To Migrate To HP 9000 Series 800

As a part of its ENSOFT open systems strategy, American Software announced that it has signed a letter of intent with HP to migrate its AMSOFT MRP-8 DRP-8 and Financial-8 software products to the HP 9000 Series 800 business servers. The ENSOFT family of global solutions introduces an open

T1 cabling. It is designed to help network installers and managers certify cabling systems in Ethernet, 10BASE-T and Token Ring LANs and the T1-based WANs. It is compatible with unshielded twisted pair, shielded twisted pair and coaxial cable. It is priced at $3,995.

The HP OpenView Interconnect Lite is a UNIX-based network-management software application that supports the recently adopted Open Software Foundation distributed-management-environment (OSF/DME) interface, making it suitable for remote management of multivendor enterprise networks.

It manages connected workgroups of mixed Ethernet and token ring nodes running on different platforms. From a single-view station, HP Openview Interconnect Lite automatically discovers, maps and monitors all of the multivendor, IP-addressable network devices, with real-time status reports on network operations. HP Openview Interconnect Lite is priced at $10,000.

The new HP 4983A fiber-distributed-data-interface (FDDI) network advisor extends intelligent network troubleshooting into FDDI networks. Existing users of HP's Ethernet and token-ring network advisors can add FDDI testing capability with a user-installable FDDI-network interface module.

The HP 4983A network advisor supports Full Station Management (SMT) Version 7.2 functions as an FDDI node for testing. Supported link-level protocols include FDDI media access (MAC), SMT and popular networking protocols such as Novell, TCP/IP, DECnet, AppleTalk, SNA, NetBIOS, Banyan, ISO and XNS.

The network advisor comes in Intel 80386- and 80486-based system platforms. The Intel 80386-based system includes 16 MB of data-capture buffer and 8 MB of system memory. It is priced at $20,000. The 80486-based system includes 16 MB of data-capture buffer and 16 MB of system memory. It is priced at $24,000. A buffer option that provides up to 32 MB also is available.

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systems version of American Software's AMSOFT enterprise systems.

As part of the relationship, the companies will work together on technology issues related to development tools, database, graphical user interface and performance optimization for the ENSOFT applications on HP 9000 multiuser commercial UNIX platform.

Contact American Software, 470 East Paces Ferry Rd., Atlanta, GA 30305; (404) 261-4381.

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Dickens Announces MAX-Terminal

Dickens Data Systems Inc. announced the Dickens MAX-Terminal for UNIX-based multiuser computing environments. When teamed with a Dickens HighPer I/O card, the MAX-Terminal is a cost-effective solution that provides users with a graphical user interface on the desktop over an RS-232 or RS-422 serial line.

The MAX-Terminal supports baud rates up to 115.2 Kbps. Full mouse support and an 800x600 X-Window in 1280x1024 displayable memory support applications that require a graphical user interface environment. The MAX-Terminal also has the ability to run in ASCII, ANSI or PC Term modes.

Contact Dickens Data Systems Inc., 1175 Northmeadow Pkwy., Ste. 150, Roswell, GA 30076; (404) 475-8860.

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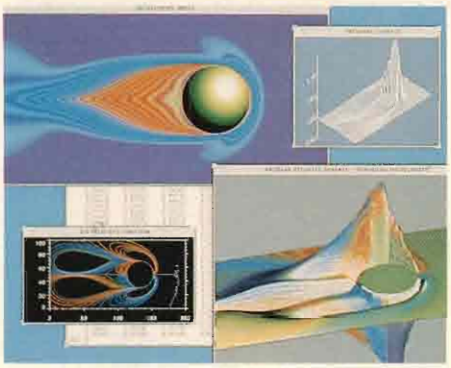
IDL 3.0 Incorporates New Plotting Features, More

Research Systems Inc. released IDL version 3.0, an upgrade that incorporates new features in the areas of plotting, visualization, enhanced application development, graphics output, documentation and licensing.

New features include streamlined application development with compound widgets and standard data formats for data-intensive research like the study of global change and remote sensing applications. Remote Procedure Calls (RPCs) have been added to enhance analysis and data distribution flexibility.

Other new features include Binary Save & Restore, new input and output capabilities including EPSI, GIF and PICT graphics formats, enhanced plotting and visualization features, improved and a revised



IDL 3.0 offers new features in the areas of plotting, visualization and more.

IDL documentation and more liberal licensing policy.

Contact Research Systems Inc., 777 29th St., Ste. 302, Boulder, CO 80303; (303) 786-9900.

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S.M. Gordon Releases SIGNON For HP 3000

S.M. Gordon & Associates released SIGNON for the HP 3000. SIGNON is a system managers tool that allows you to take a snapshot of the current sign-on environment and then reproduce it at any time.

All sign-on files are kept in an encrypted format so unauthorized users cannot access to the passwords that it contains. SIGNON is priced at $275.

Contact S.M. Gordon & Associates, 1302 Brewster Ave., Anaheim, CA 92801; (714) 533-6234.

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Sentinel Ports C++ Debugger To HP 9000 Series 700

Virtual Technologies Inc. announced several new platforms for the SENTINEL Debugging Environment: HP 9000 Series 700; IBM RS/6000, NCR UNIX, SCO UNIX; and Open Desk Top (ODT).

SENTINEL assists C/C++ programmers in locating and resolving hidden bugs with the use of dynamic memory. The SENTINEL debugging environment traps memory errors, traces stacks and reports the source file, function name and line number of the offending statements. It incorporates with reporting capabilities that can be used to reduce the amount of output, making warnings and/or error reports much more manageable.

SENTINEL is priced from $195 to $795 depending on the platform.

Contact Virtual Technologies Inc., 46030 Manekin Plaza, Ste. 160, Dulles, VA 20166; (703) 430-9247.

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Liken Supports 3 Major E-Mail Packages

Microsoft Mail, Quickmail and cc:Mail have been added to the list of "shrink-wrapped" Macintosh applications support by Liken.

Since it was delivered in January 1992, Liken has allows users of UNIX workstations with the X Window environment to run such Mac applications as Claris FileMaker Pro, MacDraw and MacProject, Microsoft Word, Powerpoint, QuarkXpress and Canvas without modification.

Contact Xcelerated Systems, 9245 Sky Park Ct., Ste. 130, San Diego, CA 92123; (619) 576-3080.

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New CDS/Scan Designed For HP 3000

Chestnut Data Systems announced a new release of CDS/Scan, a complete on-line report display system, designed specifically for HP 3000 systems and sites striving to reduce paper consumption and report printing.

New features include a file download to PC with report mapping and field delimiter insertion. Selected pages can be specified for download and special formatting options. Separate lists of archived and available reports are maintained.

Pricing for CDS/Scan starts at $2,500 depending on CPU size.

Contact Chestnut Data Systems, 6981 North Park Dr., Ste. 613, Pennsauken, NJ 08109; (609) 662-1611.

Circle 384 on reader card

FANTASIA/3000 Supports HP LaserJet 4

Proactive Systems introduced Version E.05 of its FANTASIA/3000 laser printing software. FANTASIA provides electronic forms printing, enhanced reports and business graphics for HP LaserJet printer users (including the HP 5000 enterprise-class printers).

Included in this release is support of the HP LaserJet 4 printer, an expanded forms catalog for improving the overall management of laser printed forms in the HP 3000

environment and a new module that can analyze an existing spoolfile and create a template file. Improved spoolfile management, more free fonts and a range of icon symbols also are included.

The FANTASIA/UX product, a UNIX version of FANTASIA for HP 9000 users also has been enhanced.

Contact Proactive Systems, Four Main St., Los Altos, CA 94022; (415) 949- 9100.

Circle 387 on reader card

Helios Systems Announces 64-MB Memory for HP 750

Helios Systems released 64-MB upgrade kits for HP Series 700 model 750 workstation.

The product is guaranteed 100 percent compatible and carries a 30-day money-back guarantee plus a lifetime warranty. Each HP 750 has 12 memory expansion slots and can be upgraded incrementally with up to six 64-MB kits to a maximum of 384 MB.

Contact Helios Systems, 1996 Lundy Ave., San Jose, CA 95131; (800) 366-0283.

Circle 389 on reader card

Telamon Enhances Synchronous Network Engine

Telamon enhanced its Synchronous Network Engine which performs bisync 2700/3700 RJE, 3700 and 3270 programmatic transaction processing and 3270 device polling.

The new features include automatic redial capability and command file branching to enhance conditional processing functions within batch communications jobs. These and other enhancements to the Synchronous Network Engine software are included in release A.01.45 for the HP 3000 version.

Contact Telamon, 492 Ninth St., Ste. 310, Oakland, CA 94607-4098; (916) 622-0630.

Circle 396 on reader card

Lucid Ships XLT Version 1.0 For HP 9000

Lucid Inc. announced XLT, a set of productivity tools for its Lucid Common Lisp programming environment. Version 1.0 of XLT is now shipping on the HP 9000 Series 700, the Sun SPARC platform and compatible hardware, the IBM RS/6000 and Digital DECstations.

XLT provides an X-Windows-based interface to data inspectors, program and data analyzers, as well as a stepper, debugger and other tools including an interface to GNU Emacs. The system filters the information presented, simplifying the programmer's task and making the product extremely efficient.

XLT is priced at $1,800.

Contact Lucid Inc., 707 Laurel St., Menlo Park, CA 94025; (415) 329-8400.

Circle 381 on reader card

Camintonn/Z-RAM Upgrades Third-Party Memory

Camintonn/Z-RAM introduced third-party memory upgrades for the HP Apollo 9000 models 715/33, 715/50, 725, 735 and 755.

The new memory upgrades for models 715/33, 715/50 and 725 include 8-, 16- and 64-MB kits. The 64-MB kit uses 16 Mbit DRAM technology and is priced at $780, $1,600 and $16,000 respectively.

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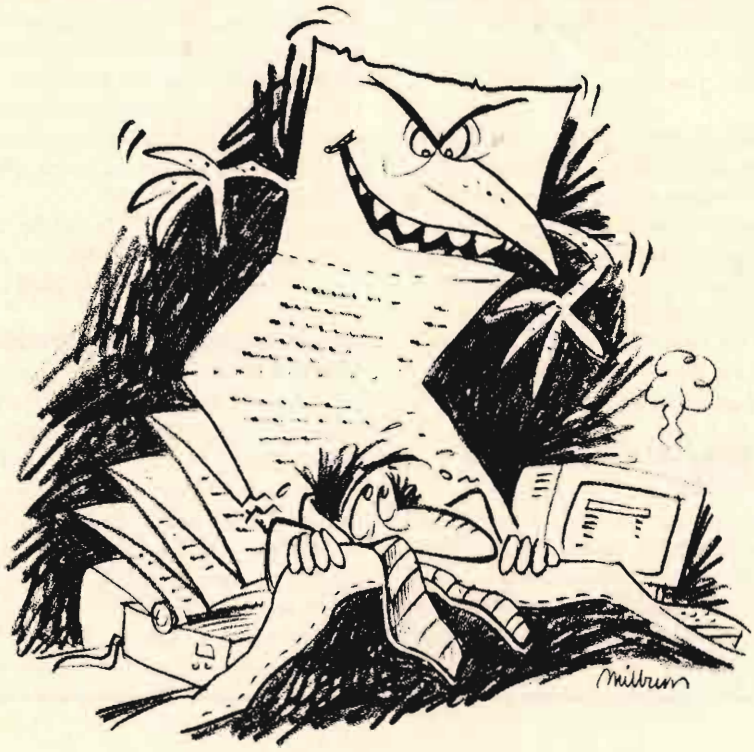

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model 735 include 16-, 32- and 64-MB kits. The 64-MB kit uses 16-Mbit DRAM technology with small form-factor modules designed to fit in the model 735 chassis. Prices for these kits are $1,730, $3,350 and $14,700 respectively.

Camintonn/Z RAM also is offering 16-, 32-, 64- and 128-MB kits for the model 755. Prices are $1,730, $3,350, $7,340 and $29,400 respectively. The 128-MB kit uses 16-Mbit DRAM technology.

Contact Camintonn/Z-RAM, 22 Morgan, Irvine, CA 92718; (714) 454-1500.

Circle 391 on reader card

Thursby Casts TSSnet For HP 9000

Thursby Software Systems Inc. announced TSSnet for the HP 9000. TSSnet allows the HP 9000 to participate in networks as a full DECnet end node and offers network terminal and printer support under Digital's LAT protocol.

TSSnet makes the HP 9000 a fully functional DECnet Phase IV end node with guaranteed Phase V compatibility while retaining coexistence with other networking protocols. The range of services offered by TSSnet includes remote login between HP 9000 systems, VAX/VMS systems and other TSSnet configured systems, including the Apple Macintosh. A comprehensive File Transfer Utility allows for complete, bidirectional, single or multiple file manipulation between remote and local nodes on a network.

Prices range from $1,500 to $5,000.

Contact Thursby Software Systems Inc., 5840 W. Interstate 20, Ste. 100, Arlington, TX 76017; (817) 478-5070.

Circle 383 on reader card

NETJet Works With LaserJet 4

Emulex Corp. upgraded its NETJet printer sharing device to work with HP's LaserJet 4. The upgraded NETJet also can be used with the LaserJet IIISi, DesignJet plotter and PrintJet printer.

The NETJet's interface board plugs directly into the Modular Input/Output slot of the LaserJet 4. With NETJet, LaserJet 4 printers can be shared simultaneously through an Ethernet LAN by PC users working in three operating environments, including Novell NetWare IPX/SPX, UNIX TCP/IP and DEC LAT. All users can print to the

LaserJet as if they were directly connected to the host computer.

Pricing is based on the protocol supported: NetWare IPX/SPX, $695; UNIX TCP/IP, $795; DEC LAT, $895.

Contact Emulex Corp., 3545 Harbor Blvd., P.O. Box 6725, Costa Mesa, CA 92626; (800) 854-7112.

Circle 380 on reader card

Zebra Supports PDF417

Zebra Technologies now provides support for PDF417, the 2-D bar code symbology developed by Symbol Technologies.

Zebra's Z-140 series thermal transfer printers now incorporate the capability to print PDF417, which is ideal for applications requiring a large amount of information on a small label. Zebra also plans to incorporate support for PDF417 in the Zebra Z-90A, Z-91 and Z-221 Performance Line Printers.

An RS-232 port is incorporated in the standard Z-140 for operation with PC, minicomputer and mainframe host computing systems. Optional RS-232/RS-422, current loop and IBM twinax and coax interfaces are also available.

Contact Zebra Technologies, 333 Corporate Woods Pkwy., Vernon Hills, IL 60061-3109; (800) 423-0422; (708) 634-6700.

Circle 376 on reader card

FreezeFrame Performs 'Live' Backups

Delta Microsystems introduced FreezeFrame, which performs "live" backups of file systems and databases at the device driver level rather than at the file system or application level.

When the device driver is notified that a backup is starting, it begins to save blocks that are overwritten in a buffer before the new data is written to disk. The backup process is given an alternate view of the file system, so while every other process sees the file system as it changes, the backup process sees the file system as it appeared when the backup began.

When the backup process asks the device driver to read a block that has not been overwritten, it recovers the block from the file system just as it normally would do. However, when the application asks for a block that has been overwritten, the device driver will give it the buffered version of the block rather than the new one. Therefore, the backup application is looking at a checkpoint of the file system at the time the backup began. When the device driver is notified that the backup has completed, it releases the buffer and returns to normal operation.

FreezeFrame is available on HP 9000 Series 300/400/700 systems running HP-UX.

Contact Delta Microsystems Inc., 111 Lindbergh Ave., Livermore, CA 94550; (510) 449-6881.

Circle 379 on reader card

Software through Pictures Simplifies Code Reuse

Interactive Development Environments Inc. (IDE) is adding Object-Oriented Structured Design/C++ (OOSD/C++) to its Software through Pictures family of CASE products.

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design diagrams then automatically generate compilable code and publish documentation. OOSD/C++'s graphical editor lets you draw diagrams of C++ software components in the clear, concise OOSD notation. The Reuse Browser increases quality and productivity by making it easier to reuse software components stored in multiple libraries. The accompanying Code Generator for C++ produces compilable code for all program objects.

OOSD/C++ is available on HP 9000/700, IBM RS/6000 and Sun SPARC-based workstations. The five-seat package for $75,000 includes OOSD/C++, training, consulting, technical support and one year of maintenance. Contact IDE, 595 Market St., 10th Floor, San Francisco, CA 94105; (800) 888-IDE1.

Circle 399 on reader card

THE NEXT GENERATION:

Unison-Tymlabs Delivers First Products, Enhancements Since Merger

In its first major product announcements since the merger of Unison Software and Tymlabs Corporation in August 1992, Unison-Tymlabs unleashed a blitz of enhancements impacting products across its broad line of system and data center management tools. The announcements reflect ongoing efforts to migrate the company's HP 3000 successes to the HP 9000 and HP-UX, while continuing to add value to existing products and introduce new options for the MPE installed base.

Maestro/UX For HP 9000

Maestro, a batch job management and scheduling utility, which helped establish Unison Software in the HP 3000 market — and an example of the kind of data center management tool many users find lacking on UNIX platforms — is now available on the HP 9000 as Maestro/UX.

Unlike the UNIX cron utility, which provides only simple date and time controls, Maestro/UX can schedule batch jobs according to customized business calendars. Jobs can be scheduled to begin automatically at the end of a month or prior to a particular date. Scheduling can also be event or context driven, so that jobs can be initiated upon completion of other jobs or when necessary files or resources are available.

In addition, Maestro/UX can automatically:

- Limit the number of jobs executing simultaneously.
- Integrate jobs submitted with "at" and "batch" commands.
- Enforce job dependencies and restrictions across one or more CPUs and platforms.
- Log statistics for reporting and analysis.
- Control all systems on a network from a single master console.

Maestro/UX is available on HP 9000 Series 800 multiuser systems and servers, as well as the Series 700 workstations and servers. For more information, contact Unison-Tymlabs at (408) 245-3000.

Circle 370 on reader card

Maestro D.01 For HP 3000

Unison-Tymlabs MPE-based Maestro product now can also manage HP-UX systems in a client-server environment, using an HP 3000 for central control. The latest release of Maestro, Version D.01, adds the ability to control batch processing on multiple networked HP 9000s from a single HP 3000 via the TCP/IP networking protocol. The client portion of Maestro resides on the HP 3000 and requests jobs as needed from the HP 9000 servers. Data center operators can manage and control jobs across a multiplatform network from the console of the HP 3000.

The new version of Maestro for MPE also permits users to log job status for HP-UX systems via a standard list facility similar to that HP supplies in MPE. (HP-UX presently provides users with no way of knowing whether a job has executed successfully.)

Maestro Version D.01 is available for HP 3000 systems running on MPE V, MPE XL Version 2.1 or later and can manage job scheduling for HP 9000 systems running HP-UX Version 8.0 or later. Contact Unison-Tymlabs at (408) 245-3000.

Circle 369 on reader card

New SpoolMate Release

Venturing further into open systems territory, Unison-Tymlabs has also added support for Novell and TCP/IP networks to the latest release of the SpoolMate report distribution and management utility. SpoolMate Version B.03, which is available for both MPR and HP-UX environments, now enables users to transfer files between an HP host and a Novell NetWare network — by means of a PC gateway — for printing to any host- or network-connected printer. In addition, users can now send output from any MPE, HP-UX or NetWare system to any LAN printer via peripheral interfaces that support TCP/IP, including HP's JetDirect interface, Lantronics print servers or Emulex Ethernet terminal servers.

The company has also added support for LPD/LPR servers (the generally accepted version of the UNIX LP transmission protocol) to SpoolMate. The LPD/LPR, which is optional, allows SpoolMate to send reports to any system supporting the LPD/LPR protocol, including SunOS, IBM AIX, DEC Ultrix and other UNIX platforms, as well as MVS 2.0 systems with TCP/IP and Novell networks. For more information, contact Unison-Tymlabs at (408) 245-3000.

Circle 368 on reader card

Tapes Plus Version C.02

As part of a series of enhancements to its various backup and storage management products, Unison-Tymlabs also announced that its tape library management system, Tapes Plus, would include support for ANSI-standard, machine-readable tape labels. The ANSI-standard labels, which positively identify each tape and specify how long tapes are to be kept before being overwritten, are designed to be read at the operating system level and are not subject to human error.

Tapes Plus also indicates when tapes have expired and may be used again. The utility's tape-tracking database provides a complete inventory of all tapes, their contents and location. Contact Unison-Tymlabs at (512) 478-0611.

Circle 366 on reader card

KLA/UX Command Performance

KLA/UX, the UNIX version of Unison's KLA performance optimization tool, now features extended control over HP 9000 CPU resources. KLA/UX Version A.01 enables system managers to enhance performance on HP-UX systems by assigning maximum processing power to priority specific users, groups, accounts, events or devices.

A simplified user interface provides a quick, easy-to-understand means of monitoring CPU workloads and on-line response.

MATLAB V4.0 Designed For HP Series 700

The MathWorks Inc. announced MATLAB Version 4.0 for HP Series 700, IBM RS/6000, and Silicon Graphics IRIS Series 4D workstations.

MATLAB now includes object-oriented graphics, sparse matrix support, sound output and customizable user interface controls. Its combination of numeric computation software, a 4GL programming language and application-specific graphical toolboxes allows

System managers can change priorities or devote more CPU power to a specific job, account or group of users as desired. CPU resources can be scheduled for end of month, end of year and other recurring CPU-intensive processing periods.

KLA/UX provides custom performance reports that forewarn users of potential problems and it can automatically stop specified processes that could lead to performance bottlenecks.

KLA/UX is available on HP 9000 Series 800 systems and servers running HP-UX Version 8.0 or later. On the HP 3000, KLA is available for systems running MPE V or MPE XL 2.1 or later. For more information, contact Unison-Tymlabs Austin Division at (512) 478-0611.

Circle 367 on reader card

More Versatile Formation

In an effort to meet a wider range of printer support needs, Unison-Tymlabs announced of Formation Version 3.4, which adds several new features to the HP 3000-based electronic forms package, including:

- Support for cartridge fonts, including internal fonts used in enterprise-class HP 5000 F100 printers.
- A kit permitting ASK users to switch from pre-printed forms to electronic forms.
- A 2680 migration kit that provides utility programs to convert IDS forms for printing on HP LaserJet and HP 5000 F100 printers.
- Support for the HP LaserJet IV.

For more information, contact Unison-Tymlabs (512) 478-0611.

Circle 362 on reader card

RoadRunner Set To Fly

After significant fanfare and months of testing, RoadRunner, Unison-Tymlabs' new high-speed backup utility for the RISC-based HP 3000 900 Series, is ready to debut. The first new product developed since the merger of the two companies last year, RoadRunner provides high-speed store and restore options, including user-configurable compression levels.

RoadRunner also permits unattended and on-line backup of HP 3000 MPE/iX systems and allows network backup of remote systems. In addition, users can append multiple backups to a single DAT cartridge and use multiple tape drives in parallel. The product simplifies routine backups by means of one-word commands for common functions and allows users to tailor backup jobs for a variety of system management functions.

RoadRunner pricing is tier-based beginning at $1,600. Demonstration versions of the software can be obtained by calling Unison-Tymlabs' Austin Division office at (512) 478-0611.

Circle 365 on reader card

Business Session Updated

Finally, Unison-Tymlabs also announced release of updated emulations options for its Business Session for Macintosh products. Session for Macintosh now comes in two flavors: Business Session for Macintosh Version 4.0, which can emulate an HP 700/92 terminal and provide full color support, and Graphic Session for Macintosh, which now emulates the HP 2397 color graphics terminal.

Both Business Session and Graphic Session for Macintosh also support emulation of VT 100 and HP ANSI terminals. They both include a complete range of connectivity options including support for LANs, Apple LocalTalk gateways and Mac TCP for access to Telnet compatible hosts. Session for Macintosh is System 7-compatible; it provides on-line balloon help and offers support for Apple Communications Toolbox file transfer tools.

As part of its ongoing expansion into open systems, client-server environments, Unison-Tymlabs also has added support for Windows Sockets (WinSock) and Super-TCP connectivity options to its Business Session for Windows terminal emulation product. Version 3.2 of Business Session for Windows delivers support for an open systems approach to integrating PCs and HP host computers. Contact Unison-Tymlabs at (512) 478-0611.

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Circle 375 on reader card

UNISPOOL Looks And Feels Like UNIX

Holland House announced a UNIX look and feel for UNISPOOL, the multiplatform network spoolfile management system. You now can switch dynamically between an MPE and UNIX command line interface, whether the system is being run on MPE or UNIX.

On the MPE platform Holland House has produced an enhanced version of its UNISPOOL/XPORT module with a new translation facility.

UNISPOOL also has been made MPE/iX compliant, which means it can be run from the MPE/iX shell, and it also recognizes the new MPE/iX filename conventions; i.e., hierarchical directories and byte stream files.

Contact Holland House B.V., Molenkampsweg 1, 5306 ZX BRAKEL, Netherlands; 31 41 87 3000.

Circle 378 on reader card

Clarity Adds Reliability To Multimedia E-Mail Delivery

Clarity Software released Multimedia Mail, an electronic mail package for HP 9000/700 systems running HP-UX 8.07 or later.

Multimedia mail uses an object-based architecture to let you combine text with spreadsheets, scanned images, art and audio annotations to build multimedia compound documents from a variety of different sources. Documents can then be mailed to users on any platform or mail system.

Recipients using any Clarity Rapport product receive their mail with all components intact just as the sender built it; others receive documents converted into their choice of application formats.

Automatic and transparent conversion and exchange of documents enables formatted communication across UNIX workstations, PCs and Macintosh systems. Automatic accomodation of other mail systems gives organizations flexibility to use multiple E-mail packages if desired. You can mix standard UNIX SMTP and HP's OpenMail X.400 protocols.

Circle 377 on reader card

More Features Expand Rapport's Document Exchange

Clarity also announced enhancements to Rapport, its multimedia office automation software available for UNIX workstations. It allows you to combine Rapport applications with UNIX software programs from other vendors and will automatically convert documents back and forth between its own file format and other applications, including those on Macintosh and PC platforms.

Clarity's Multimedia Mail.

Version 1.1 capabilities now include text, graphics, spreadsheet and image converters, including ones for FrameMaker, Interleaf, PICT, GIF, TIFF and WordPerfect Raster and Vector Graphics; enhanced paragraph formatting and named style sheets for word processing; full font and color support for spreadsheets and more.

Rapport now is available for the HP 9000 Series 300, 400 and 700.

Circle 371 on reader card

Contact Clarity Software, 2700 Garcia Ave., Mountain View, CA 94043; (415) 691-0320.

ONEAC Unveils SNMP-Ready Rackmount UPSs

ONEAC Corp. introduced rackmount version UPSs. The ON Series Rackmount units are designed SNMP-ready to support emerging management requirements for UPSs backing internetworking equipment, such as bridges, routers and hubs.

ONEAC's UPS architecture employs isolation transformer power conditioning which completely isolates the computer system from high-frequency noise. Power conditioning prevents data corruption, random system restarts and excessive hardware failures caused by power contaminants and disturbances. Prices start at $1,149.

Contact ONEAC Corp., 27944 N. Bradley Rd., Libertyville, IL 60084; (708) 816-6000.

Circle 373 on reader card

Cabletron Introduces ETWMIM

Cabletron Systems Inc. introduced an integrated bridge in a hub for linking Ethernet, Token Ring and Wide Area networks (WANs). The Ethernet/Token Ring/Wide Area Network Media Interface Module (ETWMIM) alleviates the need for customers to purchase an external solution for interconnecting different types of networks.

Applications for the ETWMIM fall into several bridging categories: Ethernet or Token Ring to WAN, Ethernet and Token Ring to LANs or any combination of the three.

Designed to fit into Cabletron's Multi Media Access Center (MMAC) series of intelligent wiring hubs, the ETWMIM combines source routing and transparent bridging capabilities to allow Token Ring and Ethernet data packets to be filtered or forwarded in a single card solution. The ETWMIM is priced at $7,995.

Contact Cabletron Systems, 35 Industrial Way, Rochester, NH 03867; (603) 332-9400.

Circle 400 on reader card

Wilco AMS Ships StatusMod

Wilco AMS announced plans to ship StatusMod, a low-cost HP 3000 status checking device for reliable laser printer and line printer connections.

HP 3000 status checking protocol eliminates the loss of HP 3000 print spool files due to paper out, off-line and printer power off conditions. With StatusMod, an HP 3000 now can print to virtually any laser or line

printer with the increased reliability of status checking.

StatusMod 2x1 provides an additional parallel input port for connecting an HP 3000 and a nearby personal computer or a network server. Additional Wilco status checking devices supporting up to 15 input ports can be ordered as needed.

StatusMod is priced at $299. StatusMod 2x1 is priced at $386..

Contact Wilco AMS Inc., 333 17th St., Ste. K, Vero Beach, FL 32960; (800) 854-6548; (407) 770-9666.

Circle 374 on reader card

Proactive Releases New FLEXIBASE Software

Proactive Systems announced a new release of its FLEXIBASE database administration software. FLEXIBASE supersedes Proactive's FLEXIBASE/3000 database tool for IMAGE/3000 databases, to provide the same high level of functionality for both IMAGE and ALLBASE/SQL.

The latest release of FLEXIBASE/IMAGE (Version E.01.02) includes improved diagnostic recommendations, an Interactive Transmute functions that allows the Database Administrator to modify a database outline, and full support for the latest IMAGE features announced with MPE/iX 4.0.

The latest release of FLEXIBASE/SQL (Version A.05.01) is now available for ALLBASE/SQL on both the HP 3000 and the HP 9000 systems. It is a DBA tool that uses the latest client-server technology and an MS/Windows GUI front end.

Contact Proactive Systems, Four Main St., Los Altos, CA 94022; (415) 949-9100.

Circle 364 on reader card

Empress RDBMS Includes Oracle V6.0 Interface

Empress Software Inc. announced that Version 6 of its Empress Relational Database Management System includes an interface to Oracle V6.0, giving Empress users easy access to information stored in an Oracle database.

The interface provides Empress users with hassle-free transfers of Oracle tables to an Empress database or Empress tables to an Oracle database. The new interface supports all Oracle data types and enables Empress users to access data whether stored on the same machine as Empress or on a remote server elsewhere in their network. The interface automatically will perform the necessary data types and format conversions, so users do not need to know anything about where or how the data is stored.

Contact Empress Software Inc., 6401 Golden Triangle Dr., Ste. 220, Greenbelt, MD 20770; (301) 220-1919.

Circle 372 on reader card

The DP Labs review of Speedware Corp.'s Speedware Designer, ("Haute Couture," HP Professional, December 1992) contained incorrect pricing information. Designer pricing is CPU-based and ranges from $5,000 to $82,500. HP Professional *regrets the error.*

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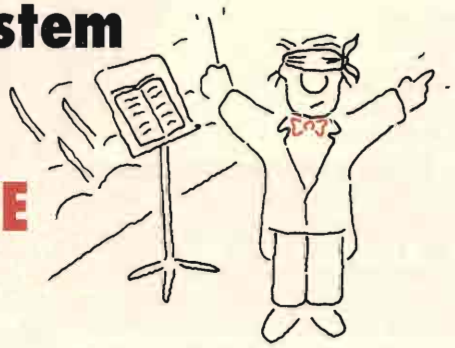

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C O M I N G I N M A Y . . .

Editorial Focus — Software Productivity

■ **Application Development Environments** — With HP's recent introduction of distributed Smalltalk and users' widespread migration from conventional C to more complex C++, object-oriented development environments could soon become standard issue for application programming teams. How are users implementing these new tools and the methodologies they support?

■ **The Seven Chakras Of Object-Oriented Programming** — Gordon McLachlan enlightens neophytes with an inspired discussion of object-oriented programming and the joys of object-oriented consciousness.

■ **Making The Big Move** — Are HP 3000 users moving to HP-UX? If so, why? In a special Industry Watch column, Bill Sharp examines the plans of some HP 3000 system managers to incorporate UNIX servers into their existing environments — and the plans of others to stay exclusively with MPE.

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Gordon McLachlan

My Six-Step Program

Issue: As a consultant, I've seen many systems come and go. Unfortunately, more go than come. All too many system implementations seem to fail, and the post-mortems start to rerun themselves after a while. Why do bad systems happen to good people?

A bad system is one that is late, costs too much, or doesn't do what it is supposed to. Despite your best intentions, you either have been or will be involved in a project that meets one of these criteria. Here are my steps for putting in a good system on time:

1. Make users responsible for defining their own requirements.
2. Limit the scope of the project.
3. Make users responsible for the implementation.
4. Focus on processes rather than software.
5. Buy packages whenever possible, and don't touch them.
6. If you have to write custom software, make sure you know what you're doing.

Users usually know what they need better than you do, so they have to be intimately involved in developing specs. This doesn't mean abdicating your responsibility, just that you shouldn't try to dictate specifications. The key is that you don't want any project thought of as an MIS problem. Working with your users as a team makes it their problem, too.

The problem is that users often think they need everything, all at once. If you're not careful, you wind up with a system that is just too damn big and complicated to implement effectively.

That's where Step No. 2 comes in. You have to take the users' wish list and pare it down to something reasonable. This is especially important if you are serious about buying software packages (see Step No. 5). No package is going to do each and every thing that each and every user thinks it needs to do.

As well as having users develop requirements, you also have to make them responsible for implementing the new system. This is called "user empowerment." If things go the way they usually do, some changes may be needed in the way users do business. As a computer jockey, your influence in this regard may be somewhat limited. Again, you want this system to be their problem, too.

It's important to focus on business processes when implementing systems. Whether you're replacing a manual or computerized process, it no doubt could stand improvement. That's what "reengineering" is all about: changing processes along with the software.

Say No To Code

Now we come to Step No. 5. Why do you want to buy canned software? Simply because it's silly to write a package that already has been written for you.

When you evaluate canned software, you'll find that no package will meet all of your needs, so don't expect to find one. Just be aware that changing packaged software is a big mistake. First of all, you'll either need the source code to do it yourself, or you'll have to pay the vendor to do it for you. You'll pay through the nose for either. Sometimes a change you need will be generally useful, and the vendor will do it gratis, but that's a rare occurrence.

This is another reason for getting your users heavily involved up-front. Accommodating a software package without changing it often requires some changes to the way you do business. Users can change their processes much more easily than you could impose such changes on your own. User buy-in is critical.

In those rare instance where your application is so leading-edge that no one else has thought of it, or your business processes are so unique that you can't find anything to fit, you may have to roll your own system. What I often find, though, is that users find it flattering to force themselves into one of those categories. All this proves is that if you try hard enough, you can develop specs that no package could possibly meet. If it looks like you can't find software for your needs, go back over your specs and processes before you start coding.

Remember too, that once you start writing code, the system will become your problem, and the users will back off their responsibility for it. Home-grown software is also much more prone to "creeping featuritus," because it's hard to corral user demands if they know the software is being developed in-house.

It all comes down to showing some restraint and not letting applications become solely MIS department problems. ■

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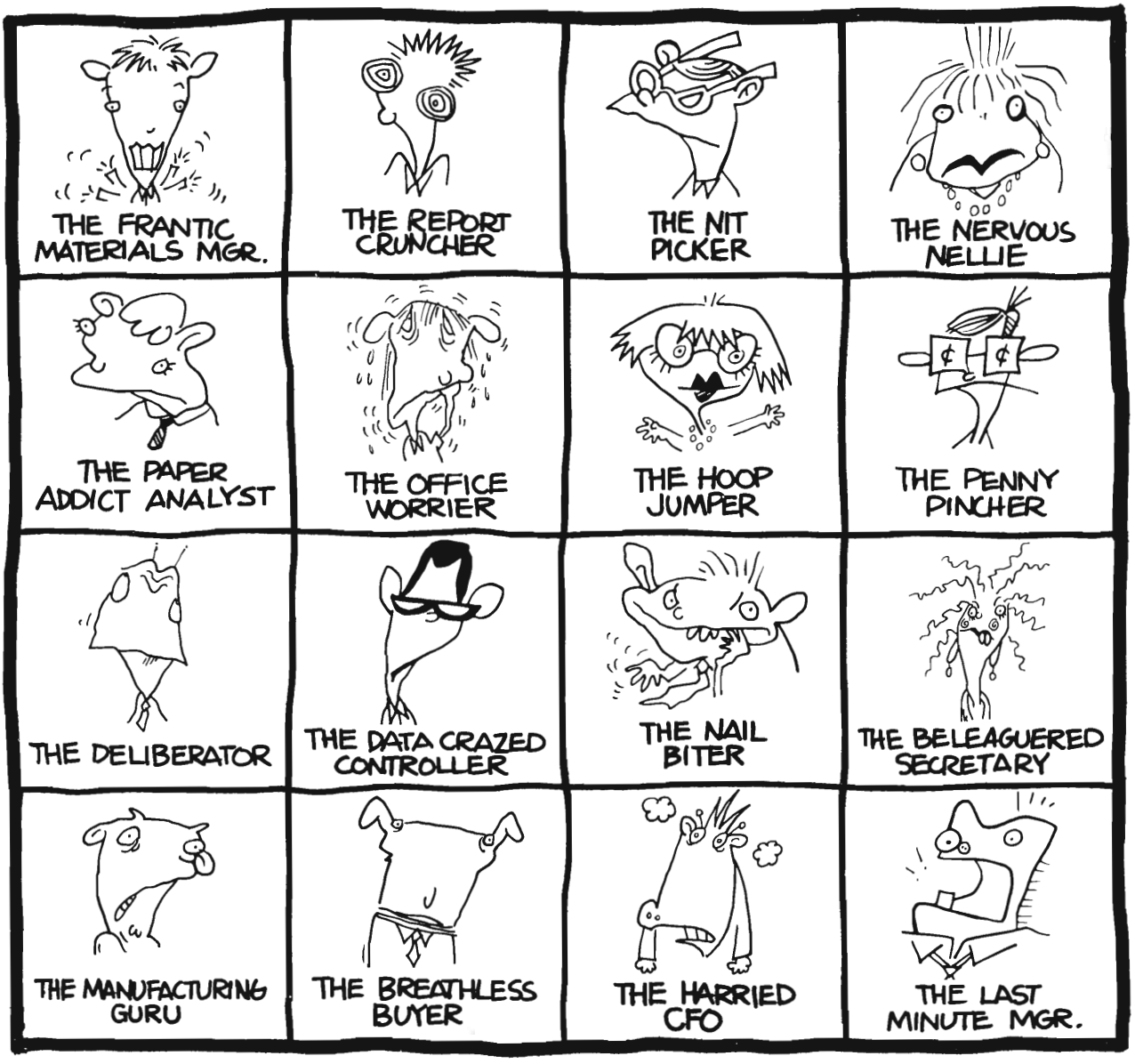

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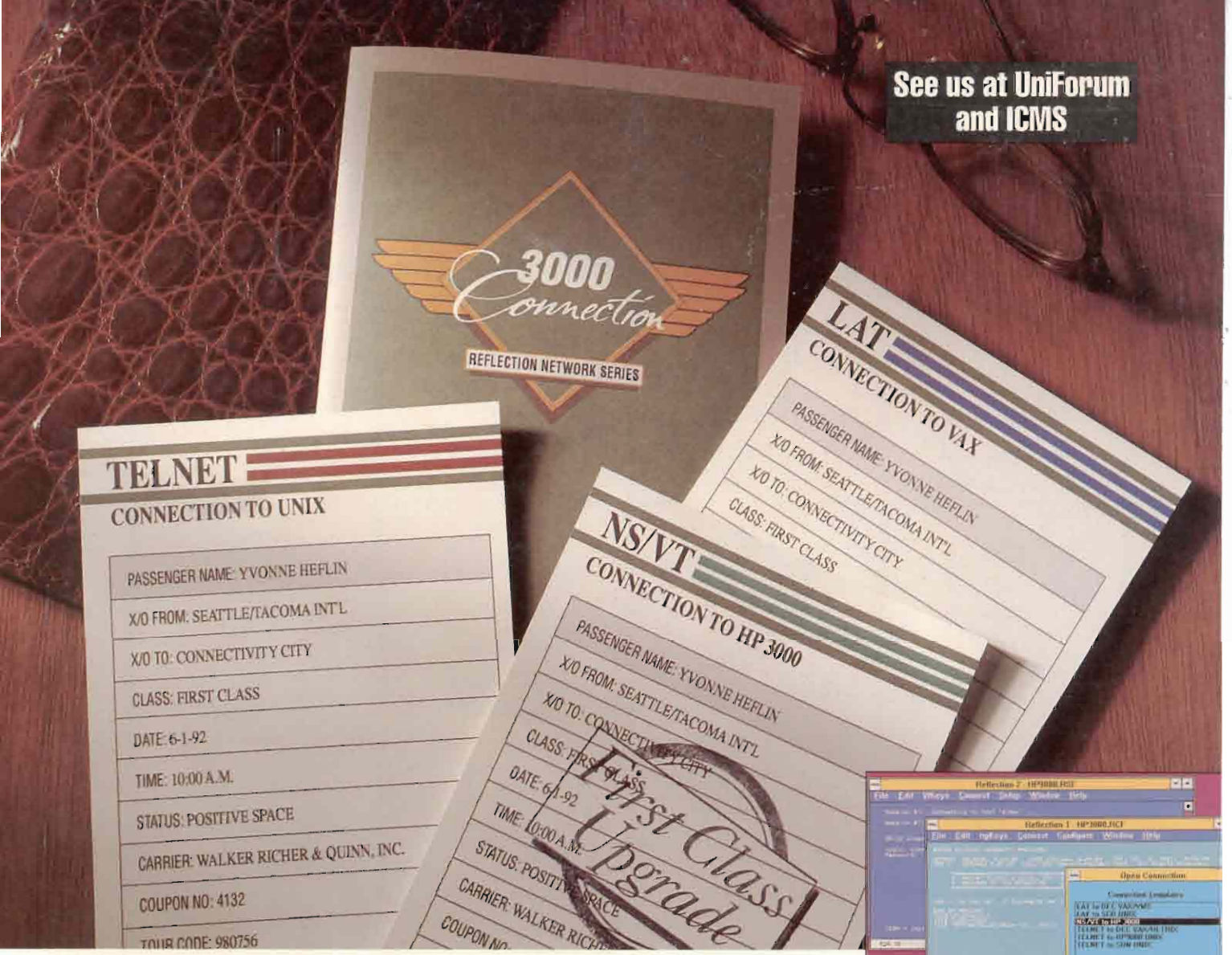

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