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HP Professional

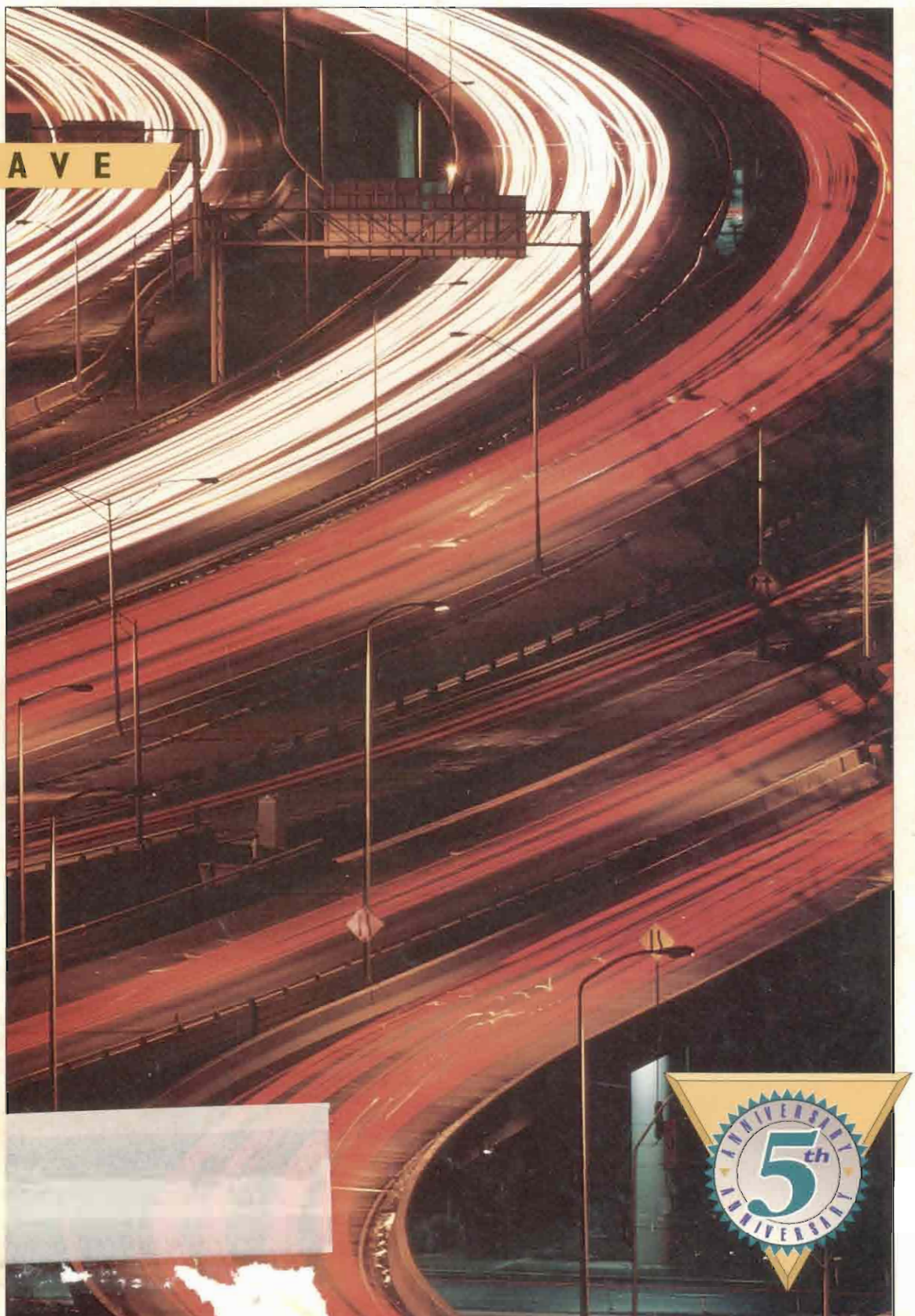
THE INDEPENDENT MAGAZINE FOR NEWWAVE COMPUTING ▲ VOL.6 NO.6

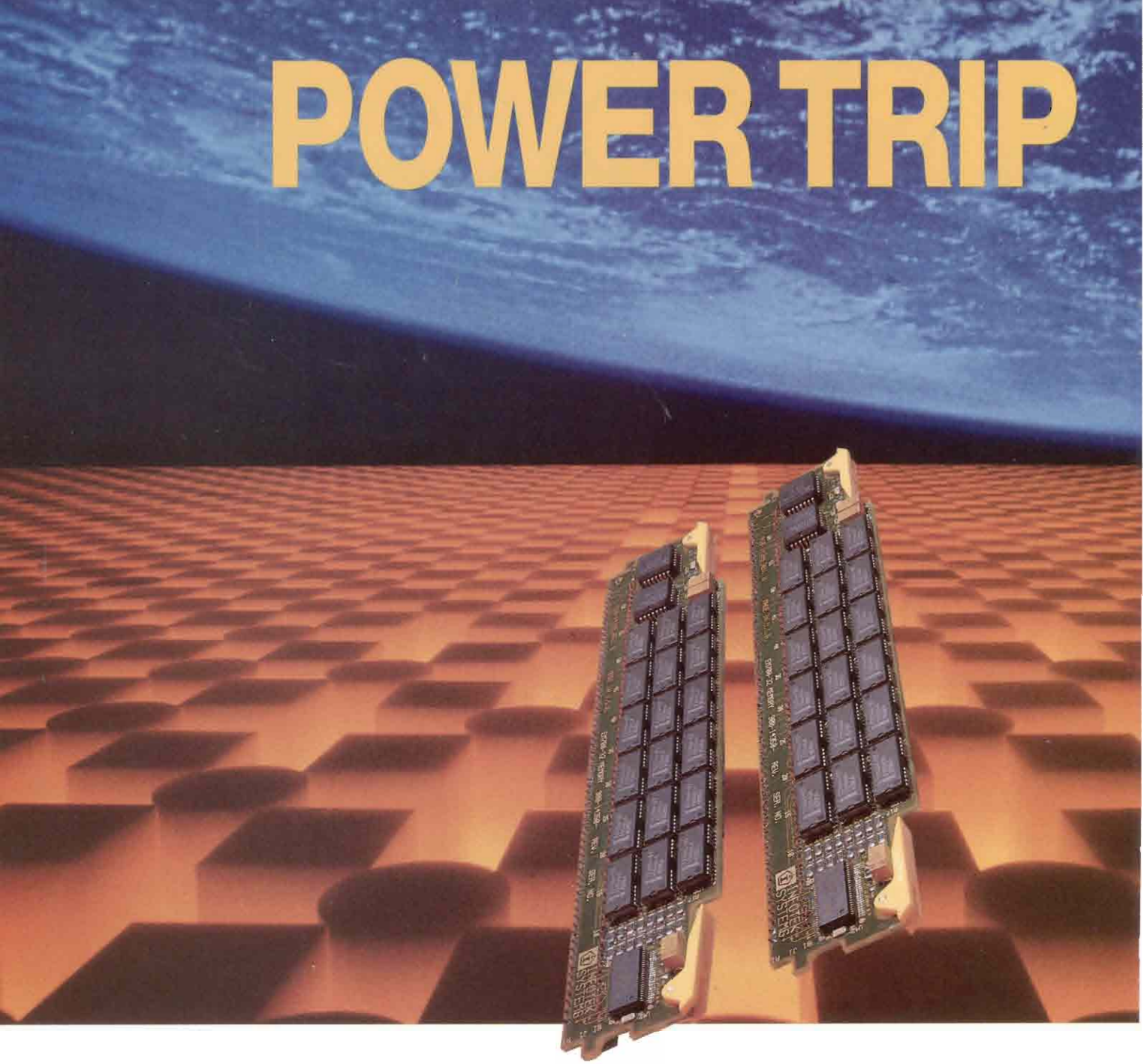
JUNE 1992 ▲

NEW WAVE

Network Management

- SNMP— Fostering Simplicity Where Complexity Rules
- Disaster Recovery Considerations For Networks
- Guest Editorial: John Young On HP's Winning Choices
- In The News: HP Redefines The Mainframe Paradigm





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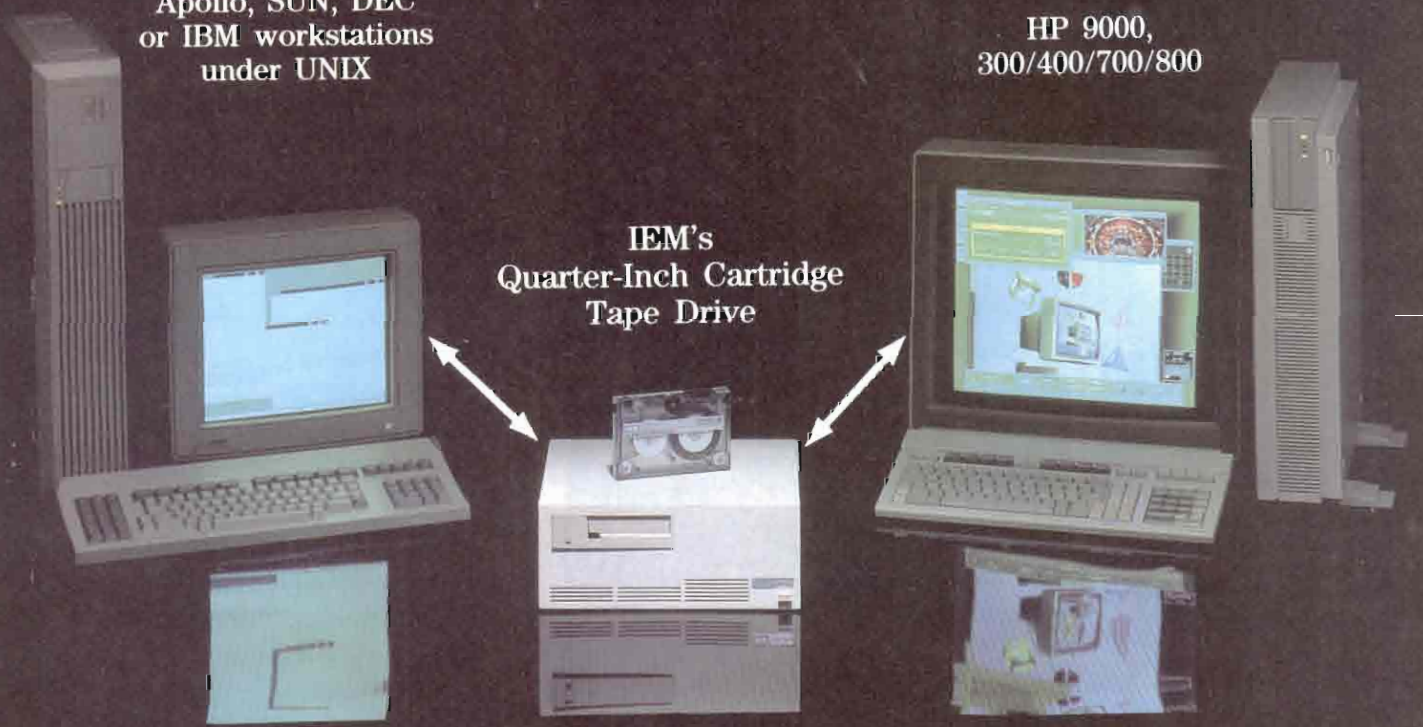

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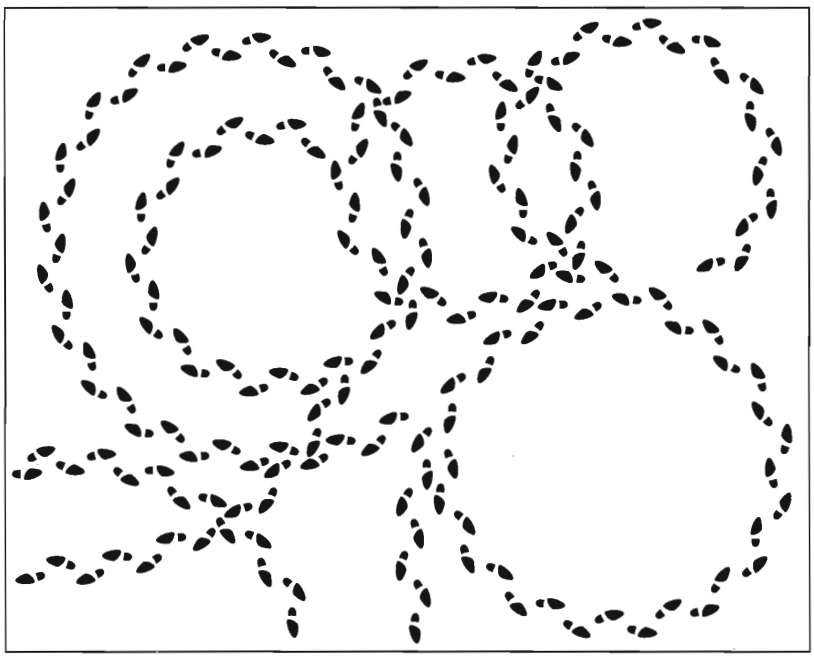

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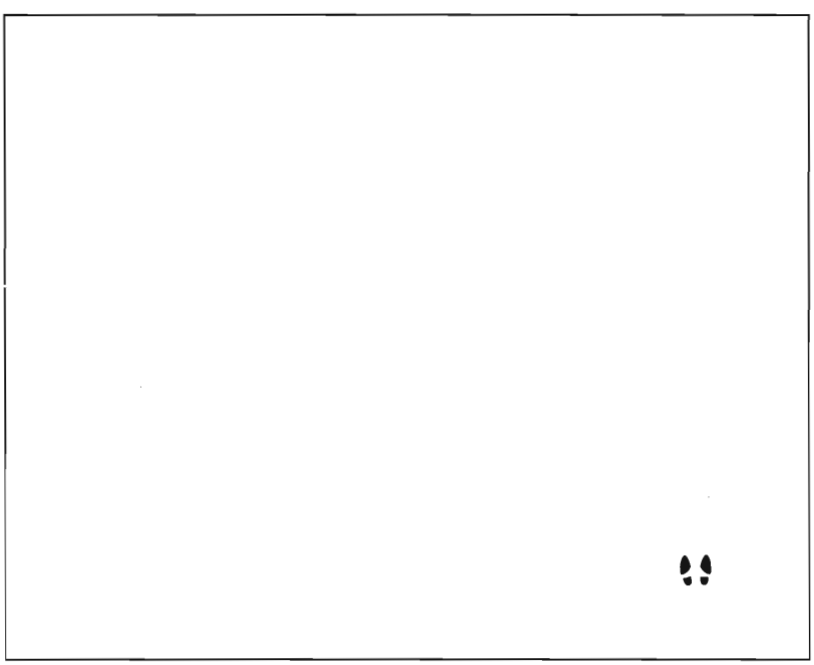

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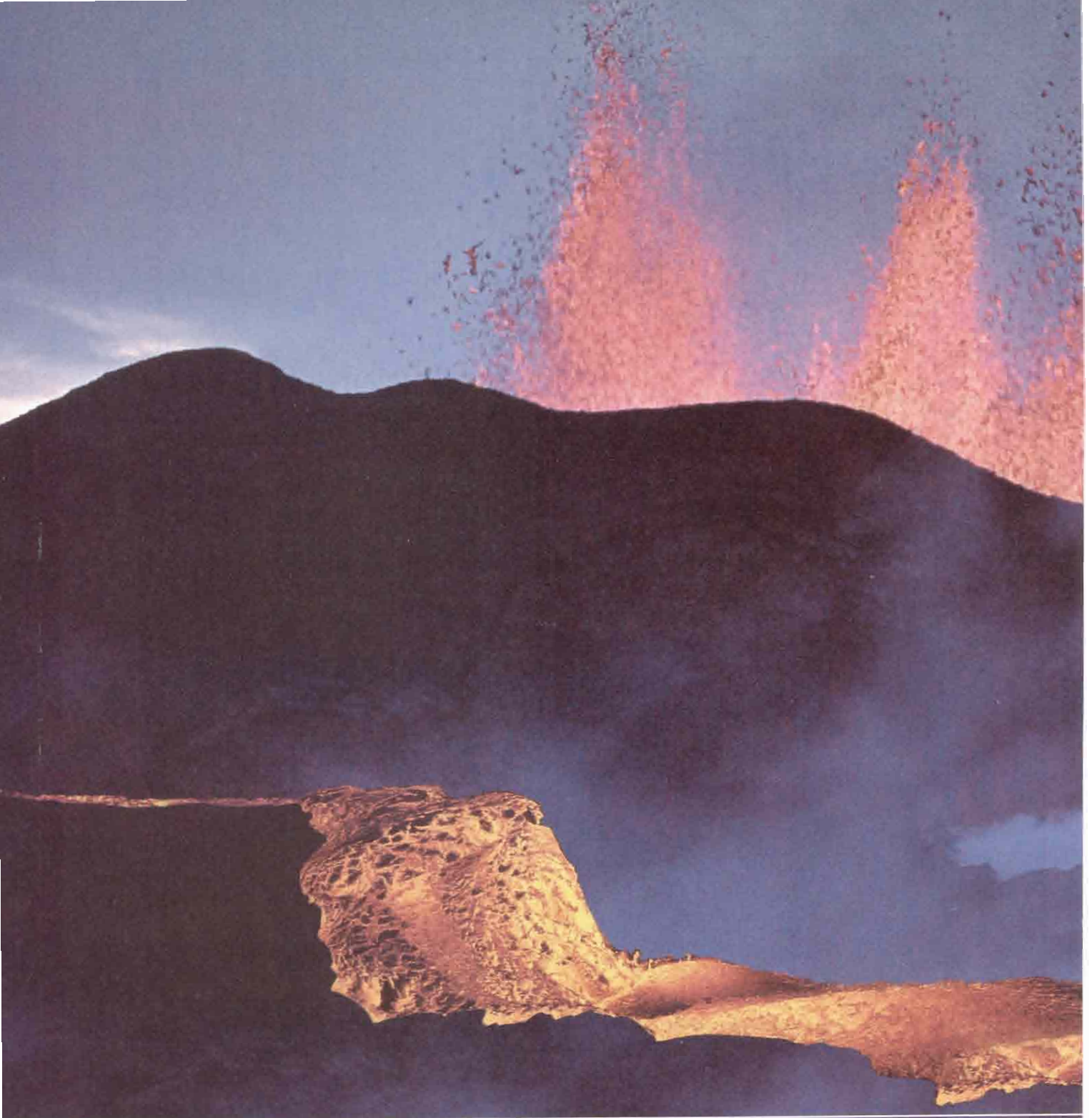

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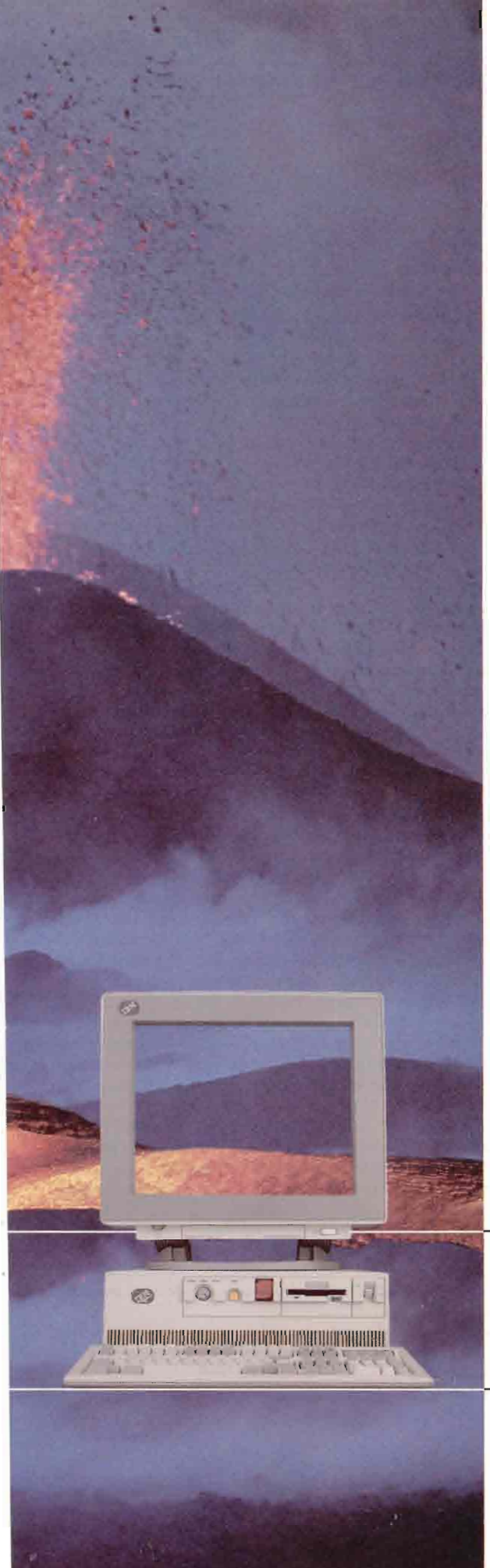

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A Guest Editorial By John Young, Hewlett-Packard President And CEO

The Decisions Dreams Are Made Of

In looking back over the past several years, the choices HP made to evolve as a top-tier computer systems supplier were historical decisions. They were critical turning points — moments that shaped the course of HP's present and future direction. These choices — to embrace RISC and open systems and to deliver easy-to-use client-server solutions — are paying off for HP and our customers. In retrospect, Professional Press also entered a critical turning point — launching *HP Professional*. Today, it appears as if we were both looking into the same crystal ball.

At HP, we concluded that our choices put both HP and its customers in a good position to move on to the next set of challenges that the 1990s will address.

Let me re-articulate some of the HP decisions made in the 1980s and comment on a few of our challenges for the next few years.

HP embraced RISC technology early, before it had become respectable. We've taken the price/performance curve — which showed a 25 to 30 percent annual improvement rate in the pre-RISC years — and given it a far steeper slope — a 75 to 100 percent annual rate of improvement.

That early choice makes HP the only vendor to deliver a scalable RISC architecture to both technical and commercial customers — and the only one that's made it possible for a huge section of its installed base to move forward and benefit from the RISC revolution.

We also were very early in recognizing the importance of open systems based on standards. When the OSI networking protocols were little more than a gleam in the eye, we announced our enthusiastic support. What's more, we put our R&D money where our mouths were, with real products as the result. Today, HP customers have access to the best multivendor networking capability in the industry — spanning PCs, workstations and multiuser systems.

We tackled the ease-of-use issue head-on. We haven't yet subdued the monster of complexity, but we've made good progress. In the office, NewWave agents have made it possible to automate tasks, and New Wave objects have enabled people to integrate data and applications. And VPlus Windows has let customers put much friendlier user interfaces on HP 3000 applications — without rewriting the applications, I might add.

In the engineering environment, we helped develop OSF/Motif, which has gained widespread industry recognition. We then used it to develop HP VUE, which makes UNIX systems a whole lot easier to work with. Our pioneering work with object technology represents a fundamental contribution to ease-of-use. We view ease-of-use as a very broad issue — much broader, really, than technology.

We want to be easy to do business with, and we're taking a good hard look at every aspect of our relationship with you, from ordering to product delivery. We want to make sure that we continue to deliver industry-leading customer satisfaction.

RISC. Open systems. The focus on ease-of-use. These are some of the right choices that position HP and its customers very well for the decade ahead. And now the challenge for us at HP is to make decisions that will be judged as insightful in the year 2000.

Our priorities for the near-term include providing the hottest hardware with best-in-class software solutions, preserving our open systems leadership, emphasizing the distributed client-server computing model and ensuring ongoing customer satisfaction.

As our most recent product and technology introductions (workstations, X terminals, multiuser systems and the PA-RISC 7100 chip) convincingly demonstrate, we've mastered the recipe for providing customers with the hottest hardware. In the past few years, HP has attracted leading third-party software tools, applications and database solutions for our computing platforms.

We will preserve our leadership role in the open systems movement. Briefly stated, our open systems strategy is three-fold. First, we will support the creation of industry standards with active participation — and leadership — in standards groups. Second, we will base our own innovations on standards, so that customers can take advantage of the new capabilities. Third, where no standard exists and we have plowed new ground technologically, we'll make our innovation available to others.

For HP and users, open systems means far more than an operating system. It includes the software infrastructure products we're delivering to help our customers build and manage open systems.

The software infrastructure, or "middleware," consists of the software layers between the operating system and the application. HP is creating and delivering middleware that facilitates the building, management and use of distributed, open systems while dramatically reducing development costs and improving time-to-market. Products such as OpenODB, HP C++, OpenView, SoftBench and our wide selection of network services are key to our middleware success.

But openness transcends technology. We will remain an open company, willing to work with others and to be honest and straightforward in our dealings with them. In an era of mix-and-match relationships spurred by open systems, we believe HP's reputation for integrity will become an increasingly important differentiator.

HP's leadership role in the evolution of client-server technology is changing the face of computing in the '90s. To this end, we will continue to build on our established client-server computing model — providing enterprise-wide benefits for end users, system administrators and application developers.

HP's client-server model provides such benefits as: better access to information and resources across different applications and geographies, less data redundancy and increased data integrity, faster application development and easier maintenance, greater flexibility in configuring systems, and the potential to tap specialized resources on the network.

Finally, the loyalty — and, on occasion, patience — of HP customers is famous. It's important to us, and we don't take it for granted. We will focus on extending the useful life of existing systems, data and applications. And then we'll build on those capabilities in innovative and exciting ways.

Our service and support organization continues to be ranked as the leading support structure in the world. We've recognized our customers' need for help in dealing with the increased complexity of open systems, so we've formed new organizations and developed products and programs to help.

As readers of *HP Professional*, you have the opportunity to better understand the decisions HP makes, the directions we are moving and how you can benefit.

Congratulations to the staff and management of *HP Professional* on its five-year celebration.

—John Young

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INDUSTRY WATCH/EUROPE

Marsha W. Johnston

HP's PRO Finds Limited Prospects In Search For Partner Abroad

Those Elusive Europeans

HP's recent announcement regarding the formation of yet another industry consortium to "advance and broaden the use" of yet another RISC technology was long overdue. This, particularly considering the fact that PA-RISC was one of the first on the market.

"Ironically, HP has been looking isolated for some time, even though it always has been the most committed open systems company," says Karen Benson, research analyst, Dataquest Europe (Paris). "We've been expecting this, wondering what they were going to do with Precision Architecture. This is worthwhile because obviously HP has to be seen as making efforts to insure the future of its architecture."

Upon examining the list of founding Precision RISC Organization (PRO) member companies, however, the lack of a European participant is such a glaring omission as to make the organization seem incomplete.

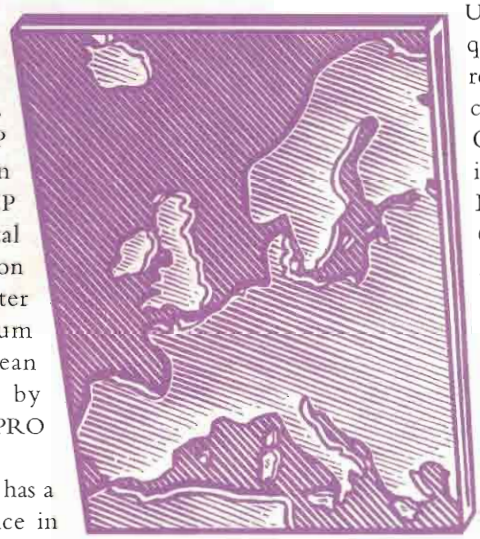
Continental Divide

Tom Black, director of marketing for PRO says, "We want to link up with credible partners who will do their own version of the technology and have the ability to innovate on it ... the logical place to start doing this is with your existing partners and we have some exceptionally strong ties with certain companies in the U.S. and in the Far East.

"That doesn't mean to say Europe isn't important to us ...," he adds.

That could be an understatement. HP Europe has grown in the last three years at a compound yearly rate of 21 percent, while the company as a whole grew at 17 percent, and HP U.S. at about 10 or 12 percent, says Robert Aydabirian, general manager for HP France. As a percentage of revenue, HP Europe represents about 38 percent of the company's total business, but 45 percent of that for low-end UNIX servers, he adds.

The HP worldwide center for PC R&D is located in Grenoble. Furthermore, says an HP spokesman in Geneva, HP Europe's total expenditure on R&D is greater than the sum of all European R&D done by the Japanese PRO partners.



HP indeed has a strong presence in Europe, but that doesn't preclude the need for HP to build some stronger ties with major European information technology companies in order to broaden the use of its RISC architecture.

This need has not escaped Black's attention. "We would like very much to develop the same sort of linkages to European partners as we have elsewhere," he says.

Candidates

The only question that remains is this: Which European company should, or could, HP sign up as a PRO sponsor?

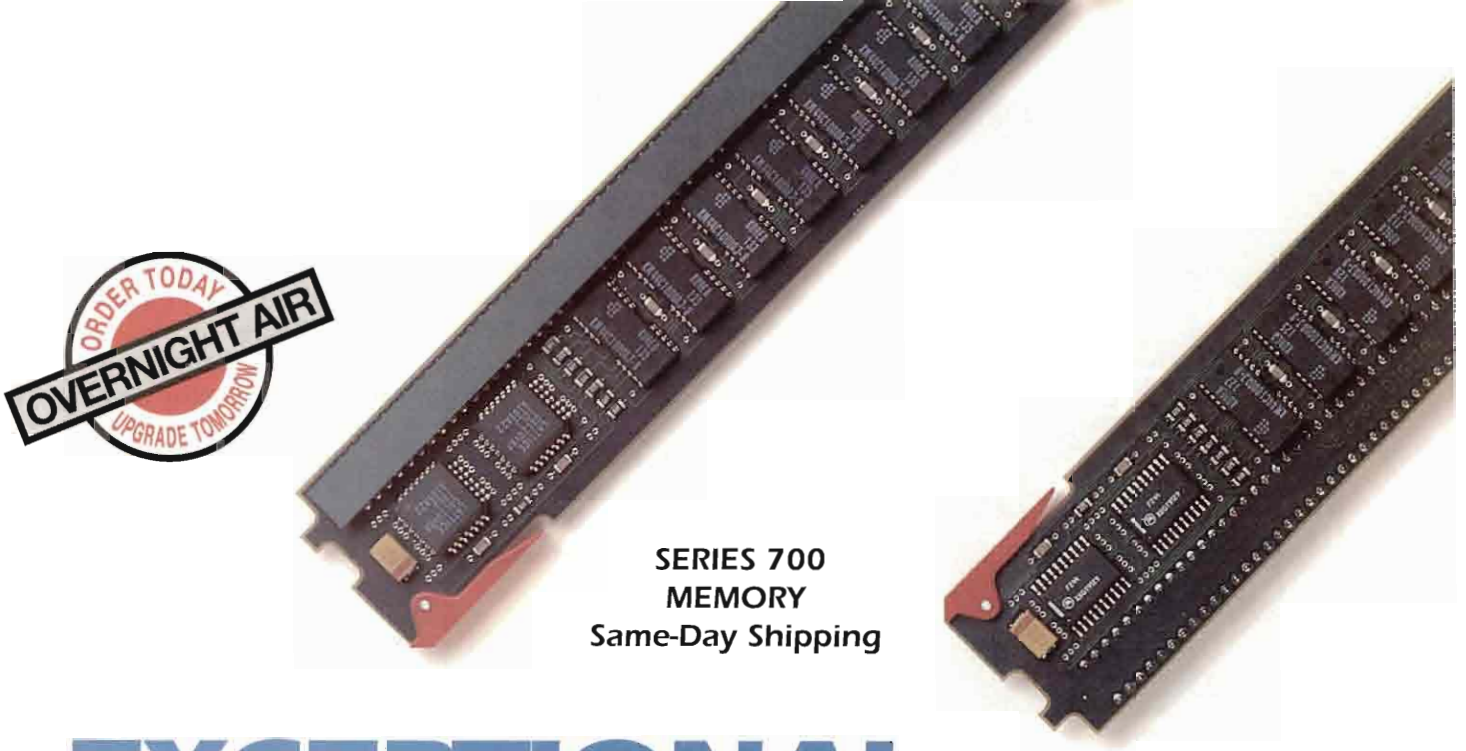
Up until January, the most obvious candidate was Groupe Bull, who finally joined the IBM-Apple Power RISC axis after weeks of negotiating with both HP and IBM. Bull had been using MIPS technology, but had found the relationship unsatisfactory and, thus, began searching for a new RISC partner.

It's undeniable that it would have been a plus for Precision Architecture to have lured Bull into its camp, even with that company's dire financial problems. Its DPX multiprocessor UNIX machines are selling quite well in Europe and receive great reviews from com-panies like Softlab GmbH in Munich, who is using them at the European Space Agency. One Bull advanced technology marketing executive, who was involved in meetings where HP and IBM looked at Bull's multiprocessing technology, said Bull was chagrined that HP representatives seemed unimpressed by the technology, whereas IBM saw it as a great potential innovation for Power RISC.

As a result, and unfair though it may be, HP is left looking as though it is playing catch-up to what has become a fairly powerful Power RISC alliance.

So, Who's Left?

Siemens-Nixdorf Informationssysteme AG (SNI) uses MIPS technology in its workstations. According to Eberhard Reichert, vice president of marketing, the company has decided to stay with MIPS despite its recent purchase by Silicon Graphics. Not that SNI has anything against Silicon Graphics — it signed up to OEM Silicon Graphics workstations last fall. Says Dataquest's Benson, "SNI has been a megacustomer for HP in



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HP-345/375/380			■	■		■	■
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HP-362		■	■	■			
HP-382			■	■		■	
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Europe; it buys a lot of 9000s. This must affect their business with HP."

Olivetti? Olivetti is an active member of the ACE consortium, having built a MIPS-based PC in order to get Windows NT on it. Being close to DEC, the Italian computer maker also has committed itself to the Alpha microprocessor.

ICL Ltd., though it is now largely owned by Fujitsu Ltd., still can be considered a European-based manufacturer. However, it's using Sun's SPARC architecture in its midrange UNIX servers.

Various Options

As Benson quips, "Although it does seem that HP has signed up largely Japanese manufacturers, it's true that there are hardly any good candidates left in Europe."

Nevertheless, says Black, "What we've seen in our PRO recruiting efforts is that people have changed technology wholesale. Convex is a prime example." SNI's Reichert says the only concern the company would have about remaining with MIPS would be if the architecture became proprietary. He added, however, that "I think Silicon Graphics will do everything possible to keep it neutral."

Even if no computer manufacturer decides to opt for PRO, says Robert Abehassera, strategic alliance manager for CSO in Europe, the organization is open to sponsors from other industries. "There could be members in mechanical engineering or aerospace. When we say we want to broaden the use of PA-RISC, it's in various industries. When you're a leader in an industry, you can provide the enhancements to PA-RISC that suit your needs, whether they be automotive or PBX manufactured."

Certainly, if one looks to telecommunications, the potential candidates for PRO are numerous and powerful. Any of the public telecom operators (PTO) would be ideal partners, particularly those that are getting heavily involved in value-added networks and other services, such as France Telecom, British Telecom, Cable & Wireless, Deutsche Bundespost Telekom, PTT Netherlands and any of the Nordic PTOs.

Germany's main automakers, BMW and Daimler-Benz, sometimes seem to be as heavily involved in information technology as they are in automaking. BMW owns 75 percent of Softlab and has set out to buy a CASE company in the U.S. Daimler spun out is IS division, making Debis Systemhaus powerful enough to buy 34 percent of giant software and systems house Cap Gemini Sogeti.

Other potential PRO sponsors could come from Europe's CAD/CAM companies. Petra Gartzen, of Dataquest Europe in Denham, U.K., says CAD/CAM companies are actively porting their systems to PA-RISC.

Black is naturally circumspect about saying who will sponsor PRO in Europe. "We've been actively working in Europe and with a variety of folks," Black says.

Who knows? Having a variety of combatants may in fact be the key to winning this architectural chess game. ■

HP Professional 5th Anniversary

Dave Mallery, editorial director, in the July 1989 issue of *HP Professional*, writes: *Times have changed. HP can no longer sit back in its complacent, high-quality, high-margin world and build instruments and a few computers. It's abundantly clear to industry watchers that there are going to be only a few survivors and lots of casualties in the computer world ... By this time next year the price of a workstation mip will be flirting with $250.*

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NEWS & TRENDS

Shattering The Glass House Paradigm

Armed With A New Line Of High-End PA-RISC Servers, HP Steps Up Its Campaign To Redefine The Data Center

After spending the past year getting its foot in the corporate data center door with its high-end systems, HP is now poised to make a more imposing entrance into an industry segment traditionally dominated by IBM mainframes.

HP's new Corporate Business Systems (codenamed Emerald), available in both HP-UX and MPE/iX flavors, are new high-end extensions of the HP 3000 and 9000 product lines designed to offer standards-based mainframe-caliber computing at substantial savings. HP is positioning the powerful new servers to both co-exist with and replace mainframe systems.

The product line consists of nine high-performance, air-cooled PA-RISC systems that pick up where the HP 3000/980 and 9000/870 leave off. Ranging in performance from 110 to more than 400 transactions per second (TPS), the family features uni-processor and two-, three-and four-way symmetrical multiprocessing models which can support up to 4,500 (HP-UX) or 2,300 (MPE/iX) users.

The new systems are object-code compatible with their predecessors and HP peripherals and software. Through support of such networking technologies as Bisync, SNA and Token Ring, the systems offer connectivity to IBM mainframe environments. The systems support all interfaces currently supported by HP systems, including SCSI, HP-FL, Ethernet and Token Ring. FDDI support has been added for high-speed I/O.

The standard configuration will accommodate up to 2 GB of main memory and 690 GB of on-line storage (one terabyte by early '93), and 256 MB/second of I/O capability. The backplane's 1 GB/second bandwidth is five times that of the 870 and 980 models.

Over the next few years, Corporate Business System customers will be able to go up to 64-way multiprocessing with add-in boards. When HP's new 7100 PA-RISC chip is made available as a plug-in option early next year, it should boost the line's performance by about 50 percent across the board. Later in 1993, another new chip will offer 16-way multiprocessing. The 32-way chip is expected in 1994.

HP Corporate Business Systems

Model	OS	Performance* (TPS)	U.S. List
990/100	MPE/iX	114	$365,000
992/100	MPE/iX	145	$440,000
992/200	MPE/iX	240	$645,000
992/300	MPE/iX	330	$785,000
992/400	MPE/iX	400+	$925,000
890S/1 CPU	HP-UX	110	$335,000
890S/2 CPU	HP-UX	185	$440,000
890S/3 CPU	HP-UX	275	$545,000
890S/4 CPU	HP-UX	336	$650,000

* *Design goals*

Sizing Down The Competition

In a pre-announcement briefing at *HP Professional's* editorial offices, Richard Sevcik, GM of HP's Commercial Systems Division, detailed the aggressive new campaign to redefine the data center archetype with an open, user-focused approach offering significant reductions in cost of ownership, space and power requirements.

"We believe that the 992/400 is about equal to an IBM 3090-600J and about equal to an IBM ES/9000-740 [in processing power], but with one-tenth the power requirements, one-tenth the space requirements and one-fifth

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the cost of ownership," said Sevcik.

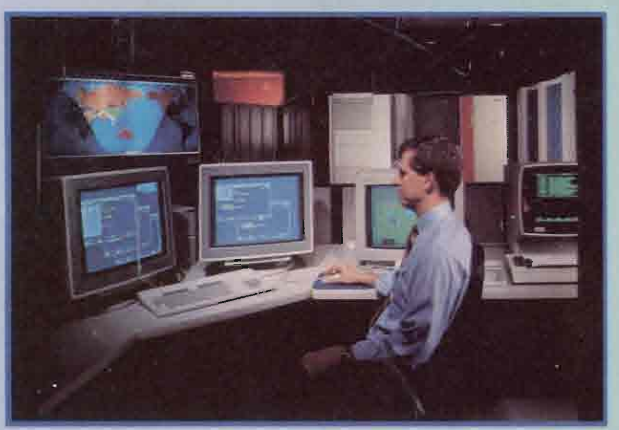
According to Sevcik, HP's 4-way symmetrical multiprocessing 992/400 running MPE/iX performs more than 400 transactions per second (TPS) — comparable to a water-cooled 3090-600J. An ES/9000-740 clocks in at about 450 TPS, requires 96.7 square feet of floor space and has a three-year cost of ownership (system, peripherals, software and support) of $15 million. A comparably configured HP Corporate Business System requires just 7.28 square feet of floor space and costs $2.7 million over the three years.

In terms of power requirements, Sevcik notes that the systems burn just 4,000 watts — roughly the equivalent of three blow dryers.

HP is also positioning its new systems to compete against IBM's popular AS/400 midrange line. "In terms of price/performance, we can usually beat the AS/400 by a factor of two," says Sevcik. "And we offer 50 to 60 percent lower cost of ownership versus the AS/400."

"Before this announcement, we believed we had the most scalable product family in the industry. Now we've taken another quantum step. We believe now, beyond a shadow of a doubt, that this is the most scalable product family. To cover the same range, IBM has five separate families," he notes.

Since their introduction last year, HP has sold over 500 of HP 3000/980 and HP 9000/870 systems (split almost equally between the two). In that time, over 100 IBM shops have bought the high-end HP systems to augment or replace their mainframes.



HP's new Corporate Business Systems offer substantial savings in space, power and cost of ownership over traditional mainframe systems.

In addition to the hardware, HP has aligned itself with a healthy assortment of software vendors and systems integrators to provide mainframe-class applications and migration services, and has initiated a comprehensive support program.

Mainframe-Class Partners

HP realizes that if it wants to play in the data center, it needs some established cohorts to provide software, migration services and peripherals. To this end, such vendors as CINCOM Systems, Dun & Bradstreet Software, Information Builders, Oracle, SAP, SAS and Software AG have been tapped to develop applications, tools and databases for the new servers.

Just last week, Andersen Consulting announced that its next-generation CASE environment, Foundation, will be available on HP-UX platforms. The product will enable the development of scalable, UNIX-based client-server applications.

On the peripherals side, HP's key data center partner is StorageTek, whose Series 42XX 3480-compatible half-inch cartridge tape drives will be available for the Corporate Business Systems this year.

New Support Program

To address the extensive support requirements of data centers, HP introduced a new support program. Called HP Premier Account Support, the program consists of existing HP services as well as new offerings.

The program features immediate, around-the-clock response to hardware, software and networking services and a dedicated account team that is familiar with the site's business and technical requirements. Each team includes a response-center engineer, a field engineer, a technical consultant and a sales representative. HP's predictive technology is employed to foresee hardware failures.

To simplify service and support, HP is offering its Premier Account Support as a fixed-price solution purchased with the Corporate Business System. The specific set of services is based on the processor model purchased, and ranges in price from $149,950 to $279,950

The HP 3000 versions of the Corporate Business Systems will be available in August. Prices include hardware, MPE/iX, and 192 MB of memory for the 990/100 and 992/100 and 256 MB for the 992/200, 992/300 and 992/400. The HP 9000 Corporate Business Systems will ship in October. Prices include hardware, HP-UX and 128 MB of memory. —*Grant Evans*

FOR HP

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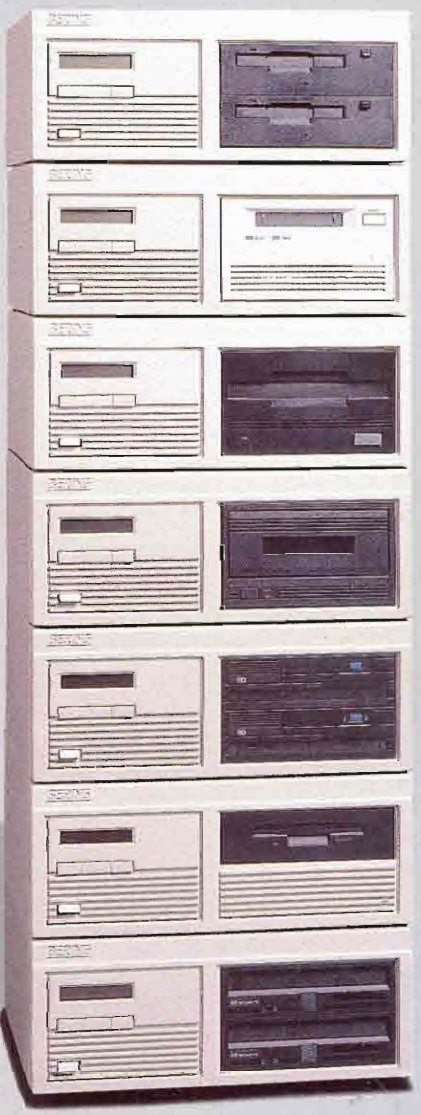

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For Your Information

■ HP's latest fiscal results continue to buck the industry trend. For the second quarter ended April 30, HP reported net earnings of $326 million, up 40 percent over the $233 million posted for the same period last year. Net revenue rose 12 percent to $4.2 billion compared to $3.7 for the same quarter in 1991. Orders were up 11 percent (up 16 percent in the U.S., 8 percent from outside). HP President and CEO John Young said that ongoing efforts to manage expenses enabled the company to " turn a reasonable revenue increase into outstanding profit growth."

■ Ross Systems (Redwood City, CA) has entered a joint development and marketing pact with HP to develop software for HP-UX and MPE/iX platforms. Ross will form a new subsidiary, Ross Systems HP, which will produce a line of financial, distribution and process manufacturing applications. HP, in turn, will make a substantial investment in technical assistance, equipment and funding for the conversion of Ross software and the establishment of a marketing and distribution organization. (415) 593-2500.

■ HP rolled out OpenView 3.0 — the first available network and system management solutions based on technology selected for the OSF's Distributed Management Environment (DME). *(For more on OpenView 3.0, see Gordon McLachlan's sidebar on pg. 28.)*

■ HP last month increased its workstation price/performance lead with new additions to its HP Apollo 9000 Series 700 family. The new color versions of the low-end Model 705 are priced from $8,990 (16-in., diskless) to $12,409 (19-in., 420 MB disk). In addition, HP reduced the price of the Model 710 19-in. color workstation by $1,500 to $12,490. Add-in memory prices were also cut by up to 50 percent.

■ Computer Solutions announced the addition of a new hotsite facility for its disaster recovery services. Located in Clinton, NJ., the facility is 5,000 square feet and offers a computer room, hardware service area, office space for subscribers and CSI staff and more. (201) 672-6000

■ Fibermux will integrate future generations of its LightWatch network management system — to be called LightWatch/Open — with HP's OpenView network management environment.

LightWatch/Open will enhance management of networks based on Fibermux Crossbow intelligent multi-LAN hubs by adding the enterprise-wide management capabilities of OpenView Network Node Manager. (818) 709-6000.

■ Hi-COMP GmbH announced the opening of a new office in Fort Collins, CO. The sales staff will serve accounts in North and South America. The new address is 419 Canyon Ave., Suite 215, Fort Collins, CO 80521-2670; (800) 323-8863.

■ HP announced U.S. list price reductions of up to 23 percent on six of its HP Vectra PCs including its family of network ready PCs. Prices start at $1,149 for the HP Vectra 386/16N PC.

■ MPI Technologies has formed a North American network of nine distributors to market the company's printer-compatible interfaces and protocols for the IBM host computer market. Emphasis will also be placed on the Blue Kit, a coax/twinax IPDS emulation package that provides HP LaserJet printer compatibility with IBM mainframe and midrange computers. (714) 840-8077.

■ PROCASE Corp. announced that its SMARTsystem software development and maintenance environment supports HP Apollo 9000 Series 700 workstations from HP. SMARTsystem lets software developers re-engineer large bodies of existing C source code to accomplish such projects as porting, maintenance, enhancement and software evolution for both host and embedded development projects. (408) 727-0714.

■ Pantechnic Inc. and Oracle Corp. announced an independent software vendor (ISV) agreement. Pantechnic will develop and market its DataOne product to provide an easy way to migrate HP TurboIMAGE applications and databases to ORACLE. (415) 506-6160.

■ Workstation Source now has a solution for engineers and scientists who need to run HP BASIC and the new HP BASIC plus on IBM Micro channel-based systems. Developed by SEJUS in the U.S. under an agreement with HP, it is available as either the Micro3000 Measurement Coprocessor, which is a user installed board set or as the Micro300 Controller Systems, which are fully configured Micro Channel systems with pre-installed Micro 3000, HP BASIC and DOS. (0628) 75252.

■ Eurodata, (Canada) a Hewlett-Packard Third Party Maintenance organization has acquired Datanix Technology Inc. a Toronto-based HP Third Party Maintenance Vendor. Eurodata offers HP and HP compatible third party maintenance, HP product sales, rentals and disaster recovery services to the HP installed base from offices in Ottawa, Toronto, Montreal, London, Kingston, Moncton, Calgary and Edmonton. (613) 745-0921.

■ Wesson Taylor Wells and Assoc. a systems integrator, has developed a relationship with Infosoft GmbH of Dortmond, Germany which will expand WTW's capabilities in the migration of applications to the UNIX operating systems. Infosoft will provide its CONVEYOR software migration product for use by WTW. (803) 699-5781.

■ Speedware Corp. released its application development technology product SPEEDWARE version 6.02. New options included a client-server product with a remote windows capability and an Allbase interface.

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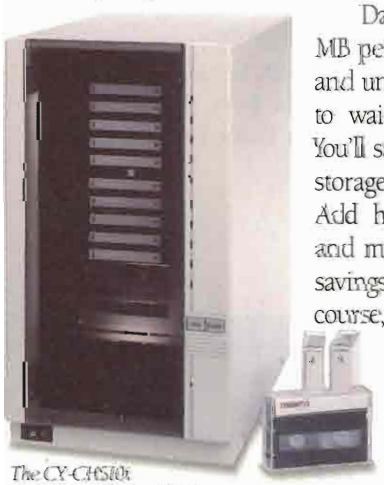

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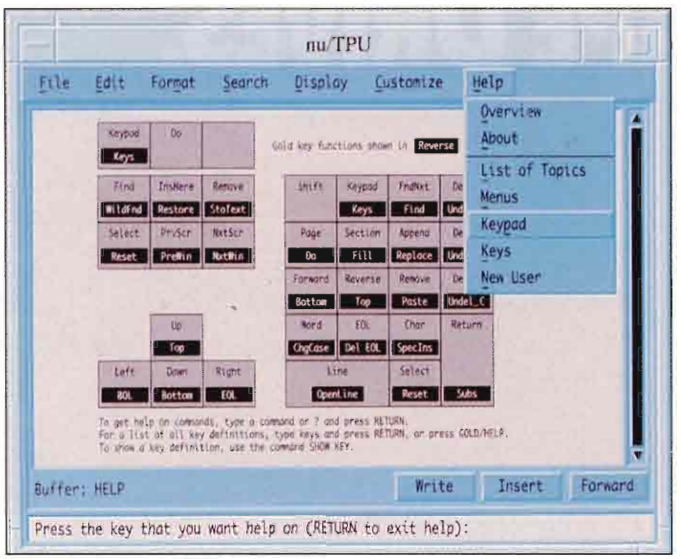

a/Soft Development's nu/TPU Helps You Get The Upper Hand On Your Editing Woes

Average users and programmers alike rely on good text editors to perform their jobs every day. However, the wonderful world of "open systems" often introduces confusion. In your "open" multiplatform environment, how many text editors do you have to know? If your answer is one, you're fortunate. Or, do you have to take the editor manual dexterity test each time you sit before a different vendor's machine?

Enter nu/TPU from a/Soft Development Inc. nu/TPU (new Text Processing Utility) runs on a variety of platforms including those based on UNIX, MS-DOS, Windows 3.0, OS/2, XWindow, Sunview and OpenLook. It is designed to provide the same interface across all these platforms.

The secret behind nu/TPU is that it is not your basic text editor. Rather, it is a totally configurable Text Processing Utility. a/Soft provides the basic building materials, (which may be enough for you already) and you do the rest.

nu/TPU strives to achieve three main goals to make your editing easier.

First, there's ease of use. More than 180 simple, English-like commands are provided. Those who've ever struggled with a vi quick reference card will appreciate nu/TPU's simple command syntax. On windowing terminals and workstations, pull-down and pop-up menus make editing operations easy.

Next is versatility. Rather than lock you into a set editing interface, nu/TPU provides four built-in editing flavors and the ability to roll your own. The four built-in interfaces are Easy Versatile Editor (EVE), EDT (DEC's screen editor), WPS (another popular DEC product) and vi (you know what this is). You can pick your favorite environment and still take advantage of nu/TPU's additional capabilities.

For those who want more, nu/TPU provides enough flexibility to meet a variety of needs. Just about every aspect of nu/TPU is configurable, including the supplied editing functions and keyboard layouts. New editing functions can be created as you go and saved to a personal configuration file for later recall. Editing commands can be bound to any single key, thus eliminating long keystroke sequences needed to invoke editing functions.

The last goal is editing interoperability. nu/TPU operates consistently across all platforms. That means that you don't have to remember, relearn or reinvent all the editing features you created on platform A if you happen to be using platform B. Simply moving the configuration file from one nu/TPU platform to another is all you'll need to get up and running, no matter where you happen to be editing. nu/TPU runs on over 50 UNIX-, DOS- and OS/2-based systems.

nu/TPU Version 3.0 fully supports X Windows (including the Motif, OpenLook and Open Desktop GUIs) and Microsoft Windows 3.0 based systems. All the advantages of using a windowing system, such as cut and paste, are realized in nu/TPU. Even if you're not fortunate enough to have access to a windowing terminal or workstation, nu/TPU provides a rich set of functions and operations to help you get your editing finished quickly.

UNIX prices for nu/TPU start at $499. — *David B. Miller, Senior Technical Editor*

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Once the IOLAN is attached to a network, you can logon to the host, which can be a HP 9000 running HP-UX, through telnet or rlogin sessions.

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A UNIX software daemon allows for configuration of output devices such as printers and modems. The daemon runs transparently and allows the remote IOLAN ports to be seen as local UNIX ports. Peripherals also can be connected to a specific host for a transparent, direct connection.

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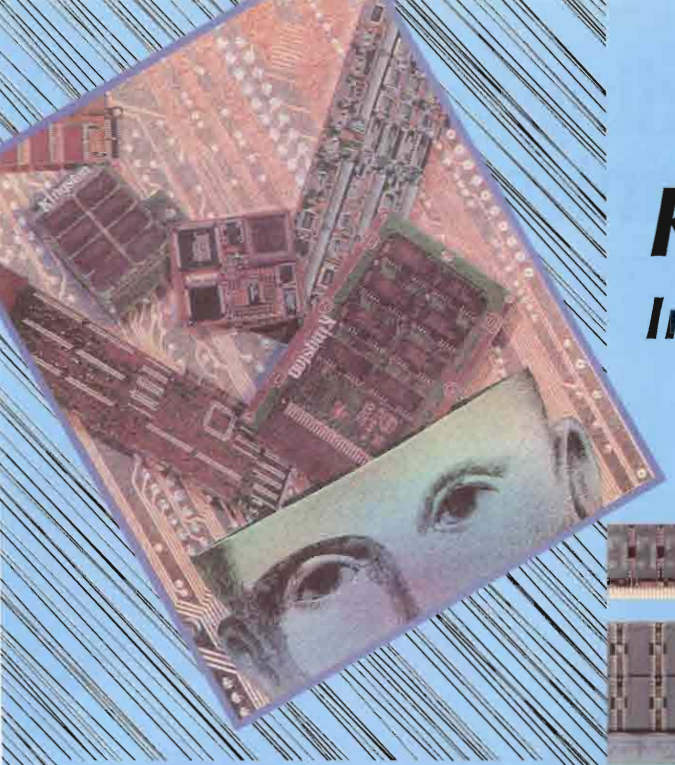

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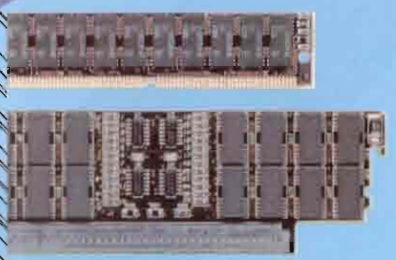

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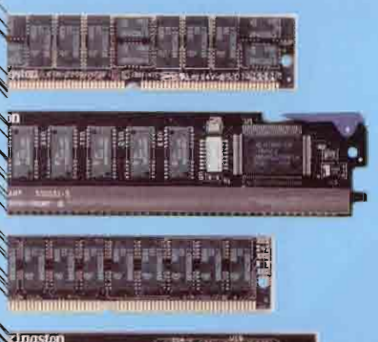

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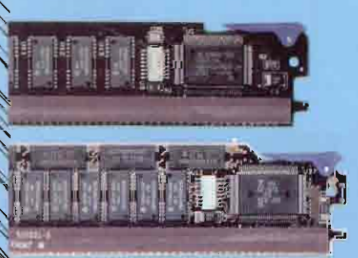

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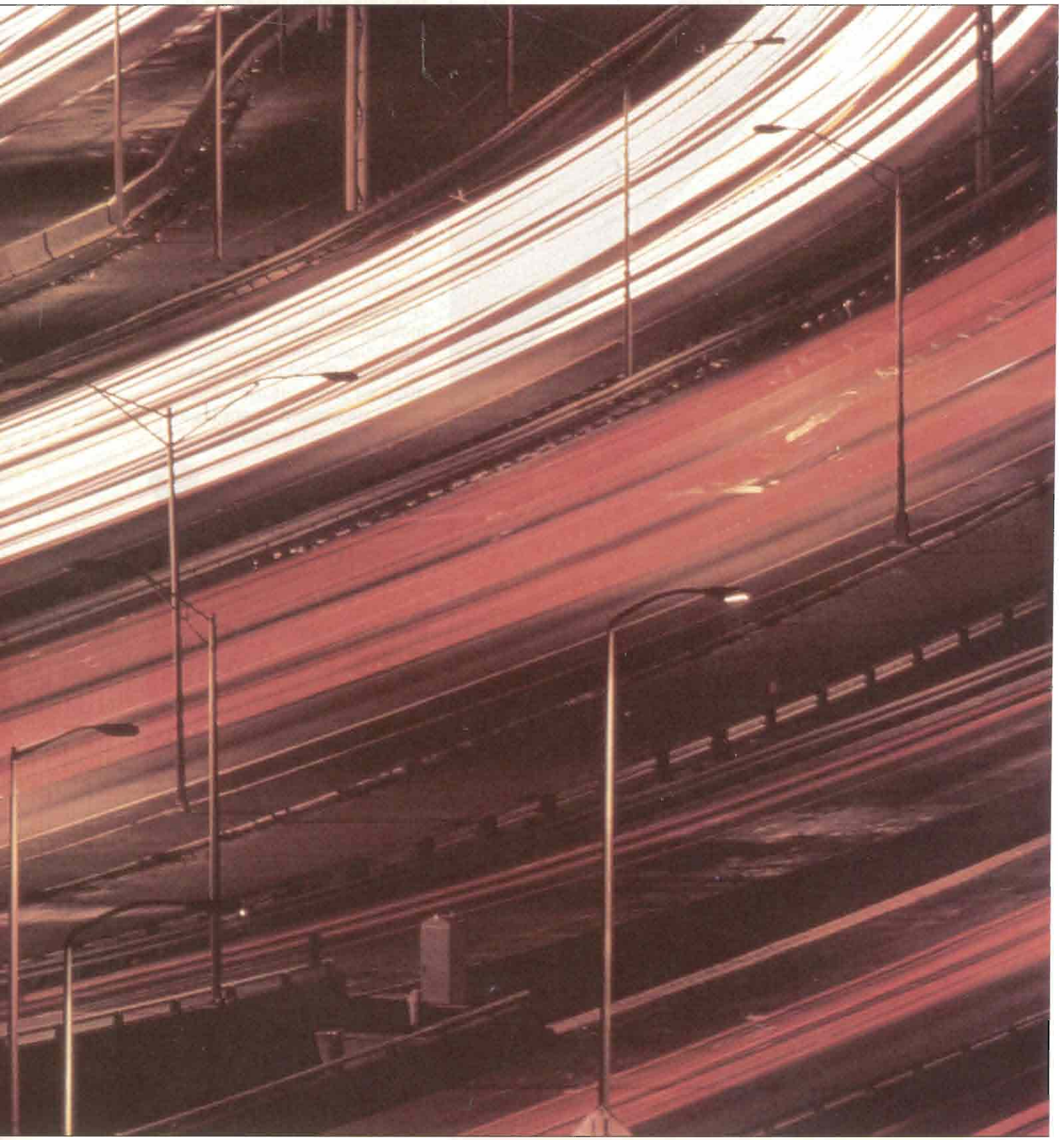


i n g

Simple

In Four Short Years, SNMP's Extensibility And Versatility Have Allowed It To Eclipse Proprietary Network Management Schemes And Slow-To-Emerge Standards

When you think about it, a Simple Network Management Protocol (SNMP) sounds like an oxymoron. After all, what's so simple about managing a network?

In the first place, there are too many different devices to be managed. Routers, bridges, gateways, servers and workstations all have to be handled, but the differences between these devices seem to conspire against simplicity.

The scope of network management has grown to elephantine proportions. A capable network management system must provide configuration information, performance data and tools for fault isolation, as well as help with change management and network planning and design. Again, that's a tall order.

With the growing trend toward integrating network management with traditional systems management, the job becomes more complicated. On top of all this, we still must wrestle with multivendor configurations and support for multiple protocols. Simple, you say? Not likely.

BY GORDON MCLACHLAN

Nonetheless, the Internet Engineering Task Force (IETF) took a shot at the problem, and came up with a "simple" but extensible network management architecture that has taken the industry by storm. SNMP, after four short years, is now synonymous with multivendor TCP/IP network management. With widespread industry and user acceptance, SNMP has eclipsed proprietary management schemes, and has completely upstaged the slow-to-emerge network management standards of the International Standards Organization (ISO).

To implement SNMP, you need three things: a network; something to do the managing; and something to manage.

The network is the easy part. If you have one, great. If you don't, it's simply not your problem. SNMP is designed to manage TCP/IP networks. If you have one of those, you can manage it with SNMP. If not, you can't.

The second requirement is a network management station (NMS) that implements the SNMP protocol. The protocol itself is quite simple, considering it only can do five things. It would be tough to come up with a way to make the protocol any simpler. The NMS can — and probably will — be loaded with chrome to give you pretty pictures of your network, fancy reports and a nice GUI, but as far as SNMP is concerned, it simply doesn't matter.

Finally, we need something to manage. In SNMP, such things are called managed objects. An object is deemed manageable if it has implemented SNMP agent software that can respond appropriately to being poked and prodded by the NMS, and provides some sort of "instrumentation" that's used to gather information about the object.

SNMP is built on a request/response — or fetch/store — paradigm. Each SNMP agent maintains a database that describes the managed object. This database is known as the manage-

[HP OpenView 3.0]

HP heralds its newly unveiled OpenView 3.0 products as the first available management solutions based on the Open Software Foundation's Distributed Management Environment (OSF DME). It didn't hurt that OpenView was one of the key technologies adopted by OSF for its DME spec, but HP has still earned some bragging rights.

Duncan Campbell, OpenView marketing manager at HP's Fort Collins, CO Networks Division, wasn't bashful about exercising those rights. According to Campbell, "This is something the industry has been waiting for. This is what the standards bodies want. This is what users have been dying for. There's a lot of excitement behind this announcement." He may be right.

OpenView, which HP positions as a management application development platform seems to have its fans. Along with OSF, IBM and Groupe Bull have licensed the OpenView platform for inclusion in their own proprietary products. In addition, a battery of third parties have provided more than 100 OpenView-based management applications, doubling the number of such applications in the last five months.

Key components of the new release are the OpenView SNMP Platform which provides an infrastructure for developing TCP/IP network management applications; the OpenView Distributed Management, which extends the SNMP Platform into the brave new worlds of OSF DME and ISO/OSI network management; and OpenView Network Node Manager 3.0, an end-user management application based on OpenView.

The OpenView SNMP Platform provides developers with application programming interfaces for the OpenView Windows graphical user interface and DME-compliant management operations.

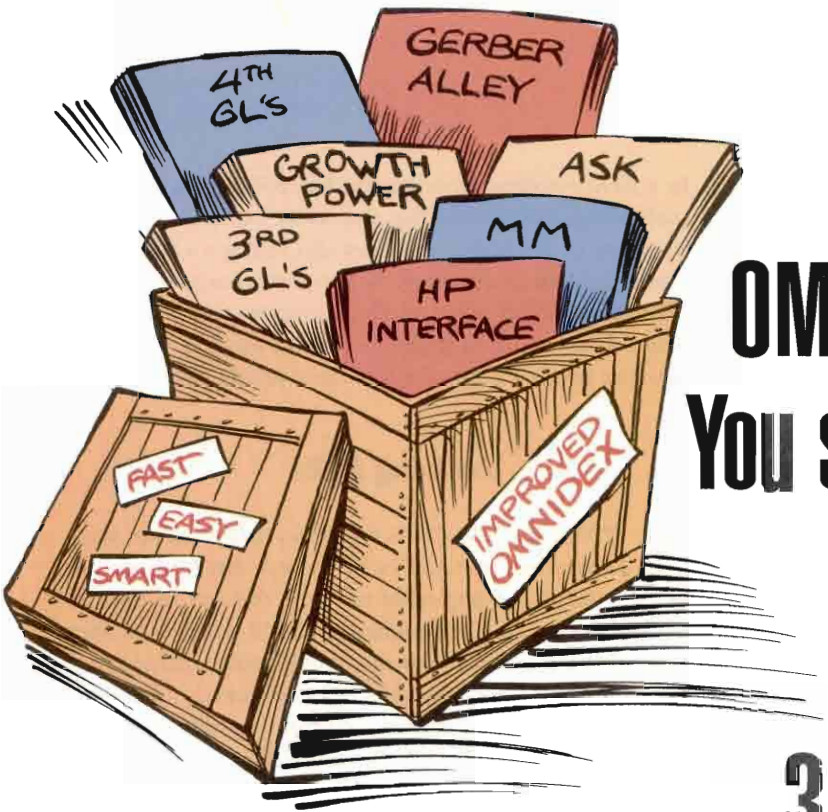
The Distributed Management Platform provides even more infrastructure, adding OSI support, proxy management and an integral Structured Query Language (SQL) option based on Ask's Ingres relational database software.

The Distributed Management Platform adds the Consolidated Management APIs (CM-API) used in DME and the X/Open

Management Protocol (XMP) to HP's stable of APIs, providing programmatic access to ISO/OSI Common Management Information Protocol (CMIP) and CMIP over TCP/IP (CMOT) as well as SNMP. CMOT and SNMP support will be available when the platform ships in July, and HP promises to deliver the CMIP components later this year.

Network Node Manager 3.0 is an end-user management application, providing a graphical user interface, automated network discovery and mapping, and user controllable network data collection. Network Node Manager also provides an application builder to load vendor-specific Management Information Base (MIB) extensions into OpenView, and to manage them without programming using a built- in browser menu.

With its commitment to standards and open systems, and increasingly widespread industry and user acceptance, HP is assuming a preeminent position in the network and systems management market. With some third parties even abandoning their SunNet Manager platforms for OpenView, we think this is the one to watch.
— *Gordon McLachlan*



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ment information base (MIB), and the network management station runs the network by reading and changing the values of objects contained by the MIB.

Using this paradigm, SNMP agents are generally passive, waiting for a request from an NMS that they can respond to. The NMS monitors network operations by reading the values of selected MIB objects. The NMS can actively manage the network by setting specific MIB object values to trigger the agent software.

The simplicity of SNMP is evidenced in its limited repertoire of protocol actions:

- Get-Request — get the value of a specific MIB object.
- Get-Next-Request — get the value of the next object in the MIB. Used to walk through tables of objects.
- Set-Request — set the value of an object in the MIB.
- Get-Response — agent response to a Get-, Get-Next-, or Set-Request; indicates success or failure of the operation.
- Traps — unsolicited messages sent by an agent to an NMS in response to a network event.

> THE DESIGNERS OF SNMP REALIZED THEY COULDN'T DEVELOP ONE MIB THAT WOULD SATISFY MANAGEMENT REQUIREMENTS FOR EVERY POSSIBLE NETWORK DEVICE.

Note that agents only initiate trap operations. Traps are used to notify the NMS of important network events like a link going down or being restarted, a router biting the dust, or a computer being booted. For the other operations, the NMS is the brains of the outfit.

In order to provide faster response time and more robust operation, SNMP is designed to work with the connectionless User Datagram Protocol (UDP), instead of the connection-oriented Transaction Control Protocol (TCP).

A connection-oriented protocol like TCP establishes a virtual circuit — or session — between end nodes on a network. Once a session is established between two nodes, TCP can guarantee that messages between them will be delivered, and that packet sequences will be delivered in the proper order.

The connectionless UDP protocol is built for speed, and is designed to pass single messages quickly between network end nodes. UDP does not provide any error-checking or message sequencing logic, relying instead on the inherent reliability of the physical network layer. This minimizes the overhead associated with establishing and maintaining sessions between nodes.

In a device-polling environment like SNMP, the overhead in establishing and maintaining sessions is excessive. The discrete nature of the SNMP messages also makes a connection-oriented protocol unnecessary. A connection-oriented link is also hard to establish when you're having trouble with a line or network device. You might be able to sneak in a message or two, but keeping a virtual circuit up is another story.

Defining MIBs

WITH SO FEW OPERATIONS available in the management protocol itself, the way that MIBs are defined and implemented is the real key to SNMP's power and flexibility. The designers of SNMP realized that they couldn't develop a single MIB that would satisfy management requirements for every possible network device. Routers, bridges and servers, for instance, perform very different functions. Accordingly, they present very different management problems requiring very different solutions.

Different solutions are provided by using different MIBs. Even though there is an Internet standard MIB, known as MIB-II, it's pretty basic, and is focused on gathering real-time statistics on the network protocol stack itself. Management of other information is left to other MIBs.

To allow new MIBs to be developed and implemented without causing problems, SNMP MIBs must adhere to a standard for naming and categorizing management objects known as the Structure of Management Information (SMI). SMI describes a hierarchical tree-structure, with each branch of the tree assigned to a single responsible organization and uniquely identified by a number that gives the position of the branch in the tree. MIB objects are the "leaves" of the tree, and are clustered on an appropriate branch.

All SNMP MIBs fit into portions of the tree controlled by the IETF. Subtrees are assigned for IETF standard MIBs, IETF experimental MIBs and private, or enterprise extension MIBs.

The MIB definitions themselves are written using a subset of the ASN.1 (Abstract Syntax Notation) meta-language used to describe ISO/OSI standards.

The use of SMI and ASN.1 is useful because it allows SNMP MIBs to be defined right alongside the MIBs to be used with the ISO Common Management Information Protocol (CMIP) and CMIP over TCP/IP (CMOT). Such peaceful coexistence in the MIB "name space" helps assure compatibility with the ISO protocols and helps provide a migration path from SNMP to ISO network management, when (and if) that should ever be necessary.

Use of ASN.1 as a standard MIB definition language also has let management software vendors produce MIB compilers that can easily import new MIB definitions into their existing products. These allow vendors or users to create their own MIBs, and have them work right along with the standard varieties en-

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dorsed by the IETF. Once a MIB has been proven in action, it can be moved over to the Internet branch of the MIB tree and implemented as a standard.

The importance of this last bit shouldn't be overlooked. In contrast to ISO's philosophy of over-engineering standards, and endlessly dragging out their implementations while every last detail is worked out, the IETF puts more emphasis on implementing things that work. The IETF won't even talk about making a new MIB standard until it has had its trial by fire.

Enter The RMON MIB

THE FLEXIBILITY OF SNMP isn't just theoretical. Even though SNMP started life as a tool for router management, MIBs have been developed to manage network servers, gather historical network performance data and to handle requirements of specific network protocols and interfaces like FDDI and Token Ring. More infamous examples of SNMP's extensibility are the SNMP-managed toasters, robot doggies and stereos that have cropped up at trade shows over the last couple of years.

One of the more useful MIBs — now an IETF proposed standard — is the Remote Monitoring (RMON) MIB, which is used to gather historical data from network devices for fault diagnosis, performance tuning and network planning.

The standard MIB-II is designed to provide real-time protocol management for devices that use EGP, IP, ICMP, TCP and SNMP protocols. To accumulate historical performance data, the network management station has to constantly poll every network device and store the data itself. In many cases, though, historical data is better gathered at the network device itself, and only retrieved occasionally by the network management station. This is precisely the purpose of the RMON MIB.

One clear advantage of RMON is the reduction in network overhead caused by SNMP polling. Another is the reduction in NMS processing overhead. RMON provides: segment statistics; packet-error counters; historical trend graphing; traffic matrix showing traffic and errors between nodes; alarms with user definable thresholds and sampling intervals; event transmission using standard SNMP trap packets; filtering; and packet capture for diagnosis of network failures

RMON also can be used to provide "proxy" management, either intercepting SNMP requests for other agents, or acting as an agent for network devices that are not SNMP-capable. In the case where multiple management stations are trying to manage a single agent, a proxy agent can shield the real agents from redundant requests, and can respond for them. Proxies also can send a single agent's trap to multiple management stations.

Proxies can reduce the amount of SNMP traffic hitting the network, enhance SNMP security and be used to manage proprietary network devices or devices like MAC-level bridges, wiring hubs or modems that work below the network layer of the ISO/OSI model.

Security Questions

ONE SERIOUS FLAW IN the design of SNMP is its weak security. Right now, the only security available is the use of "community" names, which is to say there isn't much security. A community is a group of SNMP agents managed by an NMS, and all the NMS has to do to get access to an agent is provide the proper name.

Unfortunately, it doesn't take too much effort to come up with a valid community name, and SNMP provides no user authentication or encryption techniques to foil would-be backdoor network managers. Although accessing read-only MIB variables may not present much of a threat, changing writable values could wreak havoc on network operations.

As a crude defense, some vendors disable critical Set-Request operations to assure network integrity. Proxy agents can be used to shield other more vulnerable agents from changes. The IETF is currently looking into implementing real security through some combination of authentication and encryption. This will undoubtedly add overhead and hit SNMP performance, but security is a critical concern, and worth the hit.

HP OpenView

HP'S OPENVIEW NETWORK management platform provides a good example of how SNMP can be used. One of the first backers of the RMON MIB specification, HP has incorporated RMON into its recently released LanProbe II and supports RMON under OpenView.

Actually, OpenView is designed to incorporate any MIB you can think of. With its network management application builder, OpenView can incorporate any enterprise-specific MIB by "compiling" its ASN.1 definition.

HP has expanded on this capability to provide its Extensible SNMP Agent MIB and software. Using the OpenView Extensible SNMP Agent, administrators can use OpenView to monitor and manage UNIX system processes as well as the network. HP's MIB contains several useful objects like the number of users and jobs, disk utilization and memory usage. Users can even add their own objects to the HP MIB and associate them with UNIX commands or shell scripts.

SNMP has growing to do, but it's proven to be a viable, useful and interesting standard. With its uncanny ability to be extended into unforeseen applications, and even perverted into some pretty twisted applications, SNMP is simply marvelous.

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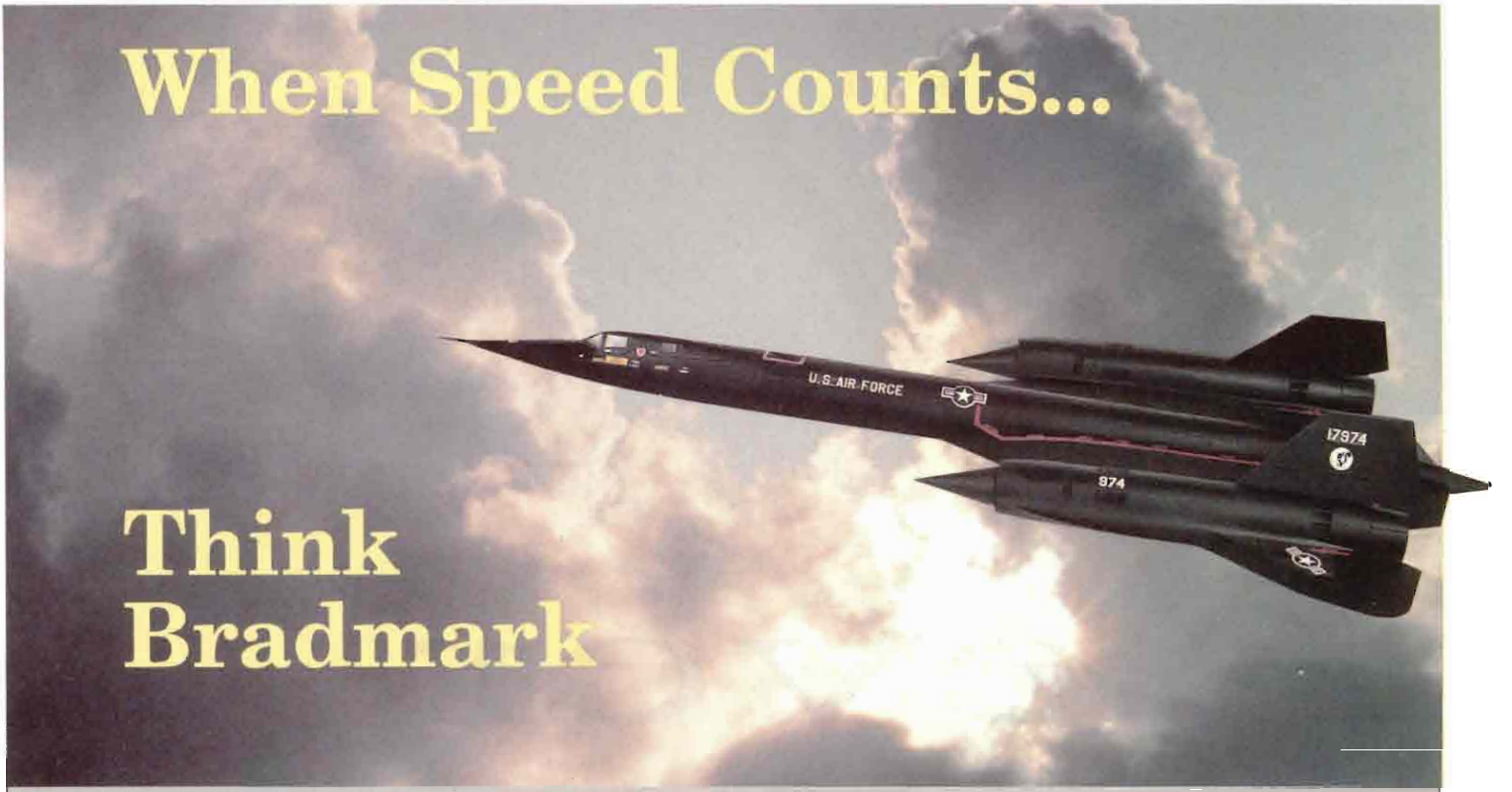

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Never SAY Never

A Carefully Designed Disaster Recovery Plan May Be Costly, But It Also May Save Your Business

By Tim Cahoon

September 21, 1989. A particularly devastating hurricane named Hugo is churning its way toward South Carolina. Coastal towns take the normal precautions. Inland cities are cautious, but have the knowledge that hurricanes lose most of their strength when they hit the coastline. This year, however, things will be much different.

October 17, 1989. A World Series game was to be played at San Francisco's Candlestick Park. The pregame show on television wasn't exactly what viewers expected. Instead of baseball, we saw damaged houses, crushed cars and collapsed bridges. A massive earthquake had hobbled the Bay Area.

Within weeks of each other, major disasters hit both the east and west coasts of the United States. Massive disruption of business in a large geographic area occurred. The loss of facilities; phone, electricity, etc., put tremendous strain on the outlying grids. In turn, this causes overloading or possibly other failures.

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Like a wave, the ripples of a disaster spread out to cover a larger and larger area effecting people living many states away.

These two events forced businesses back on track to create plans to handle such disasters. Not only are more businesses planning for the traditional disaster recovery, but also for what is called disaster avoidance.

The Basic Plan

DISASTER RECOVERY PLANS were once fairly simple to devise and follow. All you had to do was keep a copy of your data in an offsite storage location and if your computer was destroyed, just set up shop somewhere nearby. All you needed to worry about was getting the backup tapes, a new computer and some terminals. Remote locations, PCs and LANs weren't part of the picture.

Our computing environment has evolved radically in the last few years. Individuals, workgroups and departments have computing resources which have augmented or replaced the older centralized computer systems. While these centralized systems may still exist, their importance as the prime storage and processor of data has declined significantly. In the case of disaster it is no longer enough to give a user a dumb terminal to connect to the centralized system. A workstation with access to the departmental LAN and other resources, including the centralized system, is far more likely to be the minimum requirement when restoring a critical user's functionality.

Things get more complicated when you start adding in large facilities with hundreds of people, many LANs and remote locations via some type of WAN (wide area network). It becomes even more complicated when basic services, such as telephones, become unavailable or unreliable.

Before you can do any disaster planning you also must assign a *cost* to your data. This cost figure is used in two ways. First, to help identify what data is or isn't really important, and second as a gauge to identify the dollar figure appropriate for disaster recovery planning costs.

Once you have identified the cost of your data and determined a budget to work with, you can proceed with developing a plan.

With any plan, you must have policies and procedures to insure that all corporate data deemed *important* is protected. This includes data on centralized systems, LAN servers and individual workstations. Rehearsing your plan helps insure that those policies and procedures are adequate. Wherever your data is stored

[Disaster Prevention Instead Of Disaster Recovery]

An ounce of prevention costs only $8 per GB. If data replacement on a 40-MB hard disk could cost as much as $100,000, think about how much it would cost to recover an entire system after a disaster. Tape has been and always will be the least expensive way to store a second copy of data. For this reason, it has been the mainstay of the backup industry. Disaster recovery simply takes tape-based backup one step further off-site. Products like digital tape drives store amazing amounts of data on cartridges that are so small they can be mailed in a number-10 envelope. Cost is negligible when compared to what it would cost to recover data after a disaster without them. Digital tape drives are convenient because they do their work when no one's around.

On October 17, 1989 during the big San Francisco earthquake, a University of California Lick Observatory employee fortunately carried, in a backpack, the last week of full dumps on half-a-dozen 8mm cartridges. The employee was lucky enough to think to grab the tapes on the way out and was able to restore all data.

None of us like to think that we may lose our data to a disaster. But, it does happen. Statistics have shown that although 85 percent of our data is lost because of human error, disasters such as earthquakes, fire, power outages, hurricanes, lightning, inclement weather, building collapses and viruses account for a large percentage of the balance. Very little is actually attributed to equipment failure (Contingency Planning Research).

The impact may be irreversible. Statistics are shocking. According to research done by the University of Minnesota, 75-percent of all businesses are unable to function if their computer data is not recovered within 14 days. Of those, 43-percent may never reopen and the 29-percent that do will close within two years (Business Recovery Consultants).

Some data is irreplaceable. The Colorado Center for Astrodynamics Research at the University of Colorado is collecting a second copy of satellite data on 8mm media as a backup for the National Snow and Ice Data Center library. One cartridge holds an entire month of data. Eight millimeter's large capacity, small size and resultant low cost got it the job. If the data were lost, without this protection-from-disaster copy, it could not be replaced.

In addition to local backup, remote backup or electronic vaulting is the newest trend in disaster recovery planning. It provides off-site storage of mission critical data and is an evolutionary step toward disaster prevention rather than disaster recovery. Here, too, tape is proving to be the most cost-effective technology by combining it with robotics access at a remote location.

For example, Exabyte is shipping a library system that contains four independent 8mm tape drives and up to 116 cartridges for an uncompressed capacity of up to 580 GB. Four different computers can share the same data. If system A were lost to a disaster, systems B, C or D are able to immediately pick up where A left off. One could call this automated disaster prevention without human intervention.

— John Andrews, product manager, Exabyte Corp, Boulder, CO.

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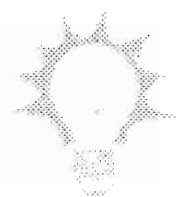

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offsite make sure you know how to get to the storage location. There are two main schools of planning. The first is disaster avoidance, and the second is the traditional disaster recovery planning.

Keep Away

DISASTER AVOIDANCE IS a methodology by which you plan your network so problems are localized and don't effect the majority of users. An example would be a company with two offices. Each has its own computer system. With disaster avoidance, you could use each of these systems to backup or "shadow" the work done on the other system. This way, if one computer went down, users could automatically and transparently begin to use the other remote system. Disaster Avoidance is well used when the sites are located in different geographic locations.

Disaster Avoidance is a natural extension of the Extended Data Center concept used by many companies. Having diverse computing sites working together, under common management, makes the implementation of Disaster Avoidance even easier and in fact enhances each other quite well. A common example is the HP Response Center system. How many times have you called the Response Center late at night and ended up talking to an engineer halfway across the world?

With the changes in communication services and prices,

[Successful Assessment]

Disasters needn't be spectacular; small ones hit all the time. Any event, even something as common as a virus, which puts your network out of use, is a full-fledged disaster. The calamity may not even be directly related to your computer systems, telecommunications equipment, or even your business. An external event (like a power outage or physical barrier) may occur which simply prevents access to your network resources.

As everyday reliance on LANs and WANs grows, companies are becoming increasingly dependent on their continued, uninterrupted transmission processing activities. Managers responsible for network operations must protect the criticality of the network and its associated data processing operations, hardware/software and data. The network is a crucial asset and must be recognized and protected, as such.

Ask yourself, "How long can I afford to be without my network services without causing considerable damage to my company?" Once you've determined how pivotal it is to maintain your network operations without interruption, you'll know (1) if a disaster recovery plan is needed, and (2) if so, what type it should be.

The key to a successful disaster recovery plan is to have it in place, and checked out *before* a disaster strikes. This eliminates the confusion, general chaos, and even panic that usually follows an unexpected upheaval. A range of plans are available from a variety of sources to protect HP users from unplanned network disruptions.

Hewlett-Packard itself, in conjunction with its disaster recovery agent Weyerhaeuser Information Systems, operates 3000 and 9000 disaster recovery hotsites on both coasts. Through sophisticated communications capabilities, a customer can operate "any system from anywhere" (it makes no difference if the user is physically on the west or east coast or anywhere in between). Disaster recovery plan rehearsals also can be conducted remotely, without the users leaving their home cities.

Testing of your disaster recovery plan is essential to its ultimate successful implementation, should it become necessary. HP provides six days of rehearsals per year as part of your recovery planning contract. Experience shows that most users test their plans about twice a year. HP says they expect a customer to test their recovery system at least once during the year if they want to remain an active participant.

A typical strategy for a successful disaster recovery (DR) plan may look something like this:

- The DR plan addresses the entire business environment and not just the network or dp operations. Computer operations are usually molded into the business's mainstream and aren't a separate entity to "survive" on their own.
- Ample resources (personnel, funding, etc.) and top management commitment are essential to a successful DR plan. Ensure corporatewide involvement.
- Alternative lines of communication and an emergency chain of command, with contingencies, should be spelled out on a companywide basis. Individual personnel and their responsibilities and authority should be clearly defined.
- Operations to be protected via the DR plan should be defined and categorized. Vital operations must be protected immediately. The remaining ones can be segmented into those which can be "lost" for only a short time, those which can be "down" for an extended time, and those which can be "done without" until normal operations are restored.
- After the DR plan is in place, it *must* be tested and retested on a regular basis. Remember that your business isn't static, neither should be your disaster recovery plan. It has to be continually updated and revised to reflect changes in personnel, management assignments, computer and network operations and equipment and business activities.

The disaster recovery process includes four steps, which are: Plan (plan to protect your critical processing requirements), Do (create an action plan, prepare it and rehearse it), Checkout (post rehearsal review and retest) and Adjust (continually improve the action plan). If your network goes down in a mission critical environment, how long it takes to return the system to operational status could decide the survival of your company. — *Ron Levine, Field Service Editor*

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creating a network to provide disaster avoidance is more affordable than ever.

Common Practice

IN THE TRADITIONAL DISASTER recovery field, there are many companies that can assist you. COMDISCO Disaster Recovery Services (CDRS) is probably the largest provider of such services in the country. They have provided consulting, recovery sites and systems to Fortune 500 companies. To meet the changes in computing, they recently have added CDRS WORKAREA Recovery Centers in their facilities. These centers allow you to setup the servers and LANs needed for critical non-traditional computing.

In the HP community, Hewlett-Packard has had HP 3000 recovery centers along with planning and consulting for some time. Now with the advent of commercial UNIX systems, HP has introduced disaster recovery services for UNIX-based computer systems. These services include planning, consulting and the use of an HP recovery site during a disaster.

UP TIME Disaster Recovery Inc. is a long-time specialist in HP disaster recovery. They introduced to our HP industry the mobile computer center. They have HP 3000 computer systems tucked inside large trailers that come to your location in case of a disaster.

Other Considerations

NO MATTER WHAT TYPE of plan you're putting together, there are 100 different things to consider. Power plays an important role of any scenario. First, you want to make sure that a short power outage doesn't cause a loss of business activity. Second, you want power that is clean, without spikes or drops that could damage your equipment. Third, you don't want the loss of power at a key remote network node to shut down an entire network.

Ten years ago, the trend was to buy power conditioners to solve your power problems. Today, the trend is to purchase UPS (Uninterruptable Power Supplies) systems. UPS is an important tool for network uptime if there are critical points to your network. In my case all the remote lease lines terminate at one central point. If remote site A wants to communicate with remote site B everything gets routed through that central

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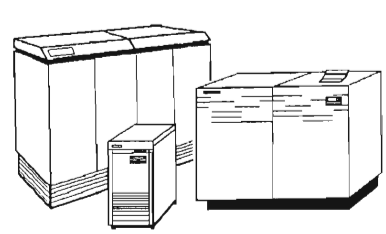

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CIRCLE 167 ON READER CARD

point. Having an appropriately sized UPS unit to power the modems and switching gear would keep the network up even if the rest of the central site has lost power. Having a UPS unit can be important to keep crucial equipment running that may be remotely located.

Sizing a UPS unit for your needs also is important. There are many factors to take into account. Because units are available from small ones, which can handle one PC, to larger units, which can power office buildings, you may want to deal directly with the manufacturer or authorized reseller.

The purpose of a UPS unit is not only to provide clean power but to provide a specific amount of power for a specific period of time when the local power is not available. This backup power is provided by batteries that are kept constantly charged. While most of the components in a UPS system have been shrinking in size, the batteries are subject to a different set of physical laws. Battery size is in direct proportion to the amount of power they can store. The amount of power required and the length of time you need to provide that power determine the size of the batteries in the unit.

For most, having 10 to 30 minutes of backup power is adequate. This gets us over those annoying temporary power losses that can occur because of accidents or storms. More important it can give us time to accomplish an orderly shutdown of networks, systems and servers. This could eliminate the need for a lengthy data recovery process that a power outage brings.

One last feature of the new UPS generation is the ability to interface with MS-DOS, UNIX/XENIX, and Novell systems. This interface can allow the UPS to not only perform an orderly shutdown, but also bring up systems depending on power availability. They also have monitoring processes that you can access via a serial port to determine current power status.

Know Your Network

WHETHER YOU ARE TRACKING down a problem or creating a disaster plan, you need to know what makes up your network. Applications like HP OpenView are great for monitoring your logical network, but when something breaks, do you know exactly where it is? Do you know what pairs in the telephone cable and punchdown blocks are used to connect devices throughout your building? Understanding the wiring in your building is bad enough, but how well to you remember the configurations in your remote sites?

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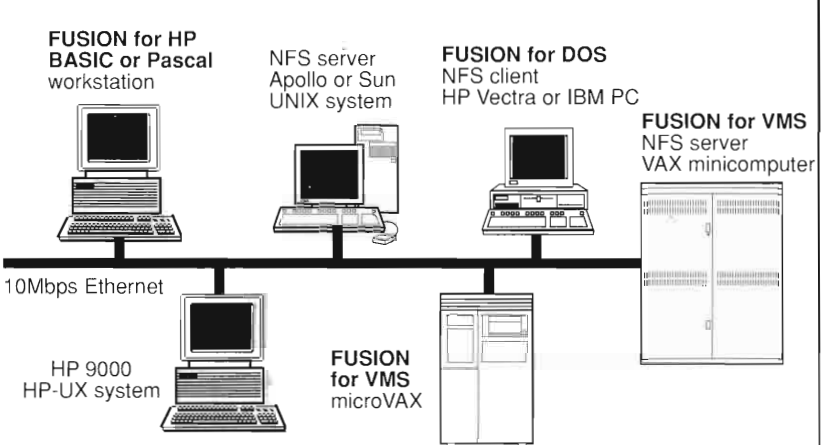

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(201) 672-6000
CIRCLE 357 ON READER CARD

ISICAD Inc.
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Anaheim, CA 92803
(714) 533-8910
CIRCLE 354 DN READER CARD

Peripherals
1363 Logan Ave.
Costa Mesa, CA 92626
(800 468-6888
CIRCLE 358 ON READER CARD

Provident Recovery Systems
2000 Regency Pkwy., Ste. 255
Cary, NC 27511-8507
(919) 481-0011
CIRCLE 359 ON READER CARD

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CIRCLE 360 ON READER CARD

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No matter where you set up shop during a disaster, the ability to communicate with the world is of primary concern. Be it voice, fax, video or data you must be able to conduct business in a timely fashion. This is the realm of the phone companies, both local and long distance. They have product offerings that allow your lines to be rerouted on demand to a new location.

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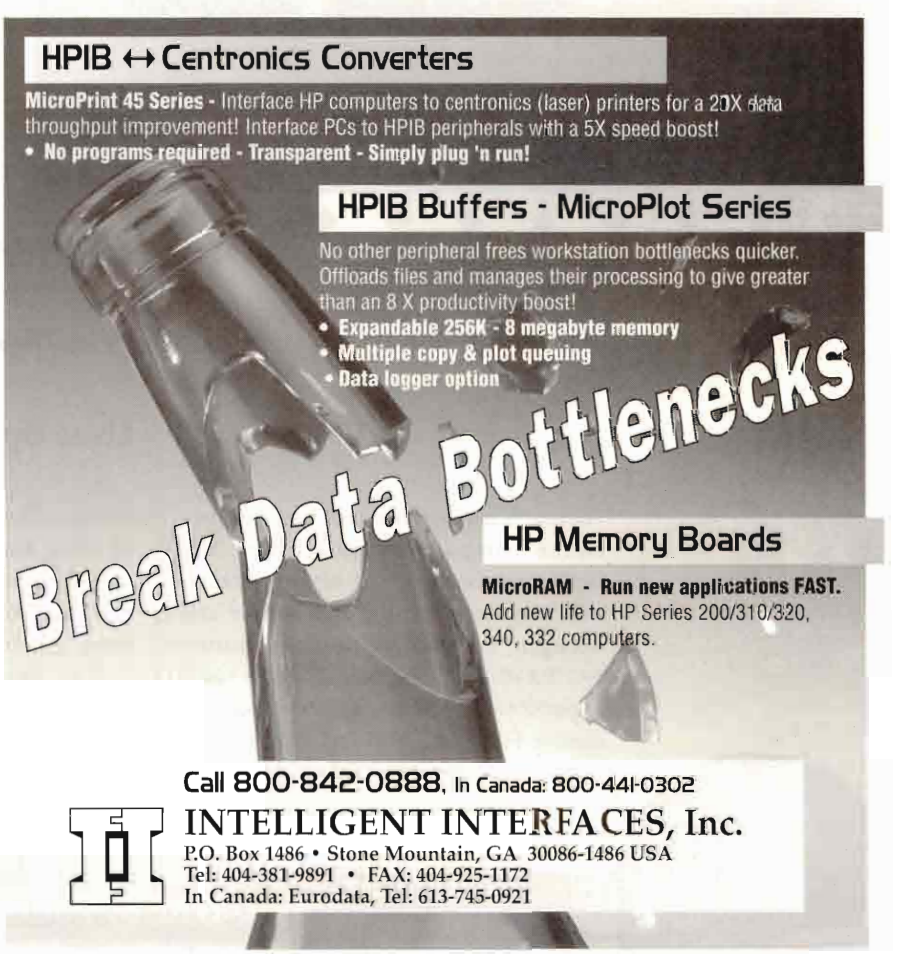


CIRCLE 126 ON READER CARD

Low Cost + High Power = Satisfaction

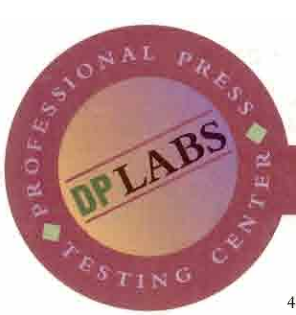
The Workstation Market's Price/Performance Leader Lives Up To Its Reputation

Although no love has ever been lost between computer manufacturers, the battle lines between the major workstation producers have grown longer and stronger. You hear all the major names — PA-RISC, Alpha, Power and SuperSPARC, and all the major companies — HP, DEC, IBM and Sun, respectively, vying for king of the RISC hill.

HP has been at the top of the hill for quite some time now with its new generation of PA-RISC boxes. The challenge of being King of the Hill, however, is staying on top. HP's new line of 9000 workstations is helping the King stay King ... at least for the moment.

This month, DP Labs takes a close look at one of the "low-end" HP Apollo 9000 Series 700 models, the Model 710.

We received a Model 710 loaded with 16 MB RAM, a 420 MB SCSI-II hard drive, a 3.5-inch floppy drive and a 16-



By David B. Miller

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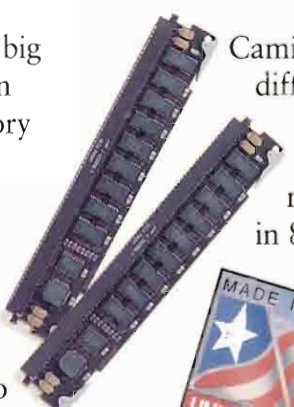

Camintonn offers three different memory modules for HP 9000 Series 700 systems. You can add memory economically in 8, 16 or 32-MByte increments up to a total of 192 MBytes, depending on model.

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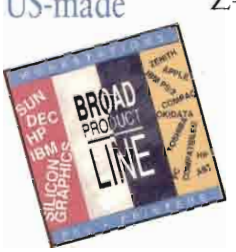

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CIRCLE 294 ON READER CARD

inch color monitor. External ports included a SCSI-II connector, two nine-pin serial, one Centronics and one audio port. Both thinwire and thickwire Ethernet can be accommodated.

Memory in the 710 can be increased up to 64 MB. Storage expansion options include additional SCSI-II drives, a 600 MB CD ROM, and a 2 GB 3.5-inch DDS tape drive. A 19-inch grayscale and a 19-inch color monitor are also available. Additional EISA slots are not available on the 710. You need to move up to the Model 720 to gain this expandability.

Physically, the 710 is one of the smallest workstations I've ever used, measuring 16.75 by 14.75 by 3 inches. Deskside leg attachments are included, so you can stand the box upright next to your desk if you wish.

Internally, the 710 is built according to the legendary HP standards of quality. Lots of surface mounted components save space. Most of the 28 lbs. of the box's weight is taken up by the power supply and disk drives.

FIGURE 1

```
ID: HP9000 Model 710
CPU:  PA-RISC 1.1, 50MHz
FPU:  50MHz Number of CPUs: 1
Cache per CPU: 64KB/32KB
Data/Instruction Memory: 16MB
Disks: 1 Internal SCSI HP 420 MB (Quantum)
Operating System: HP-UX Version 8.07
Fortran Compiler: fortran/9000s700
B2408A.08.07
C Compiler: HP92453-01 A.08.71

Tuning Parameters: default
Background Load: default
System State: multiuser


SPECint92 Benchmark Results

Benchmark       Referenc    Elapsed
Name            Time        Time          SPEC
                (Sec.)      (Sec.)        Ratio

008.espresso    2270        56.5          40.2
022.li          6210        171.1         36.3
023.eqntott     1100        30.4          36.2
026.compress    2770        108.6         25.5
072.sc          4530        183.0         24.8
085.gcc         5460        212.9         25.6

Geometric Mean: SPECint92                 30.8

SPECfp92 Benchmark Results

013.spice2g6    24000       730.8         32.8
015.doduc       1860        42.9          43.4
034.mdljdp2     7090        105.9         66.9
039.wave5       3700        330.9         12.3
047.tomcatv     2650        42.0          63.1
048.ora         7420        69.3          107.1
052.alvinn      7690        138.6         55.5
056.ear         25500       403.9         63.1
077.mdljsp2     3350        105.2         31.8
078.sum256      12700       367.0         34.6
089.su2cor      12900       222.6         58.0
090.hydro2d     13700       306.4         44.7
093.nasa7       16800       388.9         43.2
094.fpppp       9200        216.3         42.5

Geometric Mean: SPECfp92                  45.1

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```

Performance

We ran several tests on the 710 to verify its performance claims. First, we ran the benchmarks published in the article "Built For Speed" that appeared in the December 1991 issue of *HP Professional*. Results, in seconds, are as follows:

```
Benchmark I: 16
Benchmark II: 22
BenchmarkII.A (ten steps):
21,31,45,63,59,59,59,64,60,60
Benchmark III: 130
Benchmark IV: 129
Benchmark V: 14
```

Comparing these results with the results obtained by author Andy Feibus on other platforms, reveals that the 710's performance falls right behind its big brother, the 720. The only areas where there was a significant difference in speed was in the disk benchmarks. The 720 used by Feibus in his tests took only 62 percent of the time required by the 710 to perform the file write test and only 52 percent of the time required by the 710 to perform the file read test.

We also ran two suites of SPEC benchmarks — CFP92 and CINT92 — the latest release of the floating point and integer tests. We ran the benchmarks straight out of the box, using the vendor wrapper files supplied with the SPEC distribution to supply compilation options (see *Figure 1*).

Even though SPEC has published figures for the HP710, we like to attempt to duplicate the test results in-house. We came very close to the published figures: 31.6 for SPECint92 and 47.6 for SPECfp92 as reported by SPEC.

You Can't Touch DAT!

In addition to the 710, we also installed and tested the HP Series 6400 Model

I was pleasantly surprised at the size of the DAT unit. It can be tucked into most available nooks and crannies, thus not taking up valuable desk space.

2000DC DAT drive. The DC model features data compression. Taking advantage of the data compression feature requires HP-UX Version 8.07. A Model 2000 without compression is also available.

I was pleasantly surprised at the size of the unit—a mere 4 in. high by 4.5 in wide by 8.5 in. deep and a light 4.8 lbs. It can be tucked into most available nooks and crannies, thus not taking up valuable desk space.

Up to 2 GB of data can be stored on 90 meter cassettes. With data compression, up to 8 GB can be shoe-horned into the same size tape. Sustained transfer rate is the traditional DAT rate of 183 KB/sec for non-compressed functions. That can increase up to 732KB/sec when using compression.

Hardware installation is a snap. Simply make sure the SCSI ID indictor is set properly, then plug in the cables and terminator, if the drive is the last on the SCSI daisy chain.

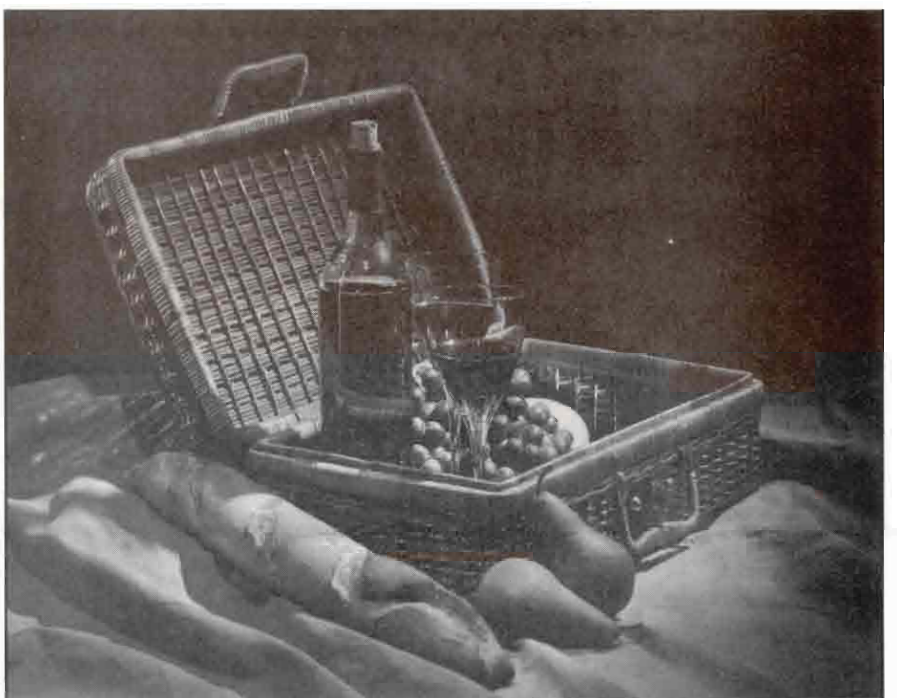
After that, you need to create device files for the drive. On the 710, we created device files in the form of:

```
mknod c MM 0x2011CM
```

where MM is the major number (54 in our case), I is the drive's SCSI ID, C is either hex c for compressed or 0 for non-compressed mode and M is either 2 or 3 for rewind/norewind on close. In addition to device files, you also must make sure that your kernel is configured for SCSI devices.

In addition to the standard UNIX tape commands (cpio, tar, dd, dump, etc.), HP provides software with the drive to ease the task of backing up and/or restoring your system.

The datio utility uses cpio as a base, but it adds a layer of simplicity that relieves you of the burden of having to remember every option and switch. HP says that datio is ideally suited for small to medium-sized systems that have no



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special backup requirements.

The datinfo utility is used to determine your tape useage and how much tape remains on the drive. It can also report on data compression statistics. Datinfo is not supported on the HP 9000 Series 800 line.

Software installation is easy. The utilities are distributed on DAT DDS tape, so you'll know soon enough if your drive is installed correctly. The update utility takes care of transferring the files to disk.

We ran some simple tests using datio. The command to backup your filesystem starting from the root directory is:

```
find / -print | datio -o
```

Datio takes care of the rest. Optional switches include -a to reset the access times of files to the time when they are copied, -A to suppress ACL informational messages, -x to save special device files, -v for verbose mode and -h to make datio treat symbolic links as normal files or directories.

HP clearly has both feet firmly planted at the top of the workstation hill.

You are prompted for more tapes if your archive exceeds the tape capacity. Also, if you have multiple drives, you can instruct datio to backup to each drive sequentially. A table of contents is appended to the end of the archive. If your archive spans multiple tapes, you'll have to remember that your table of contents will be saved on the last tape of the saveset.

Restoring files can be done via the command line or through a menu system. In any case, you can restore single files, the entire fileset, or restore files with names that match a pattern.

To test the backup capabilities, we backed up our 283 MB root filesystem and got the following results:

```
   Uncompressed   Compressed

real:  25:38.1    18:18.9
user:      1.1        1.4
sys:       7.0        7.5
```

HP clearly has both feet firmly planted at the top of the workstation hill. With products like the HP 9000/700 Series under their belt, it's going to be awfully hard to knock King HP off the top. ■

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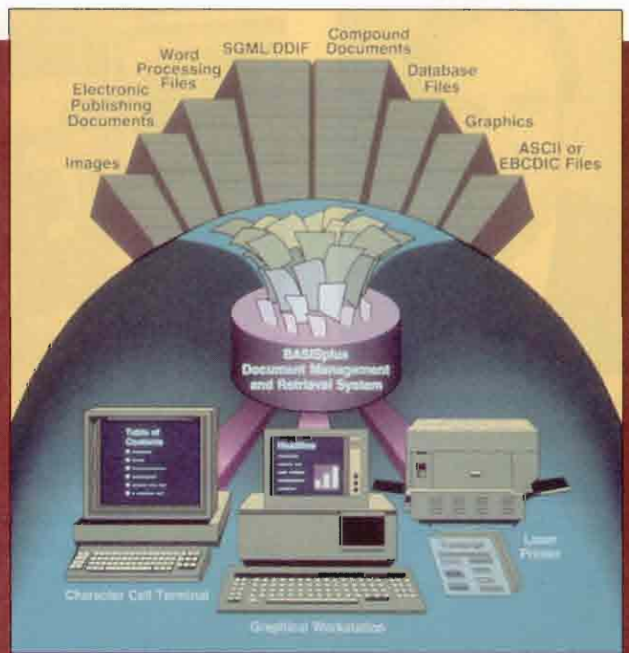

Over the last few years, we've developed a personal rule of thumb for judging the range and effectiveness of a piece of software: Take a look at the expanse of its documentation. A glance at the computer section of any book store confirms this conjecture. There we find volume after volume on UNIX, WordPerfect, MS/DOS and 1-2-3, among others — a reflection not simply of the dominance of these packages, but also of their inherent power.

Recently, we worked with a Document DBMS, which might be defined as a database with a real but arresting attitude, on one of our resident HP Apollo workstations. Applying the rule of thumb described above to this system, BASISPlus from Information Dimensions Inc. (Dublin, OH), results in a very favorable "guesstimate" of the potency and potential of the product — BASISPlus can be accompanied by as many as 25 volumes of documentation.

Components And Capabilities

BASISPlus is made up of several modules that accomplish the definition, creation, maintenance and manipulation of a database — a database designer for documents. BASISPlus was optimized from the ground up to manage lengthy blocks of text, as well as more traditionally structured records. It can consider a long

By Michele Petrovsky

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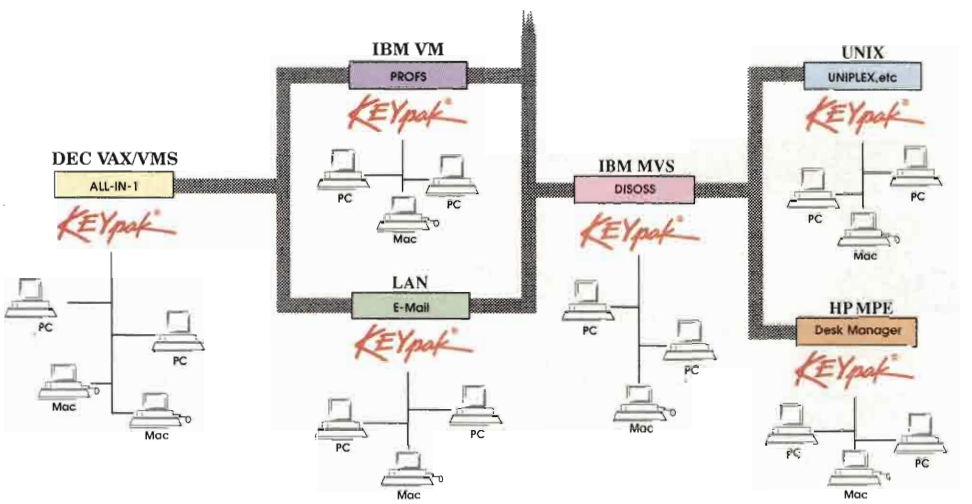

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string of characters as a record; it also can handle something on the scale of an entire newspaper or manuscript in the same way.

Eleven modules exist in the spectrum of data management tools that is BASISPlus. Among those in *Table 1* are some whose functions seem routine.

One of BASISPlus's less conventional components is its Thesaurus Manager (TM). The Thesaurus Manager creates and controls thesaurus databases. What are thesaurus databases? We told you BASISPlus offers some interesting twists. A thesaurus database is a centralized, organized collection of thesauri. Thesauri in turn are lists of possible alternative search terms for "data" databases.

For instance, in the demonstration application by means of which we learned (a bit about) BASISPlus, the thesaurus permitted us, among other things, to retrieve on one pass records containing "United States," "US," and "USA" in a given field. This is one of BASISPlus's neatest tricks — allowing a user to search a database by terms that were not indexed, but whose contents resemble the contents of indexed items (finding all records containing "car" when only "automobile" has been indexed, for instance). (See *Figure 1.*)

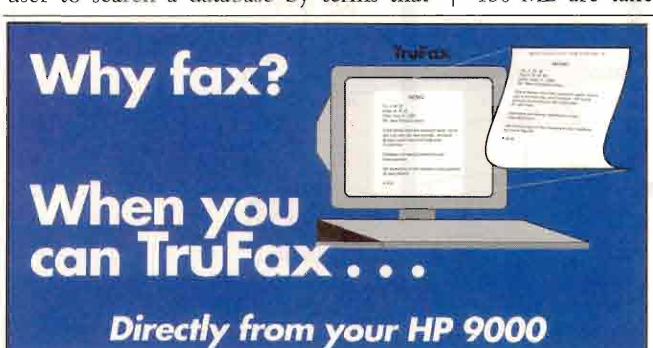
TABLE 1

Module	Function
DMK (Data Manager Kernel)	Controls, integrates and coordinates all BASISPlus activities.
DMSA (Data Manager System Administration)	Registers users, carries out overall management of the system.
DMDBA (Data Manager Database Administration)	Creates and manipulates databases.

Requirements And Installation

Release L of BASISPlus, with which we worked, requires at least 210MB of disk space for a full installation. Lest you panic, know that, of that amount, about 150 MB are taken up by system object code, demonstration databases, and other components not needed for normal operation and which can be removed after installation/user training.

The system to which you load this release of BASISPlus must be an HP 9000 series system with at least one HP DAT or HP 9145-compatible tape drive, at least 16 MB memory, and HP-UX release 8.0 or higher. Installing the product involves a number of tasks which can be summarized as follows:



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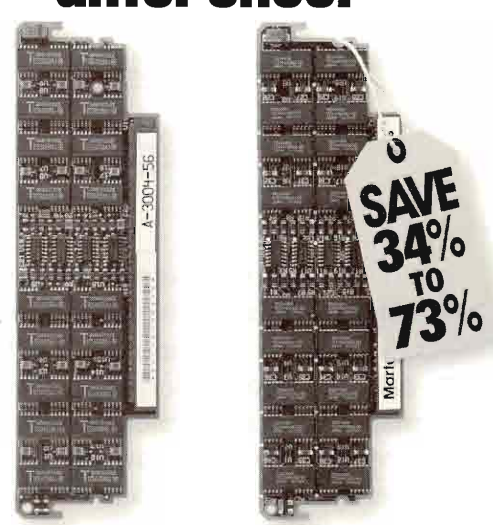

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- Creating a root UNIX directory, system account, and user group for BASISPlus.
- Copying the application's files from tape to disk.
- Creating the BASISPlus file structure and operating environment.
- Starting the BASISPlus kernel for the first time.
- Assigning unique passwords to BASISPlus usernames. (including the application's System Administrator)

The Release Notes supplied with the package contain step-by-step instructions for installing BASISPlus. Anyone conversant with UNIX should have no trouble understanding. Using those Notes to carry out the load of BASISPlus to our HP Apollo 9000/300 was uncomplicated, and took about 30 minutes.

Tests

We quickly realized that the one volume of documentation called "Introduction to BASISPlus" should be our guide and tutor. We turned to Chapter 2 of that volume, and began to work with Express, the window-oriented retrieval and update module of BASISPlus. We began at the beginning, as does the Introduction. Several pages and minutes were spent on becoming familiar with the application's general environment: special purpose keys and their functions such as, function bars (bar "menus" of commonly used keys), "action" bars (bar "menus" of the actions available to a user on a given window), BASISPlus's context-sensitive Help feature, scrolling and windowing.

At this point, we also began to learn that Information Dimensions uses an atypical set of terms in presenting BASISPlus. What do they mean by "granularity?" It turned out that this is the phrase applied to the breadth of material that a user wishes to scroll. That is, there are two general types of granularity: window and line.

We had to backtrack to Chapter 1 of the Introduction, reviewing the section on basic terminology and concepts, in order to make clear what was meant by such phrasing as "Intent" (the mode in which a database is opened: view, modify, and so on), "View" (the definition of those fields a particular user can access, and the way in which material so obtained should be presented; intended to tailor data retrieved to the specific needs of a variety of users), and "Model" (a collection of views that apply to a given user or user group). Any problems we had with BASISPlus were of this sort.

Occasionally, we found ourselves wistfully wishing for more commonplace phrasing: mode rather than intent, depth rather than granularity, and so on. A product as comprehensive and packed with capabilities as BASISPlus probably

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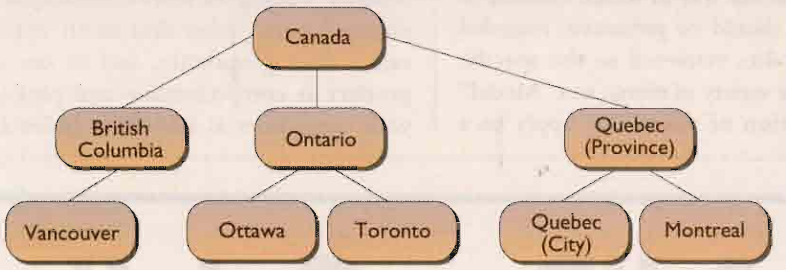
FIGURE 1



shouldn't lengthen its new users' learning curve by adding such a considerable set of terms to the grab-bag of ideas they must absorb.

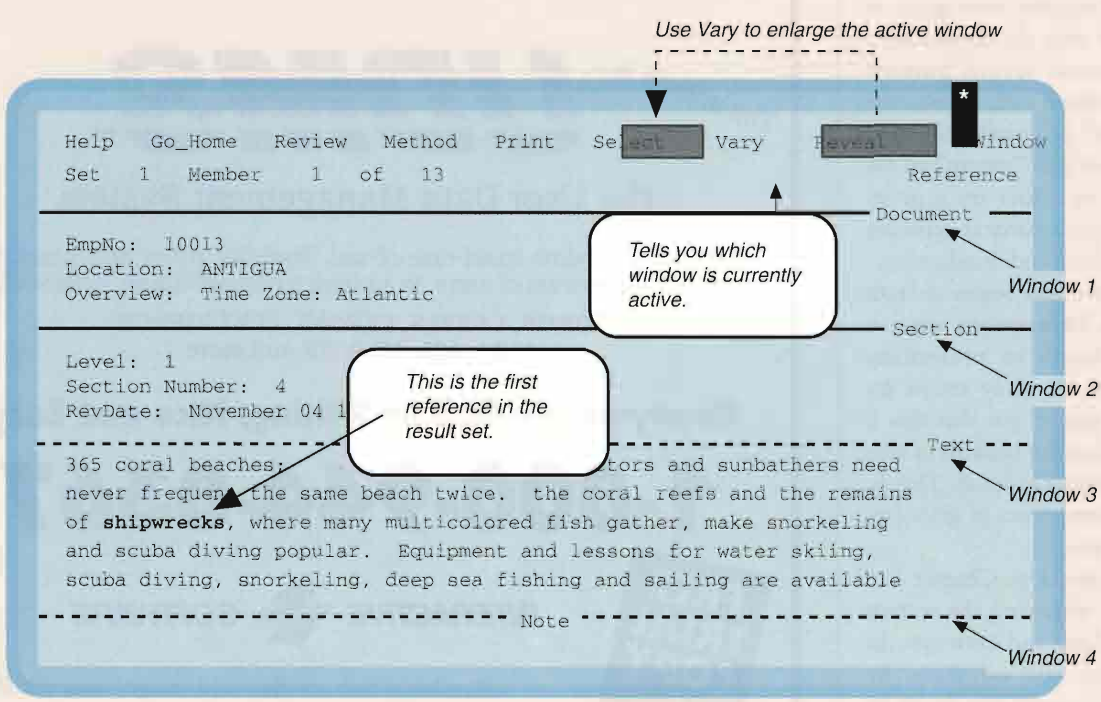
Luckily, it took only a little perseverance to get over this hurdle, and to allow us to begin to experience the wealth of data-manipulation and presentation tools that BASISPlus offers. For two days we worked our way through the Introduction. We learned how to open a database and how to choose a FIND method from the available methods Field, Command and Topic. Using a Topic- based search, we found all occurrences of any words beginning with the strings "shipwreck*" or "whale* ." Highlighting GO-HOME (aka " go back to the screen previously displayed") on the Find window's action bar, we then proceeded to the Show window in order to display our retrieved data.

The Show screen is the site of another of BASISPlus's interesting wrinkles on database manipulation. Such a screen is divided into two sections, the topmost of which, called the document level window, displays "top level" fields such as a chapter title. The second Show window, or section level, presents fields that are in effect members of subsets of a top level field.

While at our Show screen, we worked with changing granularities and directions of scrolls, as well as with devising alternative search strategies. We sorted search results; searched on more than one field at a time with a number of combinations of relational operators (greater than, not equal to, etc.); returned to a set of results which we'd previously saved, and modified the search criteria to be used, thereby permitting a re-run of the search which produced a different set of results; and created a print file of one result set, which file was assigned appro-

FIGURE 2

Full SHOW Window



priate ownership, group, and "world" permissions by BASISPlus. (See *Figure 2.*)

Next, we moved on to Chapter 3 of the Introduction, and to FQM (Fundamental Query Manager), BASISPlus's command-oriented user interface. From the FQM command line, we were able to select a particular View, and cause it to be displayed upon a screen rather than in table form, with the same command (USE/SCREEN [view name]); to display summary information for all Views in a database (with SHOW/DDB *); to display similar information for each field in each View (by means of SHOW/DDB * .*); and to carry out Boolean searches similar to those we'd carried out through Express.

We used the LOOK command to familiarize ourselves with the nature of the data our database contained, becoming aware of such characteristics as the number of records or documents which contained the term on which we'd searched (this number is known as a "member" to BASISPlus) and the number of times the search term appears in each member. We used the FQM command line to alter the number of terms displayed by LOOK (from the default of 20 to 4, by entering LOOK EMPLOYEE.NAME='S'*LIMIT =4). We then entered the command MORE to scroll forward through the list produced by the just-mentioned variation on LOOK, and the command BACK to move backward through that list.

Day two of our work with BASISPlus included setting up a database, as well as creating and modifying thesauri. The former involved selecting DEFINE from the package's Home Screen action bar and then entering the name of the database we wanted to create in the appropriate slot of the Database Level window to which this first action moved us.

Next, BASIS Plus showed us a summary of all settings related to our about-to-be-established database, which settings we had to confirm before being allowed to proceed. We then specified a record name; selected a primary key field for that record and defined that field's data type and width; and defined all other fields. Establishing a thesaurus involved giving that admirable critter a name; defining its general features (e.g., will it permit the inclusion of abbreviations in its list of search synonyms); and defining its relations (such as setting up a situation where "USA," "US," and "United States" are recognized as synonyms, thereby allowing a search predicated upon any of them to produce records containing any other of them).

Pretty powerful stuff, right? Powerful indeed; it is the existence and scope of thesauri that are largely responsible for BASISPlus's information management virtuosity.

Throughout our two days of keeping company with BASISPlus, we had no further fuss with its terminology. We relied solely on the Introduction as our tutor. That volume of documentation clearly and easily led us through the sometimes complex ideas and processes we've just discussed. One particularly handy feature of the Introduction, and of all the package's documentation, is that each chapter concludes with a summary or review of the material covered, giving the user in effect a "quick reference guide" to the topics in question.

At the end of those two days, we felt that our rule of thumb for evaluating software had been upheld. Our work with BASISPlus proved it to be as powerful an information management tool as its documentation is extensive. If your environment needs such tools, consider a sound basis for satisfying those needs: BASISPlus. ■

BASISPlus

PLATFORMS: HP 9000 series with at least one HP DAT or HP 9145-compatible tape drive, 16 MB or memory adn HP-UX 8.0 or higher.

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APOLLO

Fred Mallett

Cases In Point

Did you ever notice how sometimes the trivial things bring down the house and the show-stoppers slide by unnoticed? I'm not sure what that has to do with this column, but I was thinking how "point" releases are supposed to be trivial. Only major releases, like SR9 to SR10, were supposed to be *major*. Naturally, there are changes from SR10.3 to SR10.4, but I'll let you decide whether they are trivial.

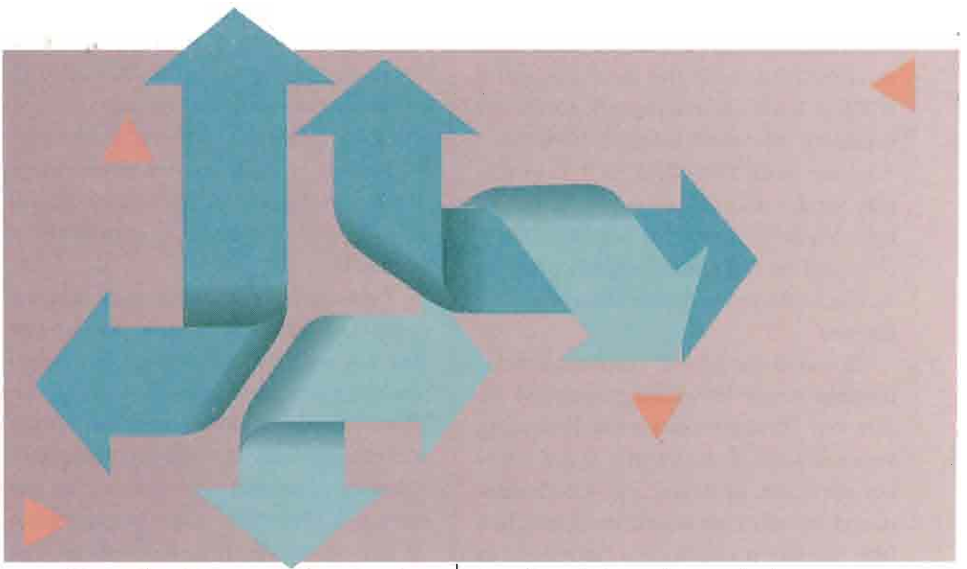
One thing you'll notice right away about SR10.4 is the sheer volume of the Release notes — 75 pages in Chapter One alone, which is the summary of all changes new to this release. Chapter Three is documentation changes (warning: I noticed that there were 60 help files changed, and more than 500 man-pages were affected).

For the few who might load SR10.4 without reading the release notes, you may recall being told at last August's ADUS (now Interworks) conference that this release would be smaller than SR10.3 because SR9 compatiblity and sau2-6 support had been dropped. (The unsupported machines [sau2-6] would make good X-terminals, also they are mostly compatible across the network, so they can stay at SR10.3. The other choice is to sell them to the Navy — they need anchors.) So, what happened to the size? Here is a table from the release notes:

	SIZE	SAU SIZE
SR10.3 with Sau2-9	153.7	34.4
SR10.4 with Sau7-9,11,12,14	158.5	8.2

In reality, I loaded SR10.4 on a DN3500, as the AA node, with full load, and it was right at 220 MB. The largest release ever.

I'm sure the HP answer would be



something like "increased functionality requires increased space." I forgot to ask the question at the Interworks Sys_admin Sig Meeting in March. Reality says the size is because of all the new compliance in SR10.4, much of it to OSF/1, such as threads and RPC. The new version of NCS (2.0) is the RPC component of OSF. This means the first industry implementation of OSF/DCE's RPC is on Domain/OS! This is for future compatibility to some OSF/DCE technologies such as security, and the Cell Directory service. This also means that you should be made aware of some changes to NCS, but first, here are some changes to installation.

Getting It There

If you installed the first SR10.4 node without any help from the release notes, I believe it would work fine. The changes are subtle and become most apparent in the subsequent loads from the Authorized area.

First, all install tools released at SR10.4 are supposed to be backwards compatible to install any RAI product to any SR10 release. This may be pushing the limit, but I did use SR10.4 install++ to install SR10.3, and it worked.

Second, you don't need to install SR10.4 to the AA node to install other nodes with SR10.4. You can load the SR10.4 AA on a node with a big disk (read: important node), then not install it. Leaving that node at SR10.3, you can install SR10.4 to some DN3000, or another not-so-critical node for testing (unless of course you trust the statement about this being the most bug-free release in the history of silicon).

Third, to invol or not to invol. We've been told for a long time that it wasn't necessary to invol for SR10.4. If you do, you get a Disk Quota system, to limit users space. At invol time, you specify the number of quotas you need on that disk, then use the edquota command to control limits, and quotaon, quotaoff, for obvious purposes.

Now, the list of other install changes:

- You must create new config files as they have changed.
- Install++ always installs closed acls. No exceptions.
- Use the replacement of inprot, called /etc/setprot to open acls if you *really*, *re-*

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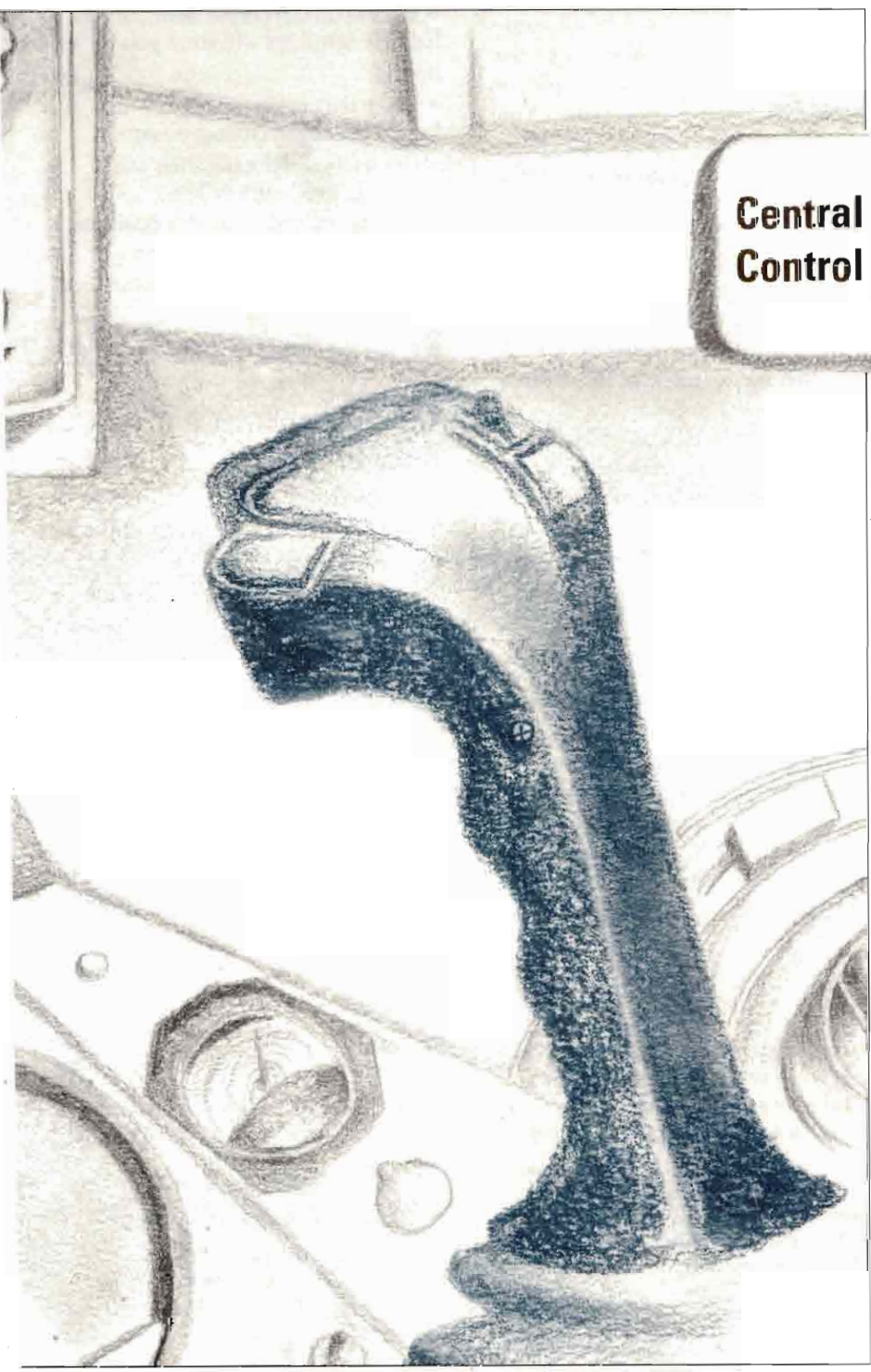

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CIRCLE 471 ON READER CARD

ally, need to. HP supplies template files to do this.

- If you have never used /install/preserve.list to save files during install, you might want to look into it.
- Install now saves a bunch of files for you, with the date appended (see the release notes).
- Install now installs some files only if they do not exist on the target. In this way modifications won't be overwritten. Here is a partial list:
  tcp/ip_config_files (hosts, protocols....)
  font_files cron_files
- Install++ tool has some new and changed options you *must* be aware of for subsequent node installs:
  -D for de-install of whole product
  -d to de-install partial product (uses config file)
  old -d option is now -j (use defaults if config file is incomplete)
  -A re-set acls in one fell swoop
  -m will now do what the config file says to do (-m used to not be able to change a link to a directory)
- config tool can now:
  do re-answering of one question (instead of all questions)
  set default link destination
- mrgri tool can now:
  merge PSK's with product

NCS 2.0 Changes

First, there's a new library, /lib/dds2lib. There also is a new server that replaces the llbd — called rpcd. Change any reference from llbd to rpcd and everything will work fine. Now create /etc/daemons/rpcd to start the server. HP did a smart thing in hard linking the two together so that even if you weren't aware of the change, starting llbd really starts rpcd. This allows those with modified /etc/rc files to continue to use them until you can change the llbd references.

The global location broker has a new database format. The NCS 1.5.1 database that was used in SR10.3 will be automatically (read hopefully) converted to the new format. NCS2.0 will save copies of the old files with a .bak name. You might want to make backup copies yourself, because if things go astray, you're talking about a lot of server restarting in a large network to rebuild the database. The new files are named glb.d (the database) and glb.r (the replica list). The old files were 'node_data/glb.p and glb.e.

One other change is that the default family GLB uses to replicate the database is now IP. It used to be dds.

There seems to be a bug here. If you do not have TCP/IP running and you start the global in default mode(IP), this will crash a DN3500. I would have expected the GLBD to have not run, crashing I call a bug.

RGYD Changes

The SR10.4 rgyd is incompatible with any previous rgyds. The fixes to make this incompatibility include the "I can't change my password" problem in rgyd.1.2 after you changed groups.

This new rgyd causes some administrative headaches. The versions are incompatible on the network, so with the first SR10.4 rgyd, all rgyds must change

HP Professional 5th Anniversary

Don Marks, in the May 1991 issue of *HP Professional*, writes: *The fact is that HP's current offerings surpass those from Sun by a long shot, and from its long history of HP 3000 and HP 9000 success, it already has a far greater presence than Sun in commercial markets. The problem is that almost nobody has a solid grip on just how strong a commercial competitor HP is.*

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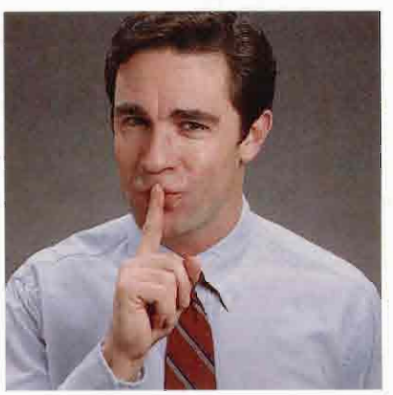

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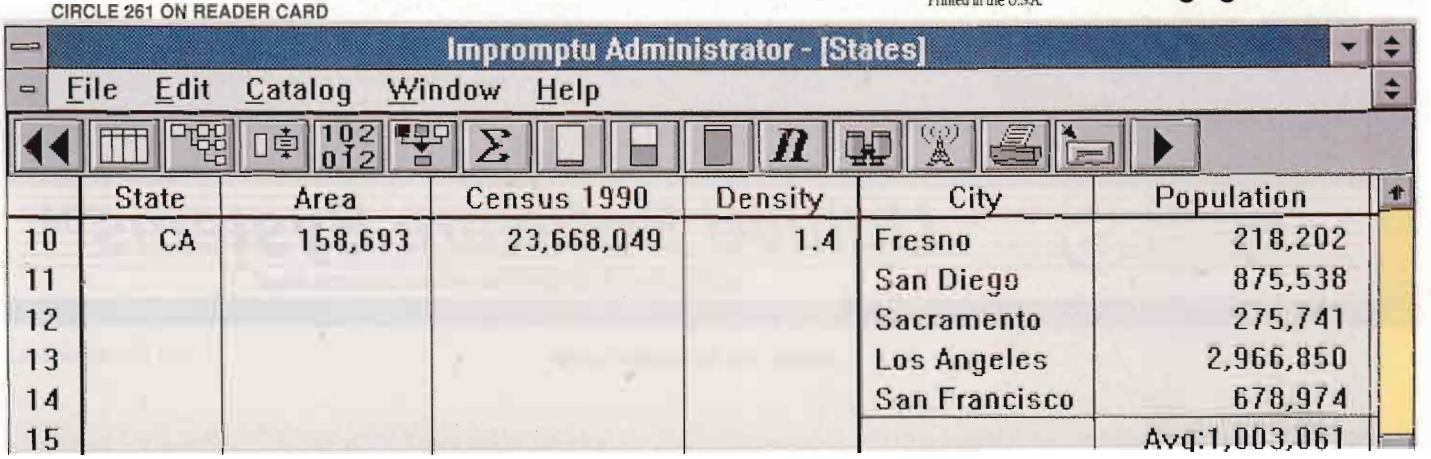

	State	Area	Census 1990	Density	City	Population
10	CA	158,693	23,668,049	1.4	Fresno	218,202
11					San Diego	875,538
12					Sacramento	275,741
13					Los Angeles	2,966,850
14					San Francisco	678,974
15						Avg:1,003,061

to the new version. It is recommended to change all rgyds right away, as the new one runs on 10.2 and newer versions of Domain/OS. The steps are simple, do a backup. Stop all rgyds. Next, copy the new rgyd all around. Then bring up the rgyds in the order of master first, then all slaves.

There is a really wonderful bug here. Don't ever use the Display manager command "EX" if that node is running rgyd. The rgyd process will still be running while at the phase II boot shell. When you issue the "Go" command, another one will start. At one point, I had six rgyds running on one DN3000. Talk about slow. If you have more than one rgyd running on the master node, due to "EX-GO's", all edrgy input will be lost when you finally shut and reboot. While the processes are running the new input will appear to be there. The workaround is to never "ex," instead use shut.

It is recommended to change all rgyds right away, as the new one runs on 10.2 and newer versions of Domain/OS.

In fact, if you are using the autochanger, a reboot isn't safe.

Hardcopy Changes

Not many here, but there are a few good ones worth mentioning. Like the prmgr/pravr doesn't work at all. They don't register with the NCS system. As a workaround, I tried bringing up the SR10.3 prmgr and pravr, and they did register with the NCS system, but I have not tried to print with this configuration yet.

Are you sys_admin types sick of deleting files from the queue that were missent by misguided users? It has been fixed. The new prf command has the -check option as default.

In order to speed up printer lookup there now is a printer information cache kept on each machine. This consists of the following files kept up to date by the OS:

'node_data/print.g = all glb entries for prsvr and prmgr
'node_data/print.j = a list of jobs
'node_data/print.p = a list of printer and prmgr names

Some other enhancements include using the -cancel instead of -sig_pr option for stopping active jobs. There are some new prsvr configuration file directives:

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In order to speed up printer lookup there now is a printer information cache kept on each machine.

■ startup_page — To prevent printing of the prsvr sheet.

■ audit_filter — To supply a filter program name that you might write to see who printed what.

There is also a new driver included that allows you to use prf to send jobs to a BSD printer. (This means you no longer have to dedicate a printer to bsd, if you want true bsd printing.

Other_Good_Stuff

We get HP VUE version 2.01 with SR10.4. This will be rather handy for getting a consistent user GUI over HP-UX and Domain/OS. The bad part of this is that one of the desktop tools, Vuefile, is listed in the beta release notes as "exhibiting pathological behavior." That's the tool I want to run.

The BSD date command used to wander around the LAN and change the date/time on all machines when you were running timed. The new version of the command now requires you to use the -N (uppercase) option to go over the LAN.

Co-write (nR_xor_1W) locks have been enhanced. In SR10.3, all locking processes had to be on one node. This means that while one process on one node has a write lock on a file, any number of processes on any nodes may read that file. The big advantage is that log files can be read from any machine while the logging process is still active.

The mount command now properly updates the /etc/mnttab and /etc/mtab files. For those of you who hated the bourne shell, rejoice, now /bin/sh gives you a korn shell. The bourne shells have been moved to /bin/bsh.

Now, there is the /usr/apollo/bin/dmlock command to lock the screen like the Interworks library's gone command.

Now server process manager has a no_crp_me setting, which forces all crp's to use a password. There is also a max_conc option, which sets the maximum number of concurrent crp processes.

Rbak and wbak now support SCSI tape drives, using the -dev mt#, where

Linda Hughett, Merchandising Equipment Group

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HP Professional 5th Anniversary

Dave Mallery, editorial director, in the January 1989 issue of *HP Professional*, writes: *Examine the latest restructuring of HP's computing division closely. Now we have a "Computer Products" division and a "Networked Computer" division. The time-honored divisive technical/commercial fault line is missing. (Who says the environment doesn't influence our business decisions?) I especially applaud the "Networked" appellation. Monolithic, isolated computers have no place in business world in 1989.*

= SCSI address minus 1, option.

The autochanger is now supported. This is the rewritable optical disk juke box. It supports to 20 GB of storage, but the access speed is up to 5 times slower than mag disk.

Other_Bad_Stuff

For those who are using uwm as a window manager, MIT no longer ships it with X11, so it isn't supported under X11R4. Also, the clients shipped with the X11R4 server in SR10.4 are R3 clients.

The "blastem at logout" problem is still there. In SR10.3, you had to be running mbx_helper or else the DM couldn't stop your processes at logout time. That is still true. If running mbx_helper is a security problem in your environment, HP says don't run the DM at all, use X windows.

I didn't know whether to put this under good, or bad. The directory reference count is now UNIX-like in SR10.4. That is, if you ls -l a directory file, it will have a hard link (reference count) greater than 1. In SR10.3, it was always 1. The reason is, UNIX counts each ".." entry in each subdirectory as a hard link. The problem is, the way objects are deleted is by watching the reference count go to zero. If an SR10.4 file system is mounted on an SR10.3 node, and a directory is deleted, it may not really go away. The Fix is to salvol a volume with the salvol released with the OS you are mounting the disk on. There is a real gotcha here though. If you're using disk quotas, an SR10.3 salvol will corrupt them.

If you're running named, you must configure *all* network devices present in the machine. Including lo0.

Well, that's all I can think of — now go read the release notes. It is really, really good reading.— *Fred Mallett is president of Fame Computer Education in Corpus Cristi, TX and an Interworks board member.*

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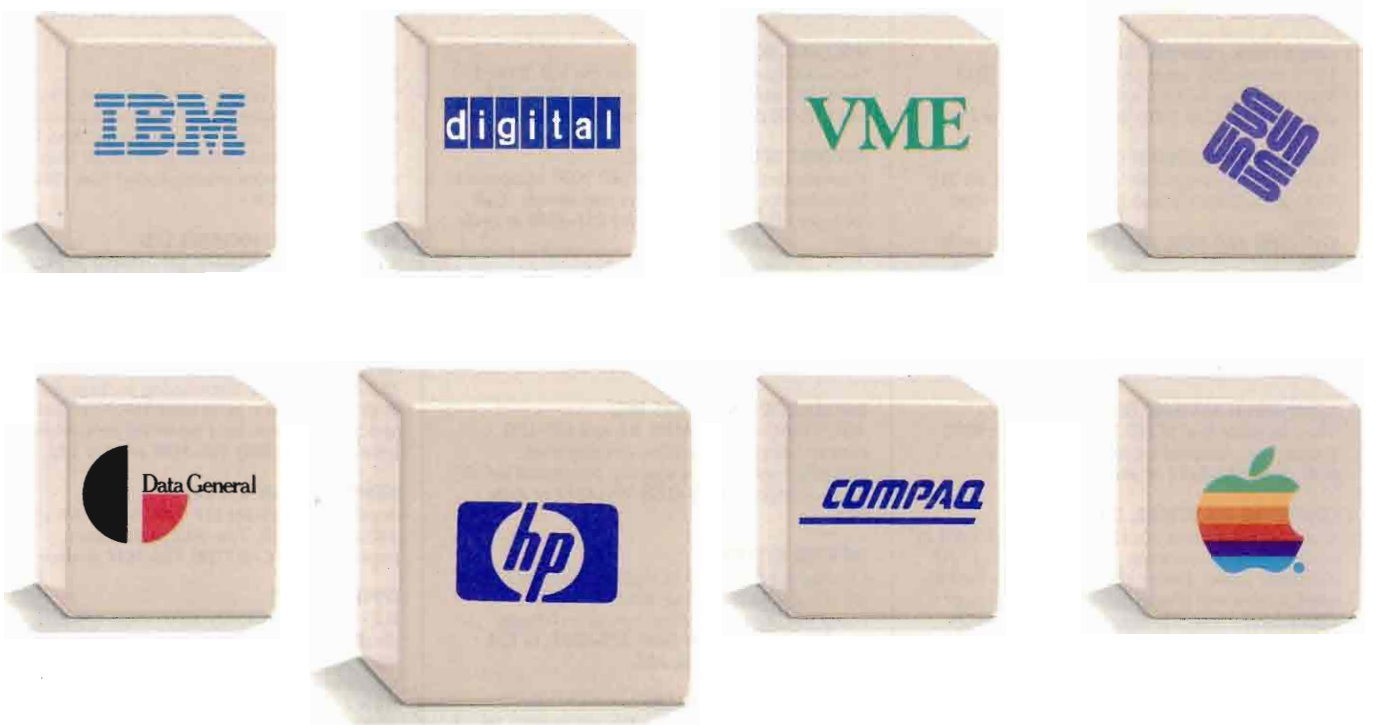

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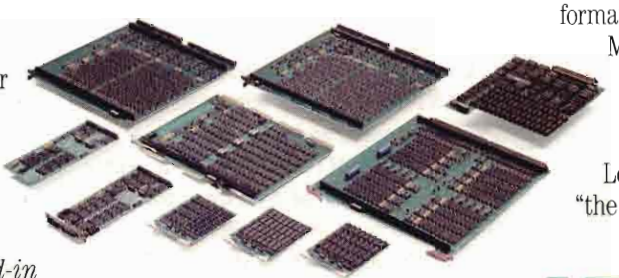

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CIRCLE 185 ON READER CARD

PC TIPS

Miles B. Kehoe

Group Recovery

My friend Larry is a financial planner, and he enjoys using his computer for his business. I made my first mistake when I agreed to help him buy his PC. My second mistake was giving him my phone number. Now he thinks of me as his private computer support person!

In all fairness, he is getting better. He actually backed up his system, and installed Windows 3.1 on his PC. Unfortunately, he installed the new version of Windows into a different directory than the old version (so he would be able to recover "if there was a problem"). When he finished the installation, he found that none of his group icons were there.

Larry's is a common problem that seems to haunts many Windows users, although you won't run into the problem during the update to Windows 3.1 if you're updating your copy of Windows 3.0. So, I'll tell you what you can do to recover your own groups if you ever lose them.

The SYSEDIT Utility

Before I get into the actual files that control groups and programs, let me tell you about a program standard in Windows 3.x that you may want to install into one of your existing program groups. It's called SYSEDIT.EXE, and lets you view and make changes to the four primary files that control your system under Windows: CONFIG.SYS, AUTOEXEC.-BAT, WIN.INI and SYSTEM.INI. Remember to use extreme care whenever you make changes to any of these files.

Start Windows and open the group in which you store your primary utilities. For me, this usually means a Utilities group that I created when I first installed Windows, but the Main program group is fine, too. Select New from the File menu, and mark the Program Item button.

Using the Browse key, navigate into the SYSTEM directory within your Windows directory, and you should see the program SYSEDIT.EXE. Select it, enter a program name of SysEdit, and press OK. Now, you can start the program by clicking the icon, and SYSEDIT will open all four configuration files. You can edit any of the files, and whichever file is in the active window when you do a File | Save operation, is the one that will be written. Remember, making any changes to your configuration files without a backup might lead to severe problems.

Controlling Program Groups And Items

Groups are a concept Microsoft introduced in Windows 3.0. They are the small icons that appear on the Program Manager main screen, and which *contain* icons for programs and data files. (Yes, you could represent data files as icons linked to applications in Windows 3.0, but it was not as trivial as it is in Windows 3.1).

One reason more people don't seem to know about groups and programs is that the primary file that controls those groups you see is not one of the *standard* configuration files even in SYSEDIT. There is a file in your Windows directory called PROGMAN.INI. If you print it out, you'll see something like *Figure 1.*

When you create a new group, Program Manager creates an entry in the PROGMAN.INI file for your group. The name of the group file, which you specify when you first create the group, becomes the highest numbered entry into the [Groups] section.

Because the format of these group files is binary, and not documented by Microsoft, you will probably create groups using the File|New menu. However, if you have a valid Windows 3.1 group file in another directory (or from another system), the only way to *add* that complete group to your copy of Windows is by editing PROGMAN.INI. Remember,

FIGURE 1

```
[Groups]
Group1=C:\WINDOWS\MAIN.GRP
Group2=C:\WINDOWS\ACCESSOR.GRP
Group3=C:\WINDOWS\GAMES.GRP
Group4=C:\WINDOWS\STARTUP.GRP
Group5=C:\WINDOWS\NEWWAVE.GRP
Group6=C:\WINDOWS\WINAPPS.GRP
Group7=C:\WINDOWS\WORDFORW.GRP
Group8=C:\WINDOWS\BCC3.GRP
Group9=C:\WINDOWS\DOSAPPS.GRP
Group10=C:\WINDOWS\TEST.GRP
Group11=C:\WINDOWS\MICROSOF.GRP
Group12=C:\WINDOWS\OV.GRP
```

Carl Marbach, publisher, in the May 1987 issue of *HP Professional*, writes: *With IBM three to four years away from a solution, DEC and HP will have a window of opportunity to exploit the unified architecture that each has brought to market. Don't think about the Spectrum computers as a continuation of the 3000 series. It's a new machine and, more importantly, it is the future of HP computing.*

its not nice to fool the Program Manager, so be sure your entry is correct in syntax and in content. Don't omit any commas, and don't duplicate already existing group numbers.

When you manually move groups within the Program Manager window, and elect to save changes, Program Manager rearranges the order of lines within PROGMAN.INI. Group numbers do not change; it is the order of the groups that determines the displayed order.

If, for whatever reason, you start Windows and it cannot locate one or more of your groups, check to see if PROGMAN.INI is correct. If it is, verify that the actual group files are where they should be.

If you lose one of your group files, your only choice is to restore a recent copy from a backup set, or recreate this binary format file using Program Manager. I suggest the former method, because it is much easier and reliable

Creating Program Icons

Once your group file exists, its an easy to add program or data file icons. The most obvious method is probably to return to the File|New menu, and select Program Item. Program Manager prompts you for an item name, program name, working directory and a shortcut key.

To have your icon represent a program, use the Browse button to move around your directory structure to locate the executable file, whether it is an EXE, COM or BAT file. Complete the item name, and save the entry.

An alternate method of creating program items is to use the Windows 3.q File Manager to locate the file; and, using the mouse pointer, drag the executable filename into the appropriate Program manager group. This makes Windows very easy to use.

Startup Group

A major new feature in Windows 3.1 is the STARTUP group. It is to Windows what the AUTOEXEC.BAT file is to DOS. If you have programs you want to run every time you start Windows, put the program icon inside of the STARTUP group.

Note that, as in previous versions of Windows, you can have more than one icon for the same program. You can either move an icon from one group to another; or you can make a copy of the program icon within another group. Perhaps the easiest way to do either in Windows 3.1 is to drag the icon from the group it is in to the group where you want it. If you press and hold the Control key while you drag an icon, you will make a copy of the icon in the second group. If you don't hold down the Control key while you drag the icon, you will move the icon to its new group. Program Manager takes care of all the details of modifying the binary group files.

In earlier versions of Windows, you could accomplish a similar function to the Startup group by creating entries in the RUN= or LOAD= lines of WIN.INI. STARTUP does not use these entries at all. However, several programs count on the WIN.INI mechanism for auto-starting applications, so Windows 3.1 also respects this previous capability. — *Miles B. Kehoe, based in Mountain View, CA, is a Sysop on CompuServe's HP Systems Forum (GO HPSYS). He can be reached there at 76711,405.*

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PowerDesigner Aids In Analysis And Design

Cognos Inc. announced its PowerDesigner analysis and design tool.

PowerDesigner, which runs on Intel 386 systems under OS/2 Presentation Manager, aids in the analysis and design of PowerHouse applications running on a variety of UNIX and proprietary systems from HP, DEC, IBM and Sun.

PowerDesigner assists designers by implementing data and process models across three levels: logical, physical and detail. PowerDesigner then automatically validates these models, detecting and highlighting potential problems, inconsistencies and omissions, producing Normalization and Entity Life History Analysis reports.

PowerDesigner supports relational databases such as HP's ALLBASE/SQL and Oracle, as well as a variety of proprietary file structures including HP TurboIMAGE, DEC's RMS and IBM's OS/400.

PowerDesigner is priced at $16,500. Contact Cognos, 67 S. Bedford St., Ste. 100 E, Burlington, MA 01803; (617) 229-6600.

Circle 400 on reader card

Robelle Enhances Qedit Full-Screen Editor

Robelle Consulting released Qedit 4.0 for HP 3000 computers. Qedit is a complete environment for programmers, interfacing with most software tools on the HP 3000.

Qedit supports direct compile of the workfile without saving, PREP, LINK, RUN UDCs and Command Files, and allows you to suspend tools like MPEX and Quiz for instant access. Qedit also has a compatible line-mode for batch editing jobs.

Qedit 4.0 enhancements include Native-Mode availability as well as the Classic version. The installation job stream automatically installs the Native-Mode versions on MPE XL machines. Additionally, Qedit's Editerr traps syntax errors for C/XL, PASCAL, SPL and COBOL. Qedit displays the error in your source file for you to correct in full-screen mode. Qedit's Undo command allows you to undo commands one at a time, all the way back to when you texted or opened the file. Listundo shows the commands that Qedit will Undo, including text of the lines. Qedit displays the complete change log so you can view what would be undone by Undo, before it's undone.

Contact Robelle Consulting Ltd., Unit 201, 15399-102A Ave., Surrey, B.C. Canada V3R 7K1; (604) 582-1700.

Circle 397 on reader card

The HP 4995A LanProbe II offers the fault-and performance-management features of the RMON MIB standard.

HP Presents LanProbe II And SNMP RMON MIB Monitoring

HP introduced the HP 4995 LanProbe II, a distributed network monitor allowing network managers to monitor large networks with the fault- and performance-management features of the Remote Network Monitoring Management Information Base (RMON MIB) standard.

The HP 4995A LanProbe II is a complete implementation of the RMON MIB standard, which offers fault diagnosis, network planning, and performance tuning features and uses the Simple Networks Management Protocol (SNMP) to provide multivendor interoperability. The HP 4995A is based on the Intel 386 architecture, and supports all nine feature groups of the RMON MIB at high network-traffic rates. The network monitor comes with 4 MB of memory but can be ordered with memory configurations from 1 to 8 MB, allowing users to tailor it to the size of the network.

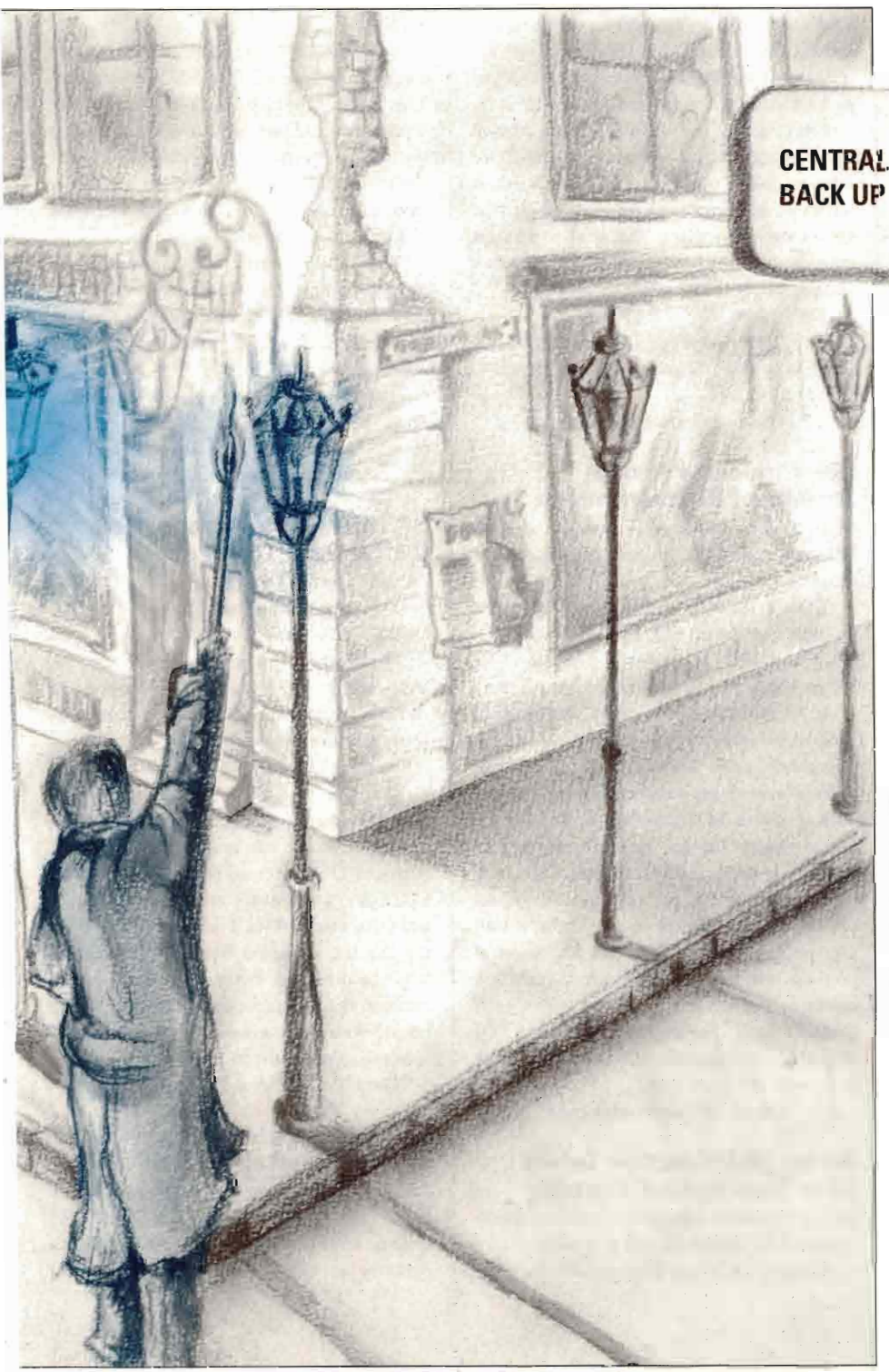
Customers can add memory to the HP LanProbe II using the customer-installable HP 5063-1813 4 MB memory kit. Firmware for the HP 4995A LanProbe II can be downloaded from the network-management station over any standard Ethernet network.

Dataram Upgrades HP 700/RX Memory With DR9700/RX

Dataram Corp. announced the DR9700/RX expansion upgrade designed to increase the memory capacity of the HP 700/RX family of X stations.

The DR9700/RX is an 8 MB board that directly replaces the D2152A HP memory option and expands the capacity of HP 700/RX stations up to a maximum of 18 MB. The DR9700/RX add-in board is completely

Are you still in the dark when it comes to network backup?



HP OmniBack and HP OmniBack/Turbo: fast and powerful backup solutions.

Who worried 200 years ago if it took a few hours each evening to light the street lamps? When it comes to your network backup, you usually need to worry about the time involved.

However, today's backup solutions – HP OmniBack and HP OmniBack/Turbo – make time uncritical. The backup for your entire network may be automated from one single point. Local databases can be backed up with up to 12 GBytes/hour.

Central control means that these extremely powerful tools enable you to reduce operating and resource costs dramatically.

HP OmniBack and HP OmniBack/Turbo support all HP-UX and Apollo Domain systems while giving you the freedom of choice in storage technology, from tape drives, to DAT/DDS devices, to rewritable optical disk library systems.

If you would like more enlightenment on how HP OmniBack and HP OmniBack/Turbo can increase efficiency at your company, contact your local HP sales office and ask for an evaluation copy. Today.

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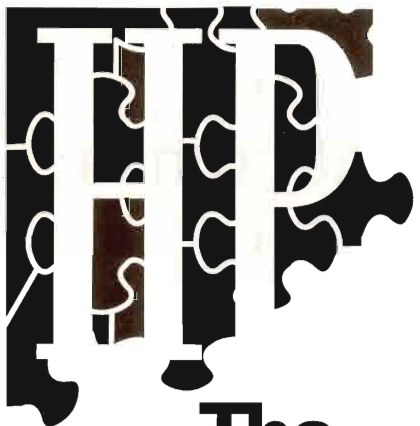

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hardware and software compatible with the HP X stations.

The DR9700/RX is priced at $699.

Contact Dataram Corp., P.O. Box 7528, Princeton, NJ 08543; (609) 799-0071.

Circle 399 on reader card

S.M. Gordon Releases DBTREND/3000

S.M. Gordon & Associates announced DBTREND/3000, an IMAGE database capacity, trending and forecasting analysis package designed to run on the HP 3000.

DBTREND is available in both Native and Compatibility mode versions. The software uses a proprietary PC like window interface, and employs a free form logic that allows users to collect the information on your databases without having to enter names and passwords in one place.

DBTREND/3000 is $500.

Contact S.M. Gordon & Associates, 807 W. West Way Ave, Orange, CA 92665; (310) 302-1118.

Circle 391 on reader card

EDI Windows Provides Seamless EDI Environment

M.B. Foster Associates introduced EDI Windows, an EDI control and translation software product.

EDI Windows concurrently supports multiple versions of X12, EDIFACT, TDCC, UCS and WINS standards to include all industry and trading partner specific subsets.

A flexible, online mapping module simplifies integration of EDI with applications. EDI Windows "jobs" can be defined to perform communications, transfer data, execute EDI translation, send mail, create reports, update applications, extract data from applications, and execute user programs. Jobs can run on demand, on an unattended schedule, or as called from within user programs. EDI Windows also features pop-up windows, pull-down menus and online help.

Contact M.B. Foster Associates, Ltd., 50 Water St., Chesterville, Ontario K0C 1H0; (613) 448-2333.

Circle 381 on reader card

Bering Multifunction Drives Offer Dual Optical Capacity

Bering Industries introduced a multifunction optical drive system for HP computers.

OptiPac 7636 and 7656 models feature a 650 MB multifunction optical disk drive (MG-WORM) combined with a 300 MB or 500 MB hard disk drive. The multifunction drive operates in dual modes, either as a rewritable magneto-optical disk drive or as a write-once optical disk drive. The OptiPac multifunction systems are supported on HP computers with HP-IB interface running HP-UX, BASIC, PASCAL, RTE-A, MPE V and MPE XL.

Both the 7636 and 7656 models include a high performance 300 or 500 MB hard disk. The high capacity hard drive can run applications and process data as the computer system's primary or secondary disk. The multifunction optical drive serves as the secondary or "off-line" drive for archiving and quick access to seldom-used files.

The 7600 Series are hardware and software compatible with the HP 1000, HP 3000 and HP 9000 computers using the HP-IB interface. The 7636 sells for $9,990. the 7656 sells for $11,190.

Contact Bering Industries, 246 Hacienda Avenue, Campbell, CA 95008; (408) 379-6900.

Circle 398 on reader card

HP Offers Data Compressed Digital Data Storage

HP announced the HP C2225A Digital-Data-Storage Data-Compressed (DDS-DC) Digital Audio Tape (DAT).

Designed for the HP Storage System, the high-capacity 3.5-inch DAT is designed to compress data that is identical and repetitive. Users get an average of 5 GB of data on a 90-meter DAT tape. The new DAT incorporates the DDS recording format, allowing data interchange with other DDS-format drives. It can read non-compressed standard DDS-format tapes as well. The C2225A offers transfer rates up to 732 KB, and features a built-in head cleaner to reduce the buildup of media deposits on the drum while reading and writing. The mean-time-between-failure rate for the C2225A is 50,000 hours, with an uncorrectable error rate of fewer than one error in 1,015 bits.

The HP C2225A is $3,595.

Enhanced Systems Says HELLO! With IVR System For HP 3000

Enhanced Systems Inc. announced the HELLO! Interactive Voice Response (IVR) system. HELLO! allows HP 3000 users to directly access the mainframe using an

ordinary touchtone telephone as a computer terminal.

Callers using the HELLO! system enter information and respond to voice prompts by pressing keys on a telephone. HELLO! translates the touchtone input into data the HP 3000 can accept. Information that is usually output to a screen or printer is converted into voice messages that HELLO! contructs by combining prerecorded words and phrases. A new software development termed Systems Interface Module allows HELLO! to emulate a terminal connected to the HP 3000. The Systems Interface Module creates the data-transfer link needed for HELLO! to exchange information with the HP 3000. The module uses a standard interface to the HP 3000, allowing HELLO! to be connected with ease. In addition, the new software module does not require any changes to the host software.

Contact Enhanced Systems Inc., 6961 Peachtree Industrial Blvd., Norcross, GA 30092; (404) 662-1503.

Circle 393 on reader card

SIMULAB From MathWorks Available On MS-Windows 3.0

The MathWorks Inc. announced the MS-Windows version of SIMULAB, its model-building and simulation software.

SIMULAB is an interactive and intuitive computer-aided engineering tool for dynamic system simulation. SIMULAB is currently available for HP 9000/300 and 400, Apollo, Sun and SPARCstation systems. SIMULAB uses industry-standard graphical user interfaces and windowing systems like OSF/Motif, X Windows, Macintosh and now MS-Windows. SIMULAB for Windows is a 32-bit program that takes full advantage of extended and virtual memory so that there are no limits on model size to restrict the modeling and simulation of large or complex models.

SIMULAB for Windows offers a complete set of tools for modeling and analyzing dynamic systems, including linear, nonlinear, continuous-time, discrete-time, hybrid and multirate models. Hierarchical model structures allow users to define, analyze and communicate complex model behavior more easily. Finally, a "live" on-screen simulation capability offers users the ability to modify system parameters and solver methods interactively during a simulation and to see the results immediately.

SIMULAB for Windows is $3,995.

Contact The MathWorks Inc., Cochituate Place, 24 Prime Park Way, Natick, MA 01760; (508) 653-1415.

Circle 394 on reader card

Eagle Employs Hands-Free Automatic Identification

Eagle Consulting and Development Inc. announced the RF ID Express Automatic Identification module available for HP 3000 computer users.

RF ID technology utilizes radio frequency transponder tags that are attached to manufacturing moveable totes/carts, cars/trucks, automated guided vehicles, bulk containers and railcars. As the container/vehicle moves past an RF detection antenna, the RF tag responds with its encoded data directly into any HP 3000 system. RF Tag Data Capture is superior to bar coding where dirt, harsh environment and long distances exist. The RF ID Express module integrates Amtech's RF ID equipment directly with Eagle's Universal Driver product, allowing HP 3000 applications to utilize online RF terminals, shop floor workstations, bar code label printing, digital scales and industrial ink jet spray markers.

Contact Eagle Consulting and Development Inc., 170 Kinnelon Road, Kinnelon, NJ 07405; (201) 838-5006.

Circle 396 on reader card

Cadshare Resources Unveils Decade-UX Version 2.0

Cadshare Resources Inc. announced Version 2.0 of Decade-UX, a C-based mechanical engineering package featuring complete implementation of the OSF/Motif graphical user interface and X.11 windows technology.

Version 2.0 introduces several features including an improved screen repainting algorithm, a memory allocation feature that intuitively resizes the workfile to accommodate a drawing, an autosave feature that allows sharing of active files by many users in a network and a cut-and-paste feature that can be used within multiple windows. Up to 10 Decade-UX sessions can run simultaneously, each in a separate window.

Decade-UX version 2.0 also features an improved DXF translator and a Hypertext online help system. Additional enhancements include a B-spline curve option, parallel, datum line and angular dimensioning, fillet

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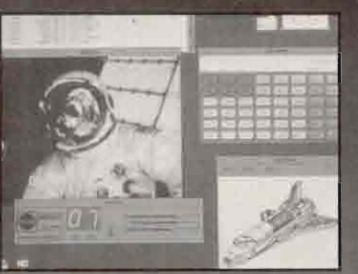

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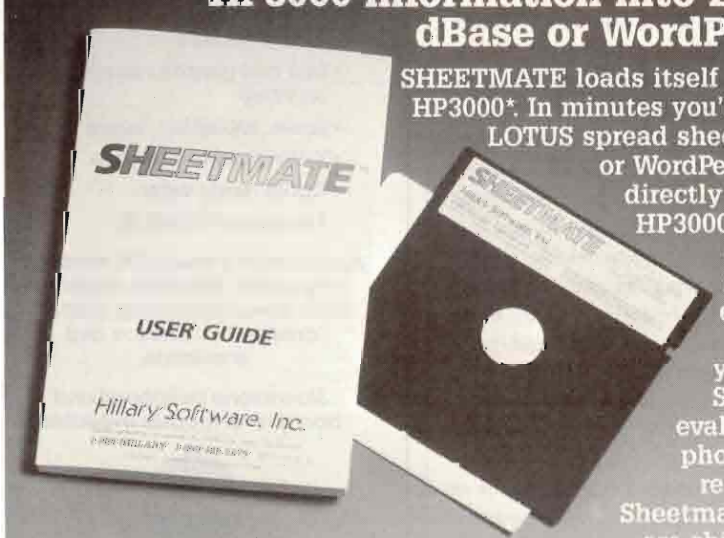

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creation, tangency options and a trim command.

Decade-UX is currently supported on 10 UNIX-based hardware platforms including all RISC workstations. The software interfaces with Oracle, Informix and Allbase SQL. Contact Cadshare Resources Inc., P.O. Box 11859, Charlotte, NC 28220; (800) 633-7644.

Circle 395 on reader card

EpochBackup Automates UNIX Network Backup

Epoch Systems introduced EpochBackup, a network backup solution bringing mainframe-class backup capabilities to UNIX network environments.

EpochBackup automatically backs up and restores files located throughout the network on heterogeneous UNIX workstations and servers to an Epoch data server. EpochBackup makes "lights-out" operations such as unattended backups, recoveries and management possible. EpochBackup also enables automatic error recovery.

EpochBackup provides tools and templates for automatic scheduling, allowing network managers to create rotating workstation backup schedules that occur automatically throughout the week.

The software features volume management tools for controlling tape and optical disk libraries. It also provides reporting capabilities including log files, backup completion/failures, missing backups, media utilization, user recoveries and audit trails.

EpochBackup pricing starts at $5,000. Contact Epoch Systems Inc., 8 Technology Drive, Westborough, MA 01581; (508) 836-4300.

Circle 390 on reader card

StatSci Enhances S-PLUS For HP 700 And 800 Workstations

Statistical Sciences Inc. (StatSci) announced S-PLUS Version 3.0, a statistical analysis software package for HP 9000/700 and 800 workstations.

S-PLUS Version 3.0 includes exploratory data analysis featuring interactive graphics, built-in classical and advanced statistics functions, and an object-oriented modeling capability. The exploratory data analysis capabilities allow users to "analyze-view-reanalyze-review" their data and results.

New statistical functions added to S-PLUS include classical and modern techniques.

These additions include balanced and unbalanced ANOVA, linear models, generalized linear models, generalized additive models, local regression models (loess), tree-based models, nonlinear models, stepwise regression and survival analysis.

The S-PLUS language, similar in syntax to C, is also interactive and supports an object-oriented modeling environment.

Contact Statistical Sciences Inc., 1700 Westlake Ave. N., Ste. 500, Seattle, WA 98109; (206) 283-8802.

Circle 389 on reader card

CPLEX 2.0 Adds New Features To Solvers And Libraries

CPLEX Optimization Inc. announced a new upgrade of all CPLEX products: CPLEX Linear Optimizer 2.0, CPLEX Mixed Integer Optimizer 2.0, CPLEX Callable Library 2.0, and CPLEX Mixed Integer Library 2.0.

The addition of dual simplex and network optimizer options improves performance, and new input and output options in CPLEX 2.0 products improve integration ease.

CPLEX 2.0 is available in two forms: as executable applications (CPLEX Linear Optimizer 2.0 and CPLEX Mixed Integer Optimizer 2.0) and as sets of callable routines that can be readily integrated into user-written applications (CPLEX Callable Library 2.0 and Mixed Integer Library 2.0).

CPLEX 2.0 is available for most UNIX workstations from HP, Sun, DEC, IBM and Data General.

Contact CPLEX Optimization Inc., Suite 279, 930 Tahoe Blvd., Building 802, Incline Village, NV 89451; (702) 831-7744.

Circle 392 on reader card

MPEAMS Reports HP 3000 Security Provisions

Common Soft introduced the MPE Account Management System (MPEAMS), a menu-driven information system designed to provide MIS and system managers with data needed to manage HP 3000 computing environments.

The MPEAMS reports security provisions for all or selected accounts or groups, or just those that are opened, semi-opened, or closed to outsiders. MPEAMS reports the capability setup for all or selected accounts, groups or users, especially those having the SM, AM, OP or PM capability. MPEAMS also reports all UDC files for all or selected accounts or users, report the disk space usage for all or selected accounts or groups, displaying the results in both sectors and megabytes with subtotals and percentages against the overall system and account usage percentage.

The price for MPEAMS is $995 for the first HP 3000 CPU and $595 on each additional CPU.

Contact Common Soft, 1741 Marigold Court, San Jose, CA 95133; (408) 729-9565.

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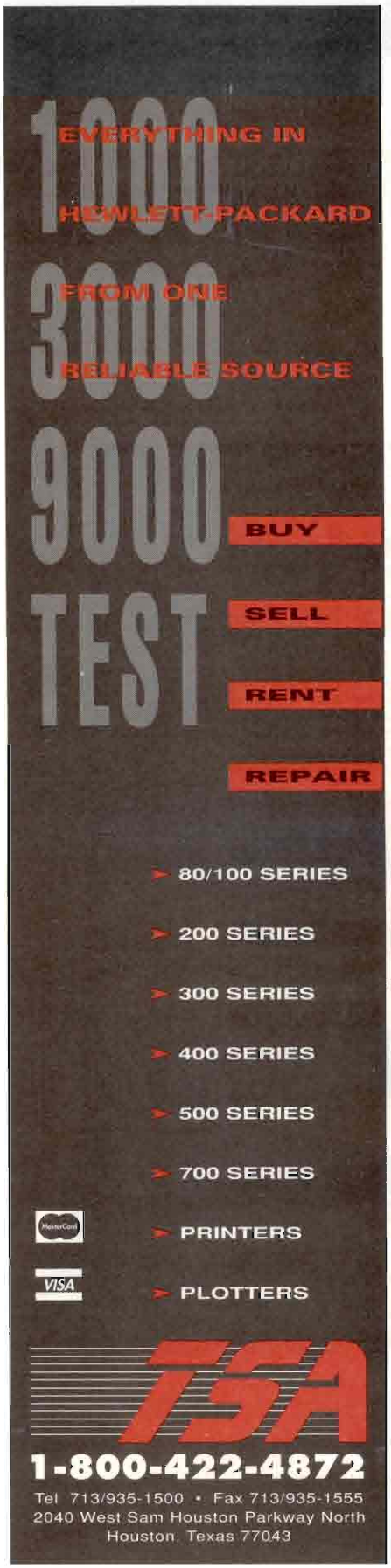
CIRCLE 452 ON READER CARD



CIRCLE 137 ON READER CARD

SPCS Provides Manufacturing Quality Control Method

Arens Applied Electromagnetics Inc. announced SPCS, a statistical process control system providing a quality control method for manufacturing.

SPCS collects measurement data, does all necessary statistical process control calculations and draws SPC charts for such items as averages, ranges, standard deviation and histograms. Data can be collected, processed and drawn for up to 18 different user-defined measurement specification items. SPCS calculates averages, UCL, LCL and standard deviation. Sample sizes and histogram cells are user controlled, and all calculations are made in a single pass.

SPCS has a Q&A interface. The user can specify a title line, two subtitle lines, X and Y axes titles, the maximum and minimum limits and more. SPCS supports all HP plotters, the HP LaserJet II and III, PaintJet and DeskJet printers, HP graphics terminals and PCs emulating graphics terminals.

Price ranges between $2,000 and $7,500 as a standalone system.

Contact Arens Applied Electromagnetics Inc., P.O. Box 329, Gaithersburg, MD 20884; (301) 258-0970.

Circle 383 on reader card

Quick Restore Provides UNIX Network Backup And Restore

Workstation Solutions Inc. introduced Quick Restore, a network backup and restore program. Quick Restore uses a client-server model plus a special device driver that exploits the direct-to-block positioning capability of Exabyte tape drives.

Quick Restore accesses both local and remote filesystems and tape drives from any point on the network without requiring the presence of NFS, supporting backup and restore operations for any combination of local or remote files with local or remote tape drives. Quick Restore uses online catalogs to maintain critical information such as backup histories, volume IDs and the exact position of backed up files on a tape. Backup description files specify the exact collection of files for a backup, allowing a system administrator to select backup data down to the level of individual files, including support for using standard UNIX wildcard characters to identify file exclusions. Quick Restore does full backups and ten levels of incrementals.

Quick Restore runs on the HP 9000/700 Series, Sun SPARC Systems and the IBM RS/6000 Series. Price is $1,995.

Contact Workstation Solutions Inc., 15 Trafalgar Square, Nashua, NH 03063; (603) 880-0080.

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Unison Software Combines SpoolMate And Lasersoft

Unison Software announced the integration of SpoolMate with Lasersoft, providing ease of implementation, control and maintenance of electronic forms and report formatting applications.

SpoolMate is a spoolfile management and report distribution solution for the HP 3000. Lasersoft is an electronic forms generation package providing the flexibility to create and change forms in-house. The integration of these two products allows SpoolMate to automatically control how output is printed without changing the existing programs, job stream or user procedures. A single output spool file may be processed in a variety of ways by instructing SpoolMate to use different "electronic stationery."

Contact Unison Software, 675 Almanor Ave., Sunnyvale, CA 94086; (408) 245-3000.

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Tektronix Offers Network X Terminal Technology

Tektronix Inc. announced a family of next generation terminals designed around RISC-based X-server technology.

Designed for technical and engineering use, the TekXpress XP330 Series targets users running design automation (CAD, CAM, CIM, EDA), earth resources (GIS), automated mapping/facilities management, process control and data analysis applications. The XP330 Series features dual processor architecture, combining industry-standard MIPs R3000 RISC and TI's graphics chipsets.

Tek's XP330 Series includes a family of four X terminals, all with large-sized monitors and resolution at a 72 MHz refresh rate. All models include 5 MB of memory, expandable to 52 MB with industry-standard SIMMs, 256 KB of ROM and a three-button mouse.

Prices for the XP330 Series range from $3,495 to $5,995.

Contact Tektronix Inc., Wilsonville Industrial Park, P.O. Box 1000, Wilsonville, OR 97070; (503) 685-2840.

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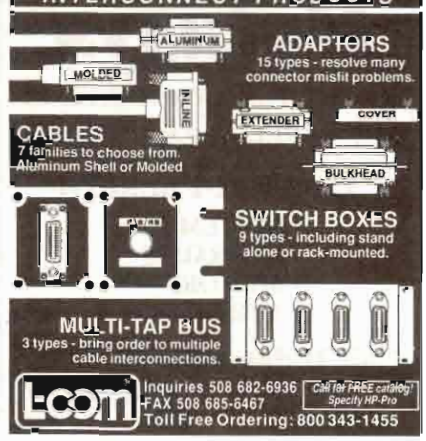

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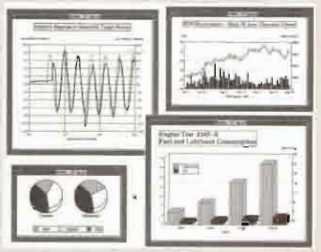

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June	
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July	
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August	
Hermes Softlab	PADEMU
DSP Development	DADiSP
September	
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November	
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Missing The Point

One of the latest information systems management fads/techniques is "organizational benchmarking," otherwise known as the blind leading the blind. Apparently, having concluded that neither they nor their customers can figure out what to do on their own, consultants are pulling in big bucks telling companies what their competitors are doing with their IS strategies. As if anyone really knows.

To me, benchmarking is the equivalent of watching another climber make an ascent up a different rock face. Some valuable technique may be learned, but copying the other guy's every move will get you killed. You can only climb where you've got handholds, and if you're climbing a different rock, you can't play follow-the-leader.

Among our favorite benchmarking targets are Japanese companies, euphemistically and vicariously known as "global competition" and "first-in-class competition." Concerned as we are that Japan Inc. is kicking our butts in quality and productivity, Japanalysis is becoming an American preoccupation. I think it's a waste of time. I'd rather see the energy and money spent on analyzing what we're doing over here.

I just saw one American company's benchmark study that revealed that a feared Japanese competitor uses fewer computer systems, employs fewer computer jockeys, and writes less code than they do. They also have a more centralized organization. This made the Americans go hmmm, and immediately conclude that they ought to do some centralizing to get more efficient. We'll see if it works. I think they're climbing the wrong mountain.

I don't see a direct cause-and-effect relationship between centralization and efficiency. Centralization can produce some economies of scale, but it also can stifle creative thinking under an immovable blanket of bureaucracy. If we find that Japanese accountants use abacuses to count their beans, should we throw out our calculators? It's also likely that the Japanese company uses Japanese computers, and probably mainframes at that. Does that mean we should use Japanese mainframes to be more efficient?

Pointing to a competitor's IS organization as the cause of efficiencies misses the whole point.

The problem is that benchmarks are often reduced to little more than management sound-bites. A six month study culminates in a week-long management field trip to Japan, a two-page memo and a one-page action plan. Unfortunately, the benchmark observations are only useful to the degree that we understand the underlying processes, too. If we miss those, we miss the boat.

I don't know if Japanese IS works better than American IS, but I doubt it. If centralized IS works, it's because a centralized structure supports the way they gather and use information to run their business, not because the centralized structure is inherently better. A stupid organization will have stupid computer systems, regardless of whether they are centralized or decentralized.

Pointing to a competitor's IS organization as the cause of efficiencies misses the whole point. Before tackling organizational issues, we have to look at the information flow we're trying to support.

Computer systems and IS organizations have to fit the business they support, not some mythical one-size-fits-all template. If reorganizing really improved our systems, we wouldn't be flip-flopping on organizational philosophy every five years, would we? The problem is that we haven't figured out how to link our computer systems and our business processes. Organization should only be a secondary concern.

Obviously, we can't ignore organizational problems, but it's more important to look within ourselves for the real answers. Understanding what our competitors are doing is much less important than understanding what we are trying to accomplish and measuring our business practices against those goals. If you think through your objectives, decide on the information you need to meet those objectives, and *then* worry about the systems you need to supply the information you need, you can't go wrong.

This approach is known as process (re) engineering and it works nicely. The trouble is, it's difficult to do because it takes a lot of work and requires fundamental changes. It's easier to go for the sound-bites, and hope you can find the magic organizational bullet that will make those tough problems disappear.

If you still insist on benchmarking against the Japanese, my own theory is that their success is attributable to 12-hour work days, followed by hard nights of karaoke-singing, commode-hugging drunkenness. If enforced workaholism followed by frantic partying works for our first-in-class global competition, it ought to work for us, right? Who knows? With the increasing popularity of karaoke nights in our local saloons, maybe this is already shaping the next management fad.

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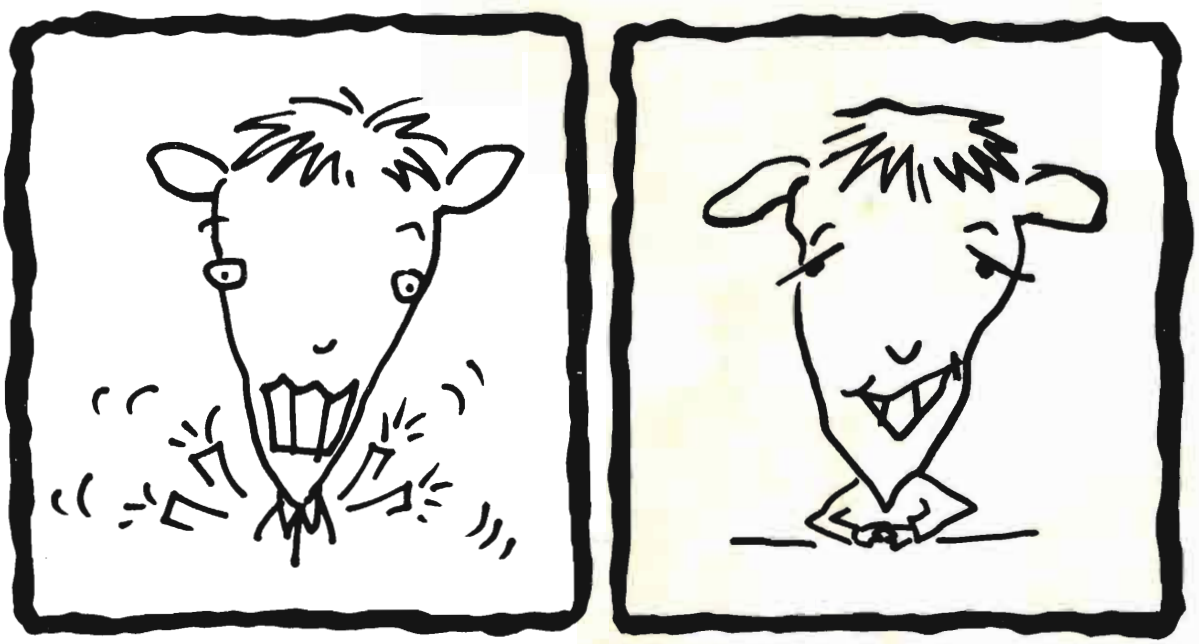

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