

HP Professional

THE MAGAZINE FOR HEWLETT-PACKARD ENTERPRISE COMPUTING ▸ VOL. 7 NO. 5

MAY 1993

SOFTWARE PRODUCTIVITY

**IS THERE LIGHT
AT THE END OF
THE DEVELOPMENT
TUNNEL?**

FRONT-END COLLISION?

**Break The GUI
Gridlock With User
Interface Design Tools**

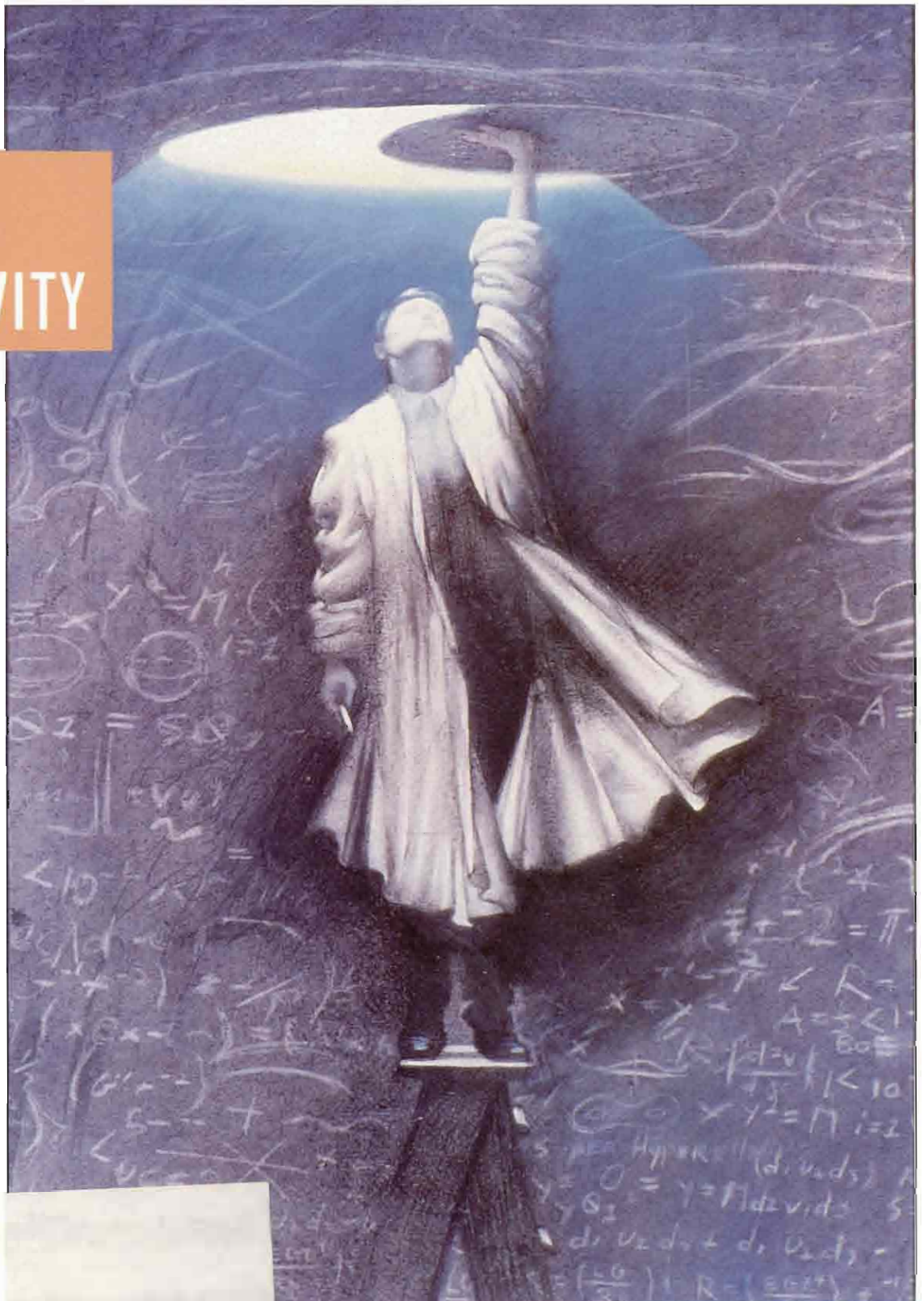
INDUSTRY WATCH

**Large HP 3000
Shops Mix It Up
With HP-UX**

DP LABS:

**Persoft's Remote Hub
Goes The Distance**

**Client-Server IMAGE
Access With VISIMAGE**



The Promise Of Object-Oriented Development Environments

Just what the doctor ordered!

and the government...and the universities...and the telecommunications companies ...and the aerospace industry ...and the banks...and ...



Online Data Center

1/4" Tape Backup Subsystem

8mm DAT Subsystem

External 5.25" Expansion Single Slot

4mm DAT Subsystem

2-slot 5.25" Desktop Removable DataVault

CD-ROM Subsystem

3.5" Desktop Removable Drive


External 3.5" Expansion

3-slot 3.5" Desktop Removable DataVault

External 5.25" Expansion Dual Slot

4-slot 5.25" Desktop Removable DataVault

Internal 3.5" Expansion

 **Seagate**

From Artecon

That's right. We've brought our considerable expertise, quality, and reliability in building and integrating value added enhancements into the HP, IBM, and SGI market places.

This is complemented by the reputation we have earned over the last nine years as being the best in the business in the Sun Workstation world.

From high end, high availability removable subsystems to disc, tape, and memory - we have it all!

Artecon uses quality Seagate 525MB-2.9GB hard disc drives, in an impressive variety of value added products. Seagate is one of the leading manufacturers of hard disc drives in the world.

All of our products come with all of our unique value adds. Like a one year onsite warranty - free of charge. Plus our GUI software products, DiskTool and DumpTool bundled with every subsystem we ship.

And of course, the quality and reliability that we are known for. At competitive prices, as always.

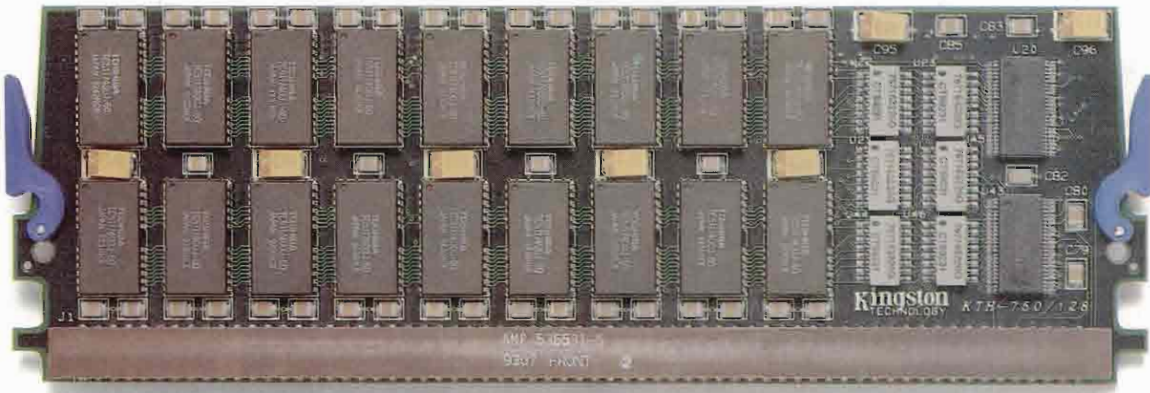
So if you are expanding your HP, IBM or SGI workstation and you want the comfort of working with the best, call Artecon. We've got the right prescription for you.

Call 1-800-USA-ARTE
(1-800-872-2763)



2460 IMPALA DRIVE, CARLSBAD, CA 92008-7236
(619) 931-5500 FAX (619) 931-5527
email: sales@artecon.seagate.com
A Member of the Nordic Group of Companies

Artecon and the Artecon logo are registered trademarks of Artecon, Inc. Seagate and the Seagate logo are registered trademarks of Seagate Technology. All other trademarks and registered trademarks are proprietary to their respective manufacturers. Artecon, Inc. operates under a policy of Equal Employment Opportunity and is in compliance with Executive Order #11246 as amended.



Now Shipping!

HP/Apollo Series 9000 Model 750, 755 Memory

KTH 750/128
32, 64, 128MB

The HP Memory To Remember



**Hewlett-Packard
Memory Enhancements**

Kingston's HP and HP/Apollo memory enhancements lead the industry in competitive pricing, reliability, compatibility, selection and availability. Our workstation memory is backed by a lifetime warranty and free, comprehensive technical support. With Kingston HP and HP/Apollo compatible memory upgrades, you may spend less, but you truly get more.

Guaranteed Compatibility

As a Hewlett-Packard Channel Partner, we guarantee absolute compatibility of our memory upgrades with HP and HP/Apollo systems. We test every memory upgrade with HP's own system diagnostics and



operating system. Our memory upgrades are so compatible that Hewlett-Packard itself is a regular customer!

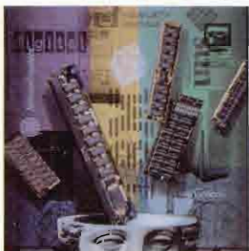
HP/Apollo Memory	
HP 3000 Business Systems 900 Series	16MB, 32MB and 64MB kits
HP/Apollo 9000 400 Series	4MB, 8MB, 16MB and 32MB kits
HP/Apollo 9000 700/RXstations	1MB, 2MB, 4MB and 8MB modules
HP/Apollo 9000 700 Series	8MB, 16MB, 32MB, 64MB and 128MB kits
HP 9000 Business Servers 800 Series	16MB, 32MB, 64MB and 128MB kits

Kingston has a full line of memory and storage upgrades for most popular HP and HP/Apollo workstations. With new products being announced every week at Kingston, give us a call for our latest offerings.

100% Testing, 100% Reliability

We've built our business around one concept—reliability.

Our technicians test each and every product before it's shipped. We back them with a lifetime warranty and free, comprehensive technical support. It's reliability that makes Kingston the inside name in upgrades.



For More Information

Call our workstation memory experts at **(800) 835-2545** or



(516) 673-6300 (East coast office). We'll be happy to answer any questions you have

about our memory upgrades for Hewlett-Packard, Data General, Digital Equipment, IBM, NeXT, Silicon Graphics, Solbourne, Sun and other popular workstation manufacturers.

Kingston Makes Memory For Workstations From These Manufacturers:

- HP
- IBM
- Data General
- NeXT
- Digital Equipment
- Silicon Graphics
- Sun
- Solbourne



THE INSIDE NAME IN UPGRADES

17600 Newbope Street, Fountain Valley, California 92708 (800) 835-2545 (714) 435-2667 Fax (714) 435-2618

CIRCLE 281 ON READER CARD

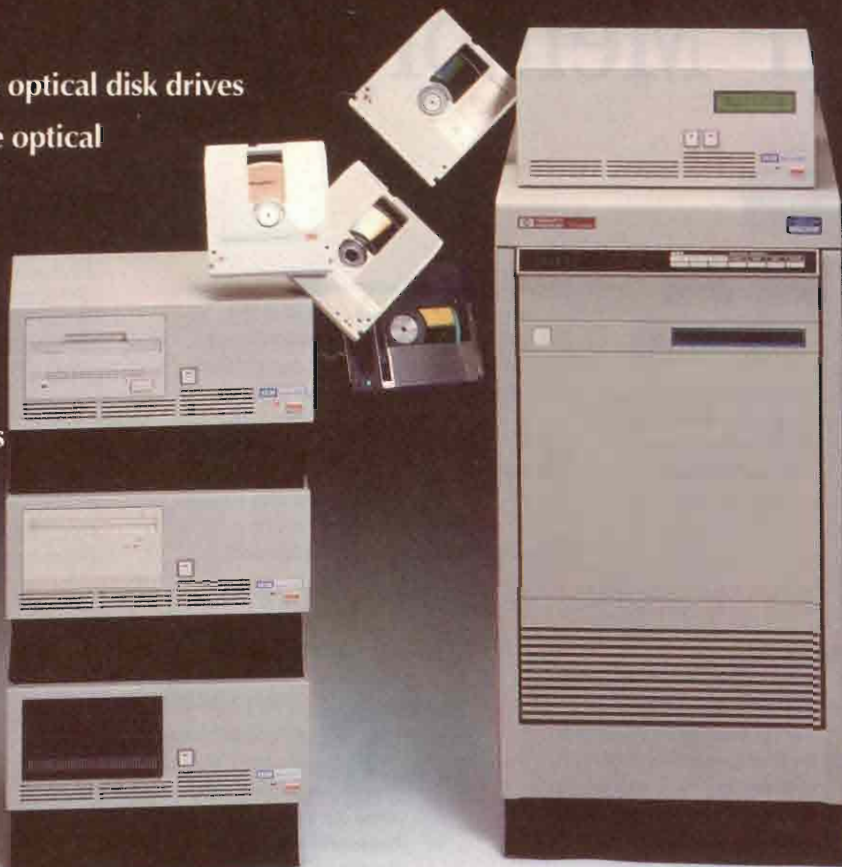


Opticals by IEM

Clearly a wise
investment.

Fast, reliable, high capacity storage: the perfect fit
for HP 1000, 3000 and 9000 SCSI and HP-IB computers.

- Rewritable optical disk drives
- Write-once optical disk drives
- Library Systems and Library System Controllers



One Source, Many Solutions

IEM is the manufacturer of the largest line of HP third-party peripherals.

*In the U.S.
and
Canada:*

IEM, Inc., P.O. Box 1889
Fort Collins, CO 80522 USA
Phone: (1) 303-221-3005
(1) 800-321-4671
Fax: (1) 303-221-1909

*In the
United
Kingdom:*

IEM Europe, Colorado House,
Cromwell Park, Banbury Road,
Chipping Norton, Oxfordshire. OX7 5SR.
Phone: +[44] 0608 645000
Fax: +[44] 0608 645155

*All
others:*

IEM International Sales
1629 Bltte Spruce Drive
Fort Collins, CO 80524
Phone: (1) 303-221-3005
Fax: (1) 303-221-1909

20 IS IT OOP YET?*By Bill Sharp*

Object-oriented development environments promise new levels of software productivity — bringing users closer to the nirvana that object-oriented computing represents. So far, however, few early adopters are talking about results, and most users are literally shunning the light of public recognition.

28 BEYOND THE GUI GRIDLOCK*By Paula Jacobs*

User interface design tools and user interface management systems help software developers survive the trials of creating and porting GUI-based applications. As the GUI builder market becomes saturated with new vendors and products, there's sure to be a size and shape for every application development task. The trick is to choose the tool most suitable to your development environment.

C O L U M N S / D E P A R T M E N T S**Networking: Tomorrow's Network***By Tim Cahoon*

100Base.VG Networking Standard Opens Doors Without Closing Old Ones **50**

Objectively Speaking: State Inspection*By Richard Riehle*

Object States Let You Map Software Abstractions To Real-World Entities **52**

Managing Your HP 3000: Who's Supporting Whom?*By John P. Burke*

MPE V Release 30 and IMAGE/SQL Are Strategic Enhancements — For HP **56**

And Another Thing: On Burrowed Time*By Gordon McLachlan*

Even When You've Found A Cozy Hole To Hide In, You Have To Be Prepared To Move Around **72**

Editorial **8****Industry Watch** **10****New Products** **60****Advertiser Information** **65****Product Showcase** **68****Career Opportunities** **70****Software Directory** **70****Advertiser Index** **71****R E V I E W S****A Bridge Too Far?***By Marty Levine*

Persoft's Intersect Remote Bridge Provides 2 Mbps Wireless LAN Connections At Distances Of Up To 3 Miles **38**

More Than A Pretty Face*By John P. Burke*

VITAL Soft's VISIMAGE Transforms A User-Friendly PC Interface And Host-Based Report Writer Into A Client-Server Data Access Tool **44**

PRODUCT WATCH:**Quick Questions**

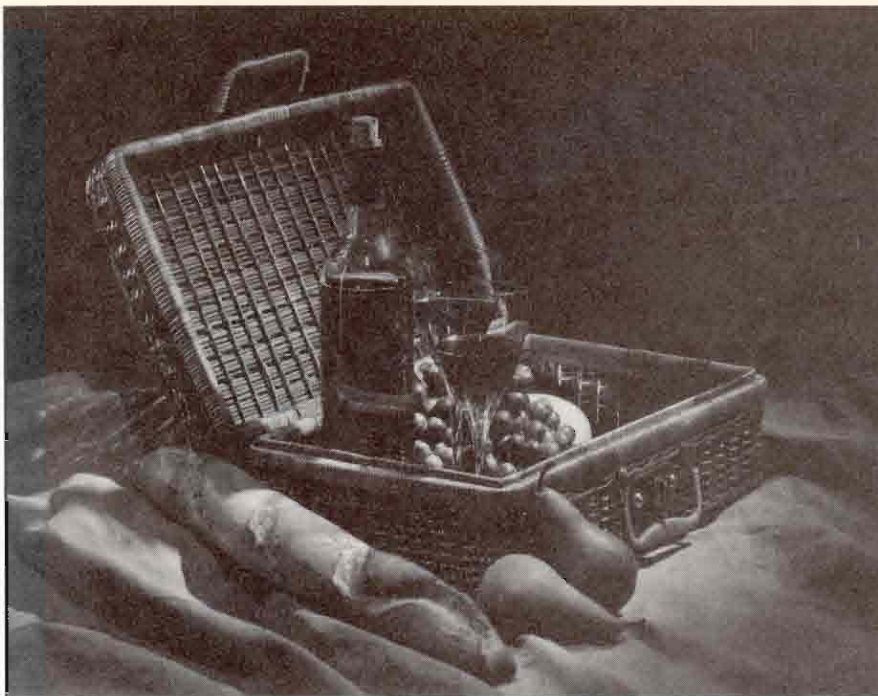
Cognos' Impromptu **14**

Managed Competition

Tivoli's Management Environment **16**

STRATEGIC DIRECTIONS:**An Inside Source**

Sotas International. **18**



EVEN WHEN YOU HAVE ALL THE ELEMENTS, YOU'RE STILL AT THE MERCY OF THE ELEMENTS.

Even when you've found the perfect pears and perfect wine, there's still the possibility that it's going to rain on your picnic.

At WTW, we're helping a number of businesses overcome the same kind of problem through information technology consulting. Our services include Systems Integration, Project Management, Custom Programming, Rightsizing, and Information Technology Strategic Planning.

Choosing the right systems integrator, of course, is no picnic. So, before you run the risk of a costly mistake, give us a call. Perhaps we can keep you from getting soaked.



**WESSON, TAYLOR, WELLS
& ASSOCIATES, INC.**

P.O. Box 23587 • Columbia, SC 29224 • 1-800-833-2891
Offices In: San Francisco, Valley Forge, Raleigh, Charlotte, Atlanta

CIRCLE 180 ON READER CARD

UNIX is a registered trademark of AT&T in the U.S.A. and in other countries.

MS-DOS is a trademark of Microsoft.

Macintosh is a trademark of Apple Computer Inc.

X Window System is a trademark of MIT.

Microsoft is a registered trademark of Microsoft Corp.

NewWave is a trademark of Hewlett-Packard Co.

HP Professional

EDITOR-IN-CHIEF Donald R. Marks
ASSOCIATE EDITOR Andrea J. Zawod
TECHNICAL EDITOR Bill Sturp
CONTRIBUTING EDITOR Gordon McLachlan
APOLLO EDITOR Fred Mallett
HP 3000 EDITOR John P. Burke
INTERNATIONAL EDITOR Marsha Johnston
NETWORKING EDITOR Tim Cahoon
PC/UNIX EDITOR Miles B. Kehoe
SOFTWARE ENGINEERING EDITOR Richard Rieble
EDITORIAL COORDINATOR Connie Gebbia
EDITORIAL ASSISTANT Stephen G. McDowell
CONTRIBUTORS Lynn Haber, Paula Jacobs, Marty Levine, Charlie Simpson, Lonni Wright

DP LABORATORY AND TESTING CENTER

MANAGER David B. Miller
ASSISTANT LAB MANAGER Anue Schrauger
REVIEW EDITORS John P. Burke, Tony Florito, Miles B. Kehoe, Michele Petrovsky, Barry Sobel

DESIGN & PRODUCTION

ART DIRECTOR Al Feuerstein
PRODUCTION MANAGER Jean Lait
DESIGN/PRODUCTION ASSISTANT Jack Rotoli
PRODUCTION COORDINATOR Teri Campbell

CIRCULATION

DIRECTOR OF DATABASE SERVICES Marjorie Pitrone
DATABASE MANAGER Phyllis Chandler

MARKETING

PROMOTIONS ART DIRECTOR Timothy M. Kraft
PROMOTIONS WRITERS Craig T. Kelly, Ronald Sklar
GRAPHIC DESIGNERS Mike Cousart, Thomas Owen

PUBLISHER Leslie Ringe

CARDINAL BUSINESS MEDIA, INC.

PRESIDENT AND CHIEF EXECUTIVE OFFICER:
Robert N. Boucher
CHIEF FINANCIAL OFFICER *Thomas C. Breslin*
EXECUTIVE DESIGN DIRECTOR *Leslie A. Canoso*
CIRCULATION DIRECTOR *Henry B. Lawrence*
HUMAN RESOURCE MANAGER *Mary Steigenwalt*
EXECUTIVE CONSULTANT *Carl B. Marbach*

For more information on how to contact your sales representative, see page 71. For subscription information and address changes, call (215) 957-4269. Editorial, advertising sales and executive offices at 101 Witmer Rd., Horsham, PA 19044 ■ (215) 957-1500 Corporate FAX (215) 957-1050. To reach staff listed on masthead via UUNET, send MAIL to: LAST NAME@procast.propress.com

HP PROFESSIONAL ISSN 0896-145X is published monthly by Cardinal Business Media Inc., 101 Witmer Rd., Horsham, PA 19044. Subscriptions are complimentary for qualified U.S. and Canadian sites. Single copy price, including postage \$4. One year subscription rate: \$30 U.S. and Canada; \$60 foreign. All orders must be prepaid. For reprints, contact Reprint Management Services, 505 E. Airport Rd., Lancaster, PA 17601; (717) 560-2001, Fax (717) 560-2023. Second Class postage paid at Horsham, PA 19044, and additional mailing offices. POSTMASTER: Send all correspondence and address changes to HP PROFESSIONAL, P.O. 616, 101 Witmer Rd., Horsham, PA 19044. COPYRIGHT © 1993 by Cardinal Business Media Inc. All rights reserved. No part of this publication may be reproduced in any form without written permission from the publisher. All submitted manuscripts, photographs and/or artwork are sent to HP PROFESSIONAL, Inc. at the sole risk of the sender. Neither Cardinal Business Media, Inc. nor HP PROFESSIONAL magazine is responsible for any loss or damage. HP PROFESSIONAL is an independent journal not affiliated with Hewlett-Packard Company. HP and Hewlett-Packard are registered trademarks and HP PROFESSIONAL is a trademark of Hewlett-Packard Company.

Printed in U.S.A.

V BPA ABP

THE FASTEST WAY TO PUT 25 GB ON A SINGLE TAPE.



The CY-8500 can store up to 25 GB on a single tape, at speeds of up to 90 MB per minute, completely unattended.

How? With hardware data compression that can boost capacity by up to five times.

No other 8mm tape drive can match the capacity, speed, and price-performance of this best-selling drive.

ADVANCED. You'll never be left in the dark. A bright, backlit status display gives you the command under execution, transfer rate, compression ratio, amount of tape remaining and more.

Our *data compression* option is the fastest available. And it's switch selectable, so you can still read and write standard tapes. Locate and restore files quickly and easily with our *accelerated file access* option. Add *data encryption* to control backup and restore operations through the use of encoded card keys.

FLEXIBLE. The CY-8500 is plug compatible with virtually every computer system. Rack mounting options, dual drive configurations and a variety of cable lengths ensure a seamless fit into your computing environment. And as storage needs grow, you can upgrade to our ten tape library, capable of managing between 25 GB and 250 GB—all without manual intervention.

RELIABLE. A sophisticated Error Correction Code yields a bit error rate of less than one in 10^{17} —the best in the industry. A MTBF rate of 60,000 hours ensures reliability.

Each turnkey subsystem features a 12-month warranty that includes technical support from our experienced in-house engineering group.

Everything you want in a backup subsystem is available right now.

Call today for information at
(804) 873-9000


CIRCLE 112 ON READER CARD

TRUE PLUG COMPATIBILITY

Affiant	Motorola
Alpha Micro	NCR
Aitos	NeXT
Apollo	Novell
Arnx	OS/2
AT&T	PS/2
Basic-4	Parallel
Concurrent	Port
Convergent	PC 386/ix
DataGeneral	PC MS-DOS
DEC SCSI	PC Xenix/
DEC BI-Bus	Unix
DEC DSSI	Pertec
DEC HSC	PICK
DEC Q-Bus	Plexus
DEC TU/TA81	Prime
DEC Unibus	Pyramid
Gould/Encore	Sequent
HP	Silicon
IBM AS/400	Graphics
IBM Mainframe	STC
IBM RISC/6000	Stratus
IBM RT	Sun
IBM S/38	Texas
ICL	Instruments
Intergraph	Unisys
Macintosh	Ultimate
McDonnell	Wang
Douglas	and more

CONTEMPORARY
CYBERNETICS

Rock Landing Corporate Center • 11846 Rock Landing
Newport News, Virginia 23606 • Fax (804) 873-8630



What makes *Mary Kay*® developers look great? It's not cosmetics. It's *Cognos*® application development tools.

According to Fran Hagerty, Director of Systems Engineering at *Mary Kay*, "Our success depends on rapidly building applications that will be flexible to change as our business needs change—UNIX,

INFORMATION ACCESS HELPS YOU
SAVE TIME, MONEY AND FACE.

Mary Kay wanted to analyze their corporate sales and manage their inventory better. So they turned to the best client-server EIS tool around, *Cognos PowerPlay*®. It will let *Mary Kay* quickly access and interpret information such

We Taught *Mary Kay* A Thing Or Two Cosmetic Appli

client-server... We didn't want to be locked in; we needed portability."

When *Mary Kay* downsized from their mainframe, *Cognos* tools gave them that flexibility. They could choose the most appropriate new operating system, and quickly build their critical applications. So applications developed with *Cognos* products not only help *Mary Kay* grow, they have the power to grow right along with them.

as sales by region, territory, or individual salesperson. And it's displayed with color charts and graphics as vibrant as *Mary Kay* Cosmetics' own products. A tool this powerful and easy to use leaves less room for error, more room for smart business decisions.

CLIENT-SERVER DEVELOPMENT MAKES
YOUR BOTTOM LINE LOOK BETTER.

When a sales force of more than

225,000 independent beauty consultants has the company's reputation in their hands, you want to use the best tools available to support them. That's why Mary Kay application developers chose Cognos. A tool like Cognos PowerHouse® Windows will let them quickly create graphical client-server applica-

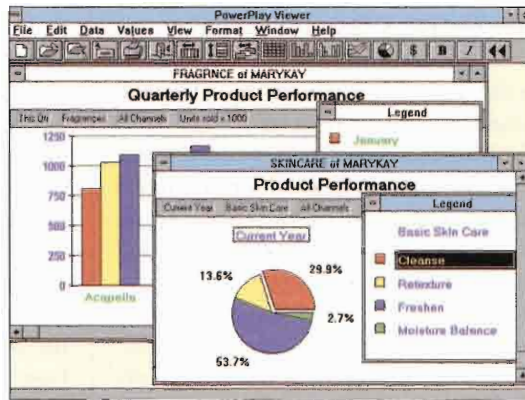
Mary Kay® About cation.

tions to track compensation and awards for these consultants. These applications exploit Microsoft Windows technology. And graphics like radio buttons, check boxes, hot spots and full-color photos are sure to make any bottom line more attractive. On-screen or off.

Find out more about the application development tools that keep Mary Kay developers sitting pretty. Not to



PowerHouse Windows™ is a graphical client-server version of our powerful and easy-to-use PowerHouse 4GL.™



PowerPlay provides client-server analysis and reporting.

mention 30,000 other customers. Just give us a call at 1-800-4 COGNOS or (617) 229-6600, ext. 81. In Canada, call 1-800-361-3163.

You don't even have to be in make-up.



CIRCLE 117 ON READER CARD

all major commercial UNIX and midrange platforms. Mary Kay is a registered trademark of Mary Kay Cosmetic, Inc. All others are the property of their respective trademark holder.

Time To End The Time Squeeze?



By Don Marks



“In the last twenty years the amount of time Americans have spent at their jobs has risen steadily....Hours are already longer than they were forty years ago. If present trends continue, by the end of the century Americans will be spending as much time at their jobs as they did back in the nineteen twenties.”—Juliet B. Schor, *The Overworked American: The Unexpected Decline Of Leisure*, Basic Books, 1992.

We’ve all seen it. In every imaginable organization, from the big, baggy IBMs to lean, mean consulting outfits, people are being asked to do more with less, to shoulder additional responsibilities and — above all — to avoid hiring extra help. It’s probably still too early to tell if what we’re living through is a difficult re-adjustment to a more efficient way of doing business, or just a rationalization for continued staff reductions — and, hence, healthier productivity ratios. Whatever the case, “reductions in force” are taking their toll everywhere — especially in the MIS department.

Despite the optimistic prognostications of “business process re-engineering” gurus, the alchemical combination of a thin staff, tight budget and Microsoft Windows will not magically improve productivity. In fact, if corporations continue to sacrifice manpower and investment in return for short-term cost-savings, the end-result of our present re-engineering efforts will be at best a disappointment, at worst a tragic fiasco. Without adequate capitalization, many quality products and services will be lost, promising careers abbreviated and valuable organizations depleted of their best and brightest personnel.

Downsizing’s Double-Bind

Even as the corporate euphemism brigades concentrate on “reducing direct labor involvement,” companies are simultaneously making profound, strategic changes to their information infrastructures. Unfortunately, the people left making these decisions are too often the demoralized remnants of a once thriving MIS department, now forced to labor under extreme time and resource constraints.

Ironically, downsized MIS organizations that previously pursued greater vendor independence through open systems are now finding themselves caught in a double-bind. Without the necessary resources to design and manage supposedly lower cost distributed information systems, these prodigal customers are

returning to hardware vendors for additional consulting, packaged solutions and system integration advice. But to the customers’ chagrin, the vendors, too, have changed with the times.

With profit margins wrung dry from commodity-style open systems pricing, most larger system vendors, HP included, have divided their energies between low-overhead volume sales — shipping maximum silicon at minimum cost — and high-priced, high-margin professional services. HP, in effort to streamline its own organization, has dramatically reduced its direct sales force and set parsimonious limits on the kinds and amounts of free, pre-sales consulting it provides. Customers, large or small, now get what they pay for — precisely — and little more.

From Science To Cynicism

Once upon a time, the stereotype of the information technology manager was the lab-coated computer scientist — hermetically sealed behind the glass walls of a futuristic computer room, assiduously noting the status of blinking lights across the control panel of a vast, inscrutable electronic brain. He was the epitome of corporate power in the optimistic, labor-saving Information Age.

Today the emerging image of the IT professional is that of the beleaguered network manager in rumpled casual clothes, bags below his eyes from pulling all-nighters, plunked down in a crowded corporate cubical amid incompatible cables, hubs, routers, muxes, pizza boxes, etc. — and surrounded by irate users. He’s the epitome of the time-strapped worker-bee in our cynical, stressed-out Open Systems Era.

Doubtless, we in corporate America will continue to muddle through our downsizing phase. And in all likelihood, we’ll continue to increase the number of hours we work, even as the pace of office automation and technological change accelerate. But let’s at least be honest about one thing: For many, this will not be a pleasant or desirable course.

Juliet B. Schor, whose telling book, *The Overworked American*, I quoted at the outset, notes that even as most employed Americans are working more hours than they have in 40 years, a full 20 percent of our labor force is underemployed, unable to secure enough hours to make ends meet. And, for the first time in history, many of those out of work have extensive computer skills and high-tech experience. Meanwhile, crippled MIS departments can’t manage to implement new information systems quickly enough to solve our basic business problems. Perhaps it’s time that corporate America re-examined its priorities.

TURBO-33
HP Series 9000
Accelerator



SERIOUS ACCELERATION

33 Mhz speed for serious applications.

The TURBO-33 is a 33 Mhz accelerator card for Hewlett Packard Series 9000 computers. The card is compatible with the HP 216, 217, 220, 226, 236, 237, 310 and 320 workstations.

Programs run from 6 to over 100 times faster.

Compatible with Basic and Pascal.

The TURBO-33 is designed for the BASIC and PASCAL systems. No modifications are required for user programs.

Innovation from Newport Digital.

TURBO cards are also available at 25 Mhz and 16 Mhz. All the TURBO cards have a five year warranty.

Call Newport Digital for information on these and other innovative products.

TURBO-33 DELIVERS PERFORMANCE!

Computation Type	Speed Increase
Integer Arithmetic	6 to 8
Real Arithmetic	9 to 50
Real Transcendental	32 to 293

NEWPORT DIGITAL

14731 Franklin Avenue, Suite A
Tustin, California 92680
714-730-3644

TURBO 33, TURBO 25 and TURBO 16 are trademarks of Newport Digital Corporation.

CIRCLE 246 ON READER CARD



INDUSTRY WATCH

Bill Sharp

The Big Move

Norb Kubilus wasn't thinking about migrating. It was simply another system transition, the sort that this 10-year veteran of large systems has been through over and over. You determine the organization's business objectives and select the computing system that best meets those objectives. But that transition took his firm from MPE to HP-UX, a journey to open systems and lower costs pondered by increasing numbers of users.

There seem to be three groups of MPE users:

- Those who are now making or are committed to making the move away from MPE and toward open systems.
- Those who expect to gradually move, mixing MPE and UNIX along the way.
- Those who intend to stay on the HP 3000 running MPE.

I readily admit this column is not a scientific sample. I tried to find at least one user in each category, but instead, I found three users moving systems at varying paces toward UNIX.

Kubilus is vice president and chief information officer for BCM Inc., a large environmental consulting firm in Plymouth Meeting, PA. In 1991 BCM was coming to the end of a long relationship with the HP 3000. The company had been using the 3000 and MPE since 1978 and was nearing the expiration of a five-year lease. Like increasing numbers of HP 3000 customers, BCM was deciding whether to stay with the HP 3000, or how to migrate if that was the choice.

"We had made a decision to move to a client-server environment," says Kubilus. "One of the parts of that was the enterprise server, the one box with all the corporate systems for financial,

laboratory, human resources and other key areas. The HP 3000 was not going to be that box. It had a closed operating system, lacked some of the more popular database products, and was incompatible with some database servers on our network."

The cost differentials between HP-UX and MPE/iX provide compelling reasons to begin a change.

BCM compared three RISC-based systems: the HP 3000/947LX running MPE XL, HP 9000/857S running HP-UX and the IBM RS/6000/560 running AIX (IBM's version of UNIX). "All three were roughly the same size and power consumption, and complied with industry standards," says Kubilus. IBM had a slight edge on memory capacity, but the 9000 had almost a 2 to 1 advantage in disk space and supported both LAN Manager X and NetWare, neither of which was supported at the time on the RS/6000, he recalls.

But while the HP 9000 hardware and operating system looked like the choice, applications are typically the deciding factors these days. Moving from MPE V to MPE XL on the 3000 would have reduced porting to a two-week task, but Kubilus also wanted to move from hierarchical to relational database files and avoid being "stuck with HP ALLBASE." In addition, he found several software packages that simply could not be run on MPE, but were available for HP-UX. HP 9000 and HP-UX took the sale, and because of price breaks Kubilus opted for the HP 9000/867.

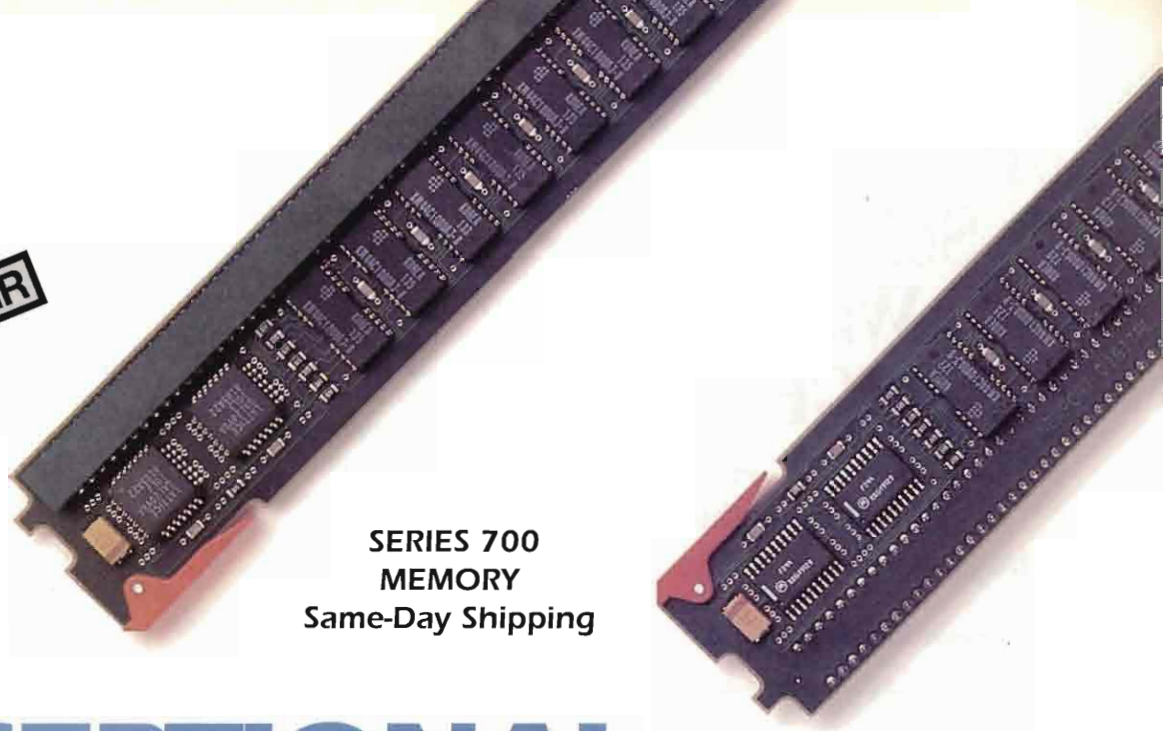
The migration took between six and seven months from planning to completion. Quips Kubilus, "The surprise was that it took only that long — anybody looking for a quick conversion is deluding themselves. It was easier for us as some of the code was written in Powerhouse from Cognos. The toughest part was moving to the relational database structure, mapping across and populating those data structures."

The end result at BCM, according to Kubilus, is "ecstatic" users. He notes that some jobs that used to take six to eight hours now run in 45 minutes. "The machine is fast." On the downside, HP dropped the ball on support for problems with its OpenSpool print spooler, which created some frustrating experiences for users of the new system.

Spalding Slides Into UNIX

But while some firms run quickly through migration, others feel compelled to take a more gradual approach. I first interviewed Bard White more than two years ago, when the MIS director at Spalding Sports Worldwide (Chicopee, MA) expected to stay on MPE—period. Spalding took delivery on one of the first business class HP 3000 systems shipped last year. "I was one of those who said they would stay with MPE and UNIX wouldn't develop, but it continues to grow," says White. "Holding the line against UNIX is foolish. There have been problems with UNIX, but they are being solved, and UNIX costs are down."

UNIX, says White, is not being quickly embraced by U.S. data centers and MIS directors, but he finds the cost differentials between HP-UX and MPE/iX to be compelling reasons to begin a change. "The cost of UNIX is a factor of two to three less." Further, Europe is adopting UNIX at a much more rapid



**SERIES 700
MEMORY**
Same-Day Shipping

EXCEPTIONAL MEMORY

Available now from Newport Digital.

We deliver the quality and service you expect from the leader in HP workstation enhancements. Our complete line of TURBO cards and memory products is ready to ship from stock. Order today. Upgrade your system tomorrow!

Superior quality by design.

Every product we make is rigorously tested and guaranteed to meet or beat HP quality... and each is backed with our unconditional lifetime warranty.

Remarkable value guaranteed.

Evaluate any of our memory products in your workstation for 30 days. If you're not completely satisfied, return it without obligation.

CALL TODAY for complete information or to place an order for these and other innovative products from Newport Digital.



Comprehensive Selection

HP Series 9000	MB	1	2	4	8	12	16	32
HP-200/310/320		■	■	■	■			
HP-319				■	■			
HP-330/350/370				■		■		
HP-332				■				
HP-340				■				
HP-345/375/380				■	■		■	■
HP-360				■	■	■	■	
HP-362			■	■	■			
HP-382				■	■		■	
HP-400/425/433				■	■		■	■
HP-425E				■	■		■	
HP-700RX		■	■	■	■			
HP-720/730/750							■	■

NEWPORT DIGITAL
1-800-383-3642

14731 Franklin Avenue, Suite A
Tustin, California 92680
(714) 730-3644

CIRCLE 488 ON READER CARD

Perfect Your Software With INSIGHT.

All INSIGHT finds the bugs in your software.

At compile time, INSIGHT pinpoints:

- ◆ Errors in calling sequence to standard libraries
- ◆ Erroneous format specifiers to the printf and scanf family

At runtime, INSIGHT pinpoints:

- ◆ All memory reference errors
- ◆ Invalid arguments to standard libraries
- ◆ Arbitrary user-specified parameters
- ◆ Return code validations

For algorithms, INSIGHT pinpoints:

- ◆ Errors in access patterns to arrays
- ◆ Anomalies in values of arrays or scalar variables



Get peace of mind with INSIGHT for only \$995.

INSIGHT is fast, it's automatic and it's thorough. Available on all popular platforms, including Sun, IBM RS/6000, HP 9000, DEC and SGI Indigo. Thirty day money-back guarantee. Visa and MasterCard accepted.



ParaSoft Corporation

2500 E. Foothill Blvd., Pasadena, CA 91107

Telephone: (818) 792-9941 Fax: (818) 792-0819
Email: orders@parasoft.com

CIRCLE 208 ON READER CARD

pace, and it seems to be the operating system of choice there, he says. For a multinational firm such as Spalding, keeping systems similar across international boundaries is a big concern.

White's direction for Spalding will be a mix of HP-UX and MPE/iX. He expects to be running both operating systems side-by-side within three years. "My hope is that MPE/iX will open up so that HP will run MPE/iX on top of HP-UX, but there is no commitment yet from HP," says White.

HP-UX Loud And Clear

A similar change in philosophy is taking place at audio-maker Bose Corp. (Framingham, MA), where Joel Martin, manager of client access services for Bose, plans and manages new client-server systems. Martin foresees changes in his firm's use of the HP 3000, where these minicomputer systems have been a part of Bose operations since the Series II in the mid-1970s.

"We will move to UNIX if it makes good business sense, and increasingly, it is making good business sense," says Martin. He cites these as reasons to consider UNIX:

■ Increasing amounts of software available for UNIX. "When we go to user groups or meetings, vendors are making more ports to UNIX than onto MPE, and we see HP adding UNIX facilities to MPE," Martin comments.

■ All of the major and minor database vendors are on UNIX and only a handful are on MPE. Says Martin, "Often, the application we want is on the UNIX box instead."

■ Lower system prices are pulling hard at systems managers dedicated to reducing their costs. "When you get it all done, there is not as big a cost differential between MPE and UNIX as people think, but there is a difference. HP is more aggressive in pricing UNIX machines," says Martin.

And when the time comes to retire some of Bose's 10 HP 3000 systems in favor of the other OS flavor, Martin says, "HP will not have a lock on UNIX machines for us. We have some HP and

some Sun Microsystems computers in house."

Like Spalding, Bose plans to move slowly toward UNIX. "Probably in six or seven years we will be about 80 percent UNIX," says Martin. Even though many applications will move to UNIX in the next three years, he expects some to continue to function best on MPE/iX. "We want to leverage the advantages on the UNIX side without risking throwing the baby out with the bath water. I think there is still a fit for MPE for the indefinite future. We have MPE applications running that we are still very happy with."

The Single Kernel Theory

While it used to be a no-no in HP to admit that users might switch to UNIX from the golden goose MPE family, this taboo is falling away. Application Support Division R&D Manager Tony Engberg notes that based on his constant contact with the HP 3000 customer base, "Clearly the move to UNIX is accelerating. The early adopters have succeeded and the next wave is picking up on the trend."

Although he staunchly defends the worth of the HP 3000 line, HP's Rich Sevcik lends further credence to rumors of movement toward the HP 9000 family. Sevcik, now manager of both HP 3000 and HP 9000 products, says the 3000 continues to pick up new customers in manufacturing and state and local government. However, he also notes that HP is evaluating a microkernel scheme that would provide one underlying operating system core for all of HP's computer lines, with different operating system shells depending on customer preference.

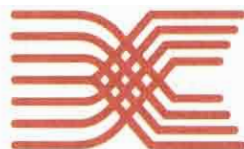
Sevcik said such a kernel might provide not only for HP-UX and MPE/iX, but for future operating systems as well, specifically noting Microsoft NT. "We have a number of research projects looking at what that kernel should be," he says. "So far, our research indicates that this would be an extremely large project. I don't want to predict what the future might hold for now, but it's something we are tracking carefully." ■

IBM 3480/90 Compatible Tape Subsystems for HP 3000 and HP 9000 Computers

- Only 3480/3490 compatible tape drive formally supported by HP
- Bridges the "media compatibility gap" between HP and mainframes
- 18-track subsystems offer very high performance and capacity
- Optional autoloaders provide the freedom of unattended operation
- Data compression via HP's TurboSTORE backup solution or ICRC

**The 3480 Bridge
for HP Computers**

Call toll-free:
1-800-359-0282.



**CONCORDE
TECHNOLOGIES**

Concorde Technologies

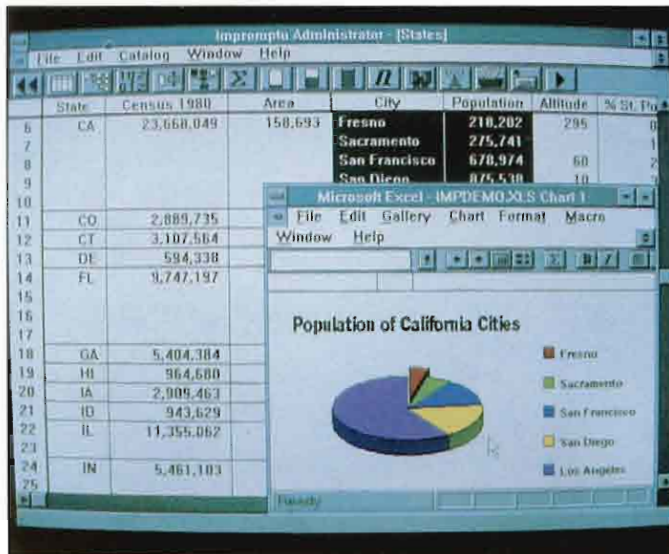
7966 Arjons Drive, Suite B210
San Diego, CA 92126
(619) 578-8750
FAX: (619) 578-3188

HP and the HP logo are trademarks of
Hewlett-Packard Company.
IBM is a trademark of International
Business Machines Corporation.

CIRCLE 232 ON READER CARD



Quick Questions



*Cognos' Impromptu
SQL-Based Data
Access Tool Makes
Database Queries
Faster And Informed
Decisions Easier For
PC Users*

The availability of advanced information systems in the '90s will provide businesses increased opportunities to be more efficient, productive and competitive in the 21st century. Cognos Corp. (Burlington, MA) offers two desktop products, PowerPlay and Impromptu, that can ease data access and help you make quicker, more informed decisions on projects and issues that could mold the future of your company.

PowerPlay is a PC/Windows- and Mac-based EIS (Executive Information System) for analyzing graphical views of summarized business data. Impromptu is a PC/Windows-based SQL data access and reporting tool that uses a GUI and icon-driven interface for query selection. With Impromptu, there's no need to know SQL syntax or be familiar with database or network navigation to get the information you need.

It's through the Impromptu Catalog that you can package data in familiar business terms instead of the arcane physical structure and naming conventions of tables and fields in the database.

Impromptu and PowerPlay work together in that you can export query results from Impromptu as PowerPlay data files. Once your data is in PowerPlay, you can use the EIS features to define trends and examine data relationships. The same business terms you applied to your Impromptu queries will be replicated in PowerPlay, helping to alleviate the learning curve.

According to Judith Hurwitz, president of Hurwitz Consulting Group, "Conventional query tools usually require some knowledge of SQL and table joins. A programmer might find this easy, but it's not intuitive for the business user. Impromptu is a tool that business people [can] actually use."

Impromptu also features a Query Bar that automatically performs all SQL query operations such as sorting; grouping; calculating minimum, average and maximum values; totals, subtotals and averages and; counting occurrences of specific values. Using the Query Bar you can point and click to menus and icons and Impromptu interprets and queries the database for you.

You can capture local snapshots of queries and manipulate the data without being connected to the data-

base. This makes remote access and further manipulation possible.

Cache mode makes it possible to give many users access to corporate data without overwhelming system resources. And, with Impromptu data queries, network traffic and database processing loads are reduced.

Query results can be incorporated into other PC tools or exported to other file formats such as Microsoft Excel, Lotus 1-2-3 and delimited ASCII text. Information is displayed in a fashion easily understood by non-technical users in the Microsoft Windows environment.

George Blair, computer integrated engineering team leader at Monsanto, a producer of agricultural products, explains, "We have eight engineers who are experienced with PC applications, and they found Impromptu as easy to learn and use as Lotus 1-2-3. Popdown menus give you logical choices common to PC users."

Impromptu supports Oracle via SQL*Net on all platforms supported by Oracle; Sybase SQL Server; Microsoft SQL Server; Borland InterBase; Digital Rdb; and HP ALLBASE/SQL. Price is \$595. — *Andrea Zavod, Associate Editor*

Cognos Inc.
67 S. Bedford St.
Burlington, MA 01803
tel: (617) 229-6600
fax: (617) 229-9828

CIRCLE 353 ON READER CARD



23:30

Lights Out
Operation

12 Tape Autochanger For Unattended Backup!

Herstal's DAT Autochanger provides up to 96 Gigabytes of **Unattended Backup** so you can enjoy a good night's sleep without worrying about who or what is backing up your data.

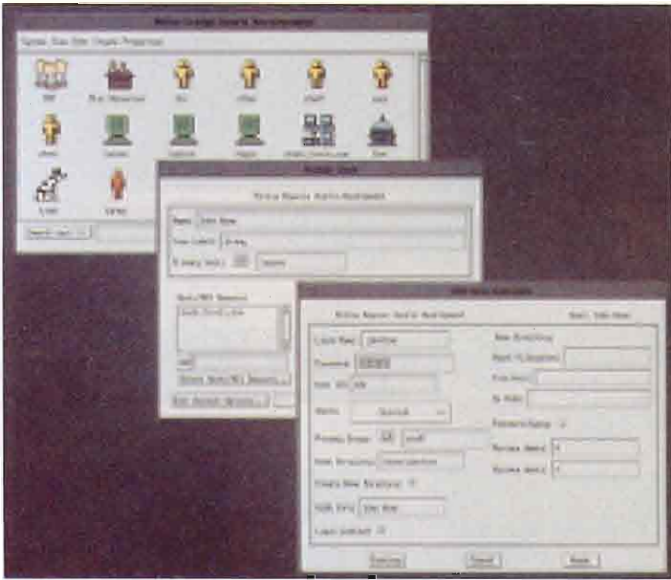
Available as an upgrade to your existing HP DDS drive, or as a subsystem containing HP's new 8 GB drive, our Autochanger is the perfect solution for your backup needs.



3171 W. Twelve Mile Road
Berkley, MI 48072-1339, USA
Phone: (313) 548-2001
Fax: (313) 548-2010

©IRCLE 173 ON READER CARD

Managed Competition



*Fresh From
Success On Sun,
Tivoli Systems
Delivers Its
Distributed Systems
Management
Environment For
HP-UX — With
HP's Blessing*

Tivoli Systems Inc. and HP announced the Tivoli Management Environment (TME) Release 1.5 for HP's PA-RISC-based HP-UX workstations and servers. Available on Sun SPARC for years, TME was scheduled for release on the HP 9000 in late March. Despite its potential rivalry with HP OpenView, Tivoli's success on Sun made it a coveted trophy for HP's own workstation application shelf.

TME provides PA-RISC workstation users with a complementary product to the overall HP OpenView network and system management framework. But it also competes directly with some OpenView products, providing many of the same resource, configuration and security management features at the local area network level. Unlike the OpenView framework, however, Tivoli's network management capabilities

do not (as yet) extend to wide-area enterprise networks.

Using one set of tools, TME users manage workstations distributed across a network and servers running under various UNIX platforms. TME includes the object-oriented Tivoli Management Framework, graphical and command-line user interfaces and management applications. The Framework includes: Tivoli/Works, Tivoli/Courier, Tivoli/Sentry and Tivoli/Application Extension Facility (Tivoli/AEF).

The core application of TME, Tivoli/Works, manages basic system resources, including user accounts, host systems (both workstations and hosts) and NIS directory services. The core helps simplify the development and delegation of system administration.

Tivoli/Courier distributes software updates automatically, providing a uniform network configuration. Through Tivoli/Sentry, managers proactively monitor local and remote computers. Tivoli/AEF provides a toolkit for non-programming system managers who need to modify or customize Tivoli applications.

According to Theresa Ek, program manager for the Tivoli project, HP sees Tivoli as appealing to system managers in commercial environments, a clientele HP desperately wants to reach. "This is an application designed for system managers, like electronics applications are written for electrical engineers," explains Ek.

"Unfortunately," says David Smith, an analyst at International Data Corp., "the Tivoli announcement could have been more positive for end users." Because the announcement stops at joint marketing, and does not include joint development, Smith contends, HP is missing a prime opportunity to provide users with an optimally integrated product and at the same time propel itself forward as an integrated solution vendor.

But HP and Tivoli may in fact be pursuing the course Smith suggests, albeit in an indirect way. Tivoli recently announced a development agreement with software giant (and HP partner) Legent Corp. (Vienna, VA) that may be tantamount to a development deal with HP.

Under that agreement, Legent will license the Tivoli Management Framework, and the two companies together will develop distributed object-oriented system management tools. Meanwhile, in a related agreement, HP and Legent have joined forces to develop enterprise-wide system management solutions for large distributed environments.

Pricing for TME starts at \$37,500 for a 50-node package. — *Charlie Simpson, Contributing Editor*

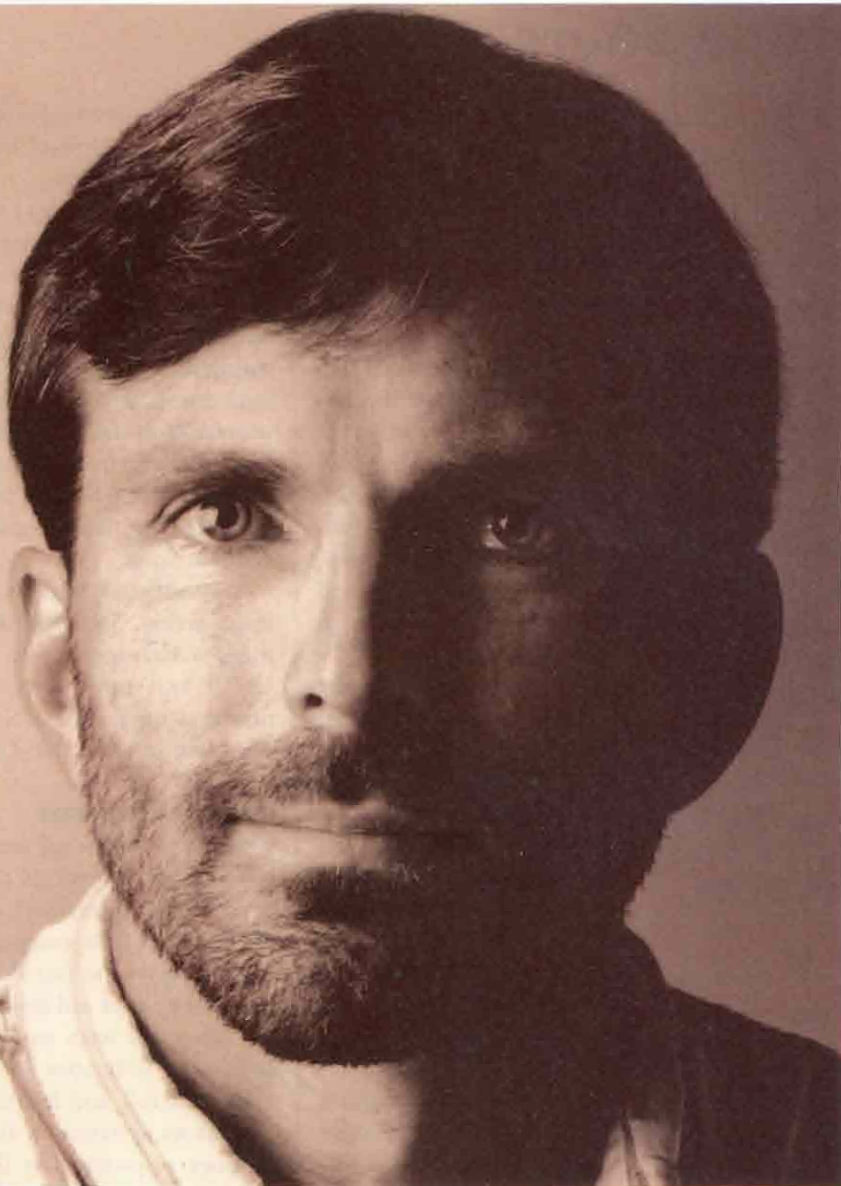
Tivoli Systems
6034 West Courtyard Dr.
Suite 210
Austin, TX 78730
tel: (512) 794-9070
fax: (512) 794-0623

CIRCLE 354 ON READER CARD

We're not saying our Welcome Back Program is the best way to extend the life of your Domain system. Our customers are.

"I need full productivity out of my Domain/OS machines as well as compatibility with Hewlett-Packard's open systems...for some time to come. The Domain Support Program will ensure this happens."

Fred Mallett
Educator/Consultant
FAME Computer Education



**Find out for yourself.
Call 1-800-237-3990 and
learn how you can join
our Domain Support
Program.**

The word is getting around. Hewlett-Packard's Domain Welcome Back Program will support your Domain software so you can sustain the life of your system. For years to come.

When you purchase software support, one of the first benefits you receive is the highest quality software upgrades. At 50% off retail value. But price doesn't come at the expense of service. You have easy access to a dedicated team of experts who are very knowledgeable about your Domain needs.

To prepare your system for the future, you also get updates on the latest software. And when you're ready to migrate to HP's open systems, you'll find your Domain software will transfer at little or no cost.

To get the word yourself, call 1-800-237-3990 and see how you can benefit from Domain Welcome Back support. After all, the sooner you call, the sooner you can extend the life of your system. You have the word of our customers.

Call 1-800-237-3990.

©1992 Hewlett-Packard Company
Program is available to worldwide Domain
customers that have discontinued their software
support contracts prior to January 1, 1993.



CIRCLE 199 ON READER CARD

An Inside Source

Sotas International's "Insourcing" Strategy Capitalizes On Low-Cost Hardware To Bring Financial Applications Back In House



"Years ago, users had the perception that they saved money by outsourcing their payroll application, but those calculations were based on mainframe costs, and aren't valid for computing today — particularly on UNIX."

Arthur J. King
Marketing Director,
Sotas International

For years, companies like Weyburn-Bartel Inc. believed that they were saving time and money by outsourcing their payroll application to a service bureau. But on closer examination, Weyburn-Bartel discovered that it gave up more than it got.

Needing to cut costs, the Grand Haven, MI-based manufacturer of camshafts for the automotive industry, heard the call of Sotas International Inc. (Haverhill, MA), a vendor of financial software, and opted to "insource" rather than outsource.

Promising an investment payback of two years or less, Sotas has taken its "insourcing" message on the road, and is offering businesses a financially viable in-house solution for payroll and human resource applications that also gives them control and flexibility without the associated complexities.

While Sotas is by no means the only vendor to offer an in-house payroll application, the company is making the most noise about insourcing, hosting seminars nationwide.

Touting the price/performance advantages of UNIX and open systems computing, Sotas argues that the once

perceived advantages for outsourcing no longer hold true.

"Years ago, users had the perception that they saved money by outsourcing their payroll application but those calculations were based on mainframe costs, including conversion, education and maintenance, and aren't valid for computing today — particularly on UNIX," says Arthur J. King, marketing director at Sotas.

Like software vendors in many arenas, Sotas recently made a strategic move to UNIX and now runs its products on several UNIX platforms, including HP-UX.

Bring It On Home

King notes that Sotas' strategy returns control of the payroll application back to the customer. The company not only gives the user flexible management and reporting functions with its Accountable Solutions integrated Payroll and Human Resources systems, it also assumes responsibility for addressing tax and compliance issues at both the state and federal levels. "People aren't aware that there are vendors supporting that piece today," says King.

One of the main reasons companies use service bureaus for payroll processing is to avoid the complexities of taxes, make sure that people get paid properly and avoid legal hassles, says Richard Burnett, senior manager with Price Waterhouse. He believes that Sotas is a company

in the right place at the right time. "Insourcing, as presented by Sotas, is a viable solution for companies of 2,000 people or less, because they remove the burden of compliance and cut costs," Burnett says.

According to Burnett, while service bureaus often rope users in with a low per check processing fee, services outside of the basic package often escalate customer costs.

"If you have the right company profile, with limitations of size and complexity, insourcing can be a cost-effective alternative to a service bureau," he says. It also allows companies to regain control over its own destiny, he adds, turning the payroll process away from being an administrative task to becoming an integral strategic part of the way the company does business.

With 300 employees, Weyburn-Bartel expects to see a two to three year payback running the Sotas product in-house on its HP 9000. "I also get more flexibility and can do things when I need to do them," says Siemion. — Lynn Haber, Contributing Editor

Sotas International
192 Merrimack St.
Haverhill, MA 01830
tel: (508) 521-1300
fax: (508) 374-4382

Jukebox Solutions That Rock Around The Clock



Delta offers a classic selection of mass storage solutions. Choose your favorites from 8mm tape, DAT and optical jukeboxes complete with custom device drivers and application software.

Delta's backup and archival applications for use on Sun, IBM RS/6000 and HP9000 workstations come in a full range of capacities and price.

Call for more information or to speak to our national distributor:



(510) 449-6881

BudTool and MigTool are trademarks of Delta Microsystems, Inc. All other trademarked companies and products are the property of their respective owners.

CIRCLE 461 ON READER CARD

BudTool™ automatic backup and retrieval software reduces system administration time and ensures network backup reliability.



- ♪ Backs up heterogeneous UNIX networks
- ♪ No client software required
- ♪ Allows users to restore own files
- ♪ Highest backup performance in the industry
- ♪ Uses standard and/or custom UNIX backup commands
- ♪ Backup of industry leading databases
- ♪ Point and click GUI (Motif and Openlook)
- ♪ Live and Fast backup also available

MigTool™ file migration software manages data to allow the fastest access to your files at minimum cost.



- ♪ Effectively manages large quantities of data across a heterogeneous UNIX network
- ♪ Migrates infrequently used data off magnetic disk to lower cost archival media
- ♪ Automatically manages migration of your files
- ♪ Minimizes retrieval times and cost per megabyte
- ♪ Transparent to the user
- ♪ Point and click GUI (Motif and Openlook)



Delta Microsystems, Inc.

Systems & Software Experts

Is It OOOP Yet?

Object-Oriented Development Environments Promise New Levels Of Software Productivity, But So Far Few Early Adopters Are Talking About Results

HP Professional's concerted efforts to unlock the dark secrets of object-oriented development environments have revealed that there are not as many users of these environments as vendors would have you believe, and that some of these users literally shun the light of public recognition.

HP reports that users of its new HP Distributed Smalltalk product are asking that their names not be used, ostensibly to protect the competitive advantage the new product represents in their markets. The HP argument goes that in highly competitive markets, such as insurance claims processing, new applications based on particularly effective technology implementations may move a company ahead of other, less savvy claims adjusters. And so, these unheralded users pursue their world-class development work in hiding.

Back in the light of day, meanwhile, other users make their way more gradually toward the nirvana that object-oriented computing represents. Take Utah, for instance. Because computer system prices are dropping precipitously, state and local agencies that used to make do with too little can in some cases now afford a pretty good computer with state-of-the-art technologies. And with some patience, those technologies could even include objects.

BY BILL SHARP

NEW RELEASES



Take it for a spin.

Just check out these awards:

UNIX Review 1992 Outstanding Product award. *Computer Language* Productivity Award. *Corporate Computing* Best Buy for 1993. The list goes on.

Thing is, those were given to the *old* releases of our C++ and C programming environments.



Now, if you qualify, you can test-drive an evaluation copy* of the newest releases of either ObjectCenter 2.0 or CodeCenter 4.0 (Formerly Saber C++ and Saber-C). *Free.* Releases that will keep the awards coming.

Just call 1-800-NOW-CNTR (800-669-2687). And find out why top software developers use ObjectCenter and CodeCenter to build, edit, test, debug and enhance their applications, every day.

More hours in your day.

In a recent IDC report, greater than 50% of those who purchased UNIX C++ programming environments chose ObjectCenter.

One reason: both ObjectCenter and CodeCenter users report an immediate increase in productivity of about 30%. Some as high as 400%.



Better code, guaranteed.



You heard right: we have the only programming environments that *significantly improve the quality of your code. Guaranteed.* Thanks, in part, to our integrated run-time

error detection feature. And instant feedback on code changes.

Call 1-800-NOW-CNTR

It's that simple. If you qualify, we'll send a *free* evaluation copy of ObjectCenter 2.0 or CodeCenter 4.0 on CD-ROM or tape*. So call now. It's not just a test-spin you'll be taking part in. It's more like a revolution.



Formerly Saber Software

10 Fawcett Street, Cambridge, MA 02138 • (617) 498-3000

*Offer to residents of the USA and Canada, only.

CIRCLE 274 ON READER CARD

This is a pleasing realization for Lloyd Johnson, information systems manager for the Utah Department of Natural Resources (DNR) in Salt Lake City. Two aging Wang VS minicomputer systems in the department had been limping along helping the state manage wildlife, park lands, open lands, oil and gas recovery, mining and water resources.

Now, rather than continuing to cope with outdated systems, Johnson is installing faster computers with lower maintenance costs. He also looks toward developing object-oriented applications — once the groundwork is all in place. The slick software must be preceded by a solid infrastructure and a plan supported by management.

Johnson's first task was to interview DNR managers and determine what their strategic projects would be for the next several years. He used this information to define three computer system capabilities these teams would require:

- Department-wide availability of graphical information systems (GIS).
- Department-wide availability of imaging.
- Easy integration of GIS, imaging and text data.

"We've always lagged in technology up to about now," says Johnson. "But the new price/performance situation in the hardware market means that we're able to afford the kind of platforms we need to support these applications."

But before charging ahead, Johnson first defined the amount of money needed to purchase the new systems and ran a payback analysis on new equipment combined with the Wang elimination. Says Johnson, "As long as we stick to our timetable, the payback will be less than two years."

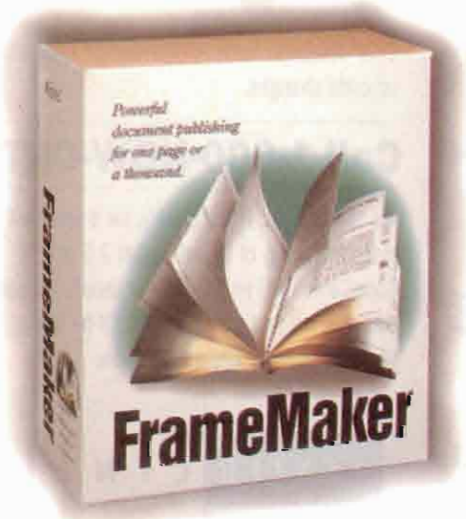
"The toughest part was getting everybody on board with the vision," he adds. "Management had to know why we needed to make the change and why make it this way instead of some other. My own staff needed to have a vision of where we were going and to realize the big picture."

That All-Important First Step

WHAT MAKES JOHNSON'S plans a bit unusual is that, while he's planning for object-oriented systems in the long term, those applications are actually the second step in his plan. The first step is building a solid system on which the object-oriented applications will rest.

"The constraints around our vision were that we had to do something to support our legacy systems," says Johnson. "Considering the cost of maintenance on VS, we made a decision to migrate onto a new environment as soon as possible in

Give your HP more muscles for a few extra clams.



FrameMaker personal license, \$595*

▶ Publishing documents on a UNIX™ workstation has always meant shelling out a lot of money. Until now. Because HP 9000 Model 715/33 and 725/50 owners can pick up FrameMaker—the #1-selling UNIX document publishing program—for less than half price.

▶ Now is a perfect time to see why so many HP workstation users choose FrameMaker. For creating one page, or one thousand. With the most extensive authoring, graphics, math and layout features available.

▶ See your reseller for details. Or call us at **1-800-U4-FRAME Ext. 532**. But hurry. Because for \$595*, the world is your oyster.



Copyright © 1993 Frame Technology Corporation. All rights reserved. Frame, FrameMaker, and Frame Technology are registered trademarks of Frame Technology Corporation. Other brand or product names are trademarks or registered trademarks of their respective companies. Offer ends June 30, 1993. *Frame suggested promotional retail price in U.S. only. Actual price may vary.

CIRCLE 107 ON READER CARD

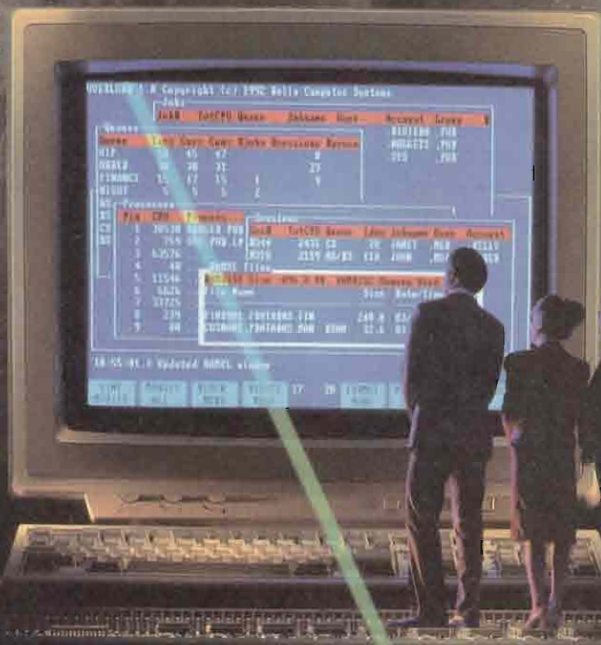
HOW KELLY STEPS UP YOUR PERFORMANCE... WHETHER IT'S CPU, MEMORY, I/O OR SOFTWARE!

Kelly offers a broader line of HP-compatible memory, Ramdisc and system performance improvement products than anyone, for

- all HP-3000 systems
- all HP-9000/800 servers
- all Series 300/400/700 workstations
- all LaserJet and InkJet printers

Step up to our Support Program:

- ✓ Performance consulting
- ✓ Lifetime Warranty
- ✓ Free trial period
- ✓ PICS technical support
- ✓ Same day service
- ✓ Frequent megabyte trade up
- ✓ Service call reimbursement



New!

OVERLORD allows you to set CPU percentages for classes of users with its "push button" control.

RAMDISC eliminates I/O bottlenecks and boosts performance by 30 to 400%.

128 MB Memory expands Series 9x7/ LX and 8x7 to 1 Gigabyte.

64 MB Memory expands Series 720/730 to 256 MB.

Write, Phone or FAX today. Learn more about how we've become "The Performance People".

KELLY
COMPUTER SYSTEMS

139 N. Whisman Rd.
Mt. View, CA 94043
Tel.: 415-960-1010
FAX: 415-960-3474
800-627-2000

Am Felde 2
2000 Hamburg 50
Germany
Tel: +49-40-391704
FAX: +49-40-391703

HOTKEY

KELLY

RAMDISC

OVERLORD

CIRCLE 185 ON READER CARD

order to realize the savings from getting rid of the Wang environment. A lot of our legacy systems were on Software AG Natural and the rest were COBOL."

Johnson and company selected the HP 9000 Model 867 running HP-UX to support both the legacy Software AG ADABAS database as well as Informix to serve as the database for new image BLOBS and GIS data. ARC Info is the GIS application of choice for the state of Utah's government.

By the time you read this, Johnson will be hovering in the general vicinity of the power cord for the second Wang system (he's already yanked the first one). When we talked, he was running both the remaining Wang and the new HP system simultaneously, and feeling fairly confident. "When we met our target to get rid of the first Wang, we made believers out of management," he says.

Johnson's approach to managing his project is risk avoidance. By running both systems, he says, "users can go through learning and testing with no risk and we can bring on users a batch at a time. The first ones were the motor pool applications, and they came across clean and are running in the new environment. Now we're doing parks accounting, and by next week they'll be on the new system."

When the new system is running and the second Wang is shut down, says Johnson, "operating costs will be about [one]

fourth of what they were before, with better performance and integration."

The Lure Of Low Cost

DRAMATIC COST REDUCTIONS turn heads and catch eyes in just about every sector of our troubled economy, but no sector is feeling the cost control pinch more than health care. Systems Automation Technologies (SAT), London, is banking on the need for cost containment with its custom CASE tools for health care applications, which were developed using an object-oriented environment from Hamilton Technologies Inc. (Cambridge, MA).

Jutinder Ryatt, director of SAT, likes Hamilton's 001 so much that he had his tool developers use it on their HP 9000 Series 700 workstation to rewrite some of his firm's existing CASE tools. "Application developers tend to use a handful of different tools, and you find that the applications they produce are disjointed because of this," says Ryatt. More complete development environments avoid this problem, he says. He advises choosing an environment that not only supports the application, but also can easily be improved and updated later.

Researcher Kevin Brophy, senior member of the technical

Disaster strikes...

How will YOU recover your critical data?


MagicDisk_{tm}

System Software Solutions available for VMS systems and UNIX systems

ResQue! - Realtime back-up of data across a network without impacting transaction time

Shadowing - For data fault-tolerance and improved disk read performance - a unique RAID solution!

Memory Disk - A fast, temporary software-based disk that improves I/O operations



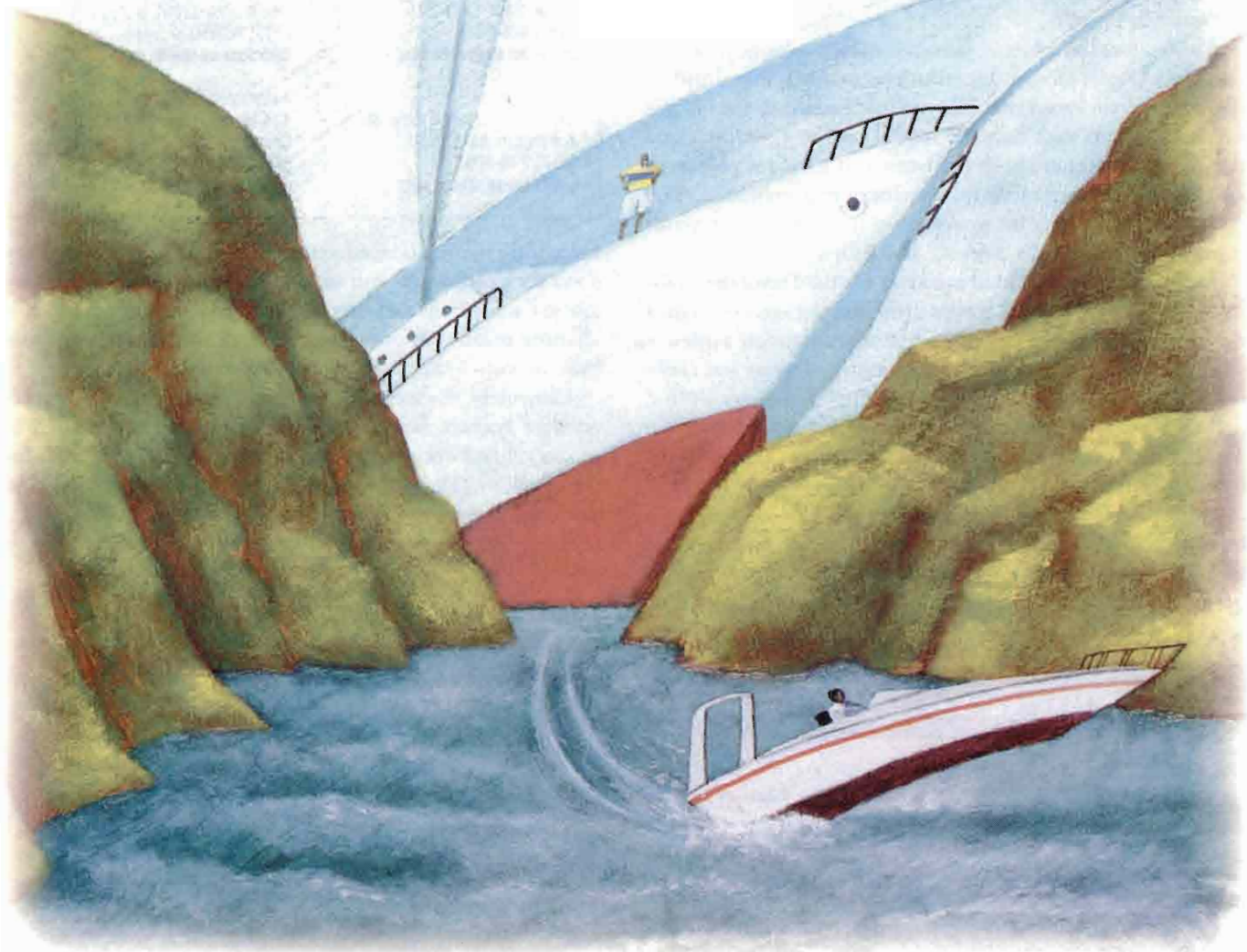
Bear Computer Systems Inc.

Call today for more information about our free product demonstration package.

**9584 Topanga Canyon Bl.
Chatsworth, CA 91311**

**(800) 255-0662, ext.770
(818) 341-0403, ext. 770
FAX: (818) 341-1831**

WHEN YOU RIGHTSIZES WITH OUR ACCOUNTING AND HR SOFTWARE, IT'S SMOOTH SAILING.



Rightsizing opens the way to greater productivity. But only Lawson offers the combination of products, policies and support that ensures smooth passage to your rightsizing destinations.

Rightsizing the world's best companies requires software with power and flexibility. Our mainframe-caliber, CASE-based software is easy to install and maintain. Our applications are priced based on the number of users, not CPU size. And our

unique open licensing policy lets you migrate from one Lawson-supported platform to another without additional license fees.

Our accounting and HR software solutions are available for HP 9000® and other UNIX®-based systems. We also have solutions for distribution and retail management. For case histories of companies that have sailed through rightsizing using Lawson software, call **1-800-477-1357, ext. 835**

LAWSON
Software

UNIX is a registered trademark of UNIX System Laboratories, Inc. HP 9000 is a registered trademark of Hewlett-Packard Company.

S O F T W A R E F O R H P 9 0 0 0

CIRCLE 463 ON READER CARD

staff at GTE Laboratories (Waltham, MA), needed a technology to enable linking objects with existing C++ code to help build new GTE telephone systems capabilities with automated linking and updating capabilities. "We wanted a visual programming environment for developing new telephone services, and we were looking for something fast," says Brophy. Many of the object-oriented environments he considered simply weren't fast enough, he says.

ObjectStore, an object-oriented database management system from Object Design, Inc. (Burlington, MA), met Brophy's requirements for speed and ability to mix code with C++. "We needed a system with minimal impact on our C++ code and the ability to connect both persistent and transient objects so they can interact and retain consistency in the application. You can create objects that are persistent or not persistent, depending on how you use the objects," says Brophy.

HP's Ian Fuller, technical marketer for the Distributed Object Computing Program, groups users entering object-oriented development into two classes. "Some take an almost academic attitude," he says. "They analyze the entire business and existing process, then put together a model of the enterprise and find tools to automate it. Most of these efforts get bogged down. The business is often moving too fast for them to create a model before it is outdated."

At the other end of the spectrum is the user who selects a business problem area such as customer service for a target system. "They build a prototype, improve it, then deploy and go on to the next area using the ideas from where the first effort

COMPANIES MENTIONED

Hamilton Technologies Inc.
17 Inman St.
Cambridge, MA 02139
(617) 492-0058
CIRCLE 307 ON READER CARD

Parc Place
999E. Arques Ave.
Sunnyvale, CA 94086
(408) 481-9090
CIRCLE 312 ON READER CARD

Informix
4100 Bohannon Dr.
Menlo Park, CA 94025
(415) 926-6300
CIRCLE 308 ON READER CARD

Software AG
11190 Sunrise Valley Dr.
Reston, VA 22091
(703) 860-5050
CIRCLE 310 ON READER CARD

Object Design
One New England Executive Pk.
Burlington, MA 01803
(617) 270-9797
CIRCLE 309 ON READER CARD

Automated Systems Technology
124 Mount Auburn St., Suite 200
Cambridge, MA 02138
(617) 576-5777
CIRCLE 311 ON READER CARD

had wrong turns. These efforts are being more successful. They don't try to come up with an overwhelming architecture, they just get something that works." One flaw in this approach is allowing more than one group to work on related systems simultaneously—they won't work well together, he cautions.

Ultimately, the secret for success in developing new object-oriented systems, says Fuller, may be to "develop enough of an overall architecture to generate some rules of business for the company. Then you put solutions in place where you find particular problems. Finding the middle way is important."

Would you like to continue to see articles on this topic?
Circle on reader card
yes 344 no 343

MAKING SMALLTALK: HP DEBUTS DISTRIBUTED OBJECT ENVIRONMENT

In March, HP announced its entry into the object-oriented development environment competition, HP Distributed Smalltalk. This is HP's implementation of the Object Management Group's CORBA specification for distributed computing applications, rendered as an augmented version of the Smalltalk object-oriented language from ParcPlace Systems Inc., (Sunnyvale, CA). Got that? CORBA stands for common object request broker architecture, a specification that describes how objects are transmitted over networks.

Smalltalk is an object-oriented programming language used in the VisualWorks application development environment from ParcPlace Systems. HP Distributed Smalltalk (see photo) is the brainchild of Jeff Eastman, senior architect with HP's Distributed Computing program in Cupertino, CA. Eastman, a veteran of early HP workstations, Spectrum projects and HP Labs, adapted Smalltalk with his own set of tools designed to enable developers to create applications usable by several workers simultaneously. Eastman did the first round of development for this product a few years ago on his own time using a laptop computer.

Eastman's 1989 G-job turned gradually into a reference implementation for internal product development — until last fall. Recalls Eastman, "That's when some marketing people looked at the



product and asked, 'why aren't we selling this?'" Marketing said there was a market, showings to customers got them all excited, and HP announced its product February 2 — who says this company is too big to move quickly?

Eastman seems to gladly surrender most of the limelight, but loves his product. In the midst of a demonstration during a trade show, he asks, "What other product can do this?" and proceeds to open the demonstration program and introduce an error that brings the demo to a sudden halt with an execution error message. He opens a debugger, allows it to locate the error, makes the fix and tells the program to resume execution. The demonstration dutifully resumes — there is no crash, no loss of data, no loss of place in the program underway. Eastman is proud.

SHADOWING

Are you restricting daytime batch processing?



You no longer need to wait overnight to process batch jobs. With NetBase-Shadowing, Quest Software can give you a "Batch Engine". Shadowing data in real time to a second computer such as a S/917 allows you to increase your job limit from 1 to n during the business day. What's more, since jobs will run against the "shadowed" data, you won't be sacrificing on-line response time, competing with on-line resources or be required to purchase expensive MPE user licenses. Your organizations productivity will increase and your time spent waiting for valuable data will decrease. Using NetBase-Shadowing is the most cost effective way to solve your daytime batch processing limitations and increase overall system throughput.

Benefits Include: On-Line Backups • Data Redundancy • Increased System Performance • Inexpensive Incremental Processing Power • Transparent To Users • Reduced Upgrade Costs

FOR ADDITIONAL INFORMATION OR A DEMONSTRATION TAPE CONTACT:



Quest Software, Inc. 610 Newport Center Drive, Suite 890,
Newport Beach, CA 92660 Phone: 714-720-1434 Fax: 714-720-0426

In Europe Contact:

System Software (Int.) UK (44) 0905 794646
ORBiT (33) 4025 1650 France • (49) 30 852 70 97 Germany
(31) 2979 41468 (Benelux) B.V. • (44) 372 360 333 UK
(45) 42 335959 (Scandinavia) AB



CIRCLE 268 ON READER CARD

Beyond The

GUI

Gridlock

P A U L A J A C O B S

User Interface Design Tools And

User Interface Management Systems

Help Software Developers Survive

The Trials Of Creating And Porting

GUI-Based Applications

GUI-based applications are a user's dream, but they can often be a software developer's nightmare. Users are happy to expound on the merits of pointing, clicking, dragging and dropping — for simplicity, ease of use and increased productivity. But talk to anybody developing code for a graphical user interface, and you'll hear a different story. It's not so easy to create an effective GUI presentation with the right windows, controls, menus and dialog boxes. Nor is it a trivial matter to prototype, develop and maintain GUI-based applications.

"The need to simplify the creation of X-based applications is driving interface development technology, which is the fastest growing segment of the X market," says Steve Auditore, president of the X Business Group, a market research firm that specializes in the X Window System. According to Auditore, the market grew to more than \$82 million in revenue in 1992, a 150 percent increase over 1991.

Software Engineer Chris Milam of Bradley Ward Systems (Norcross, GA) agrees. The company uses a GUI interface builder — ICS' Builder Xcessory — to lay out widgets and screens, and generate C hierarchy runtime code on its HP 9000/827 systems, which are used to develop CIM solutions for the food, pharmaceutical and healthcare industries.

"We use mostly the creation function, which frees us from the time-consuming and tedious process of handcoding widget layouts," said Milam. He points to ease of construction as a key feature in selecting an interface builder.



The coolest
feature of our
new X terminals
may have you
considering some
optional hardware.

It's plain to see our new MCX™ line of X terminals features built-in audio. And like all our other X terminal innovations, it's an industry first.

What's less obvious is how the MCX series literally speaks to a new standard in other ways. Like more than enough performance for demanding 2D or 3D PEX graphics. Or support for your choice of a 14, 15 or 17 inch color monitor. Not to mention any standard VGA/SVGA monitor. What's more, they all run our feature-rich NCDware™ Software that's soundly proven its worth in over 110,000 seats worldwide.

Even with all this, the MCXs' attractive prices still make them perfect for all your high volume requirements.

To learn more about the MCX family, call 1-800-285-1098 for a description that, incidentally, was recorded on one of these remarkable new X terminals. Because when a product is this good, you let it speak for itself.

Network Computing Devices, Inc.

NCD

Network Computing Devices, Inc. • 350 North Bernardo Ave., Mountain View, CA 94043. In the U.S.: 415/694-0650 FAX: 415/961-7711 Email: info@ncd.com, CANADA: 416/891-1410, JAPAN: 03-5278-2411, FRANCE: 1-34-65-76-76, U.K.: 0628-822228, GERMANY: 89-33-46-60, ©1993 Network Computing Devices. The NCD product names are trademarks of Network Computing Devices, Inc. All other trademarks are registered to their respective companies.

CIRCLE 482 ON READER CARD

Dave Wright, Interface Architect product manager at Hewlett-Packard emphasizes that an interface builder speeds the development process, enables graphic construction, and eliminates the need to generate code by hand. Wright says that Interface Architect, HP's OSF/Motif-based graphical user interface builder has experienced a 40 percent to 50 percent growth rate since its introduction two years ago. While most customers are using HP Interface Architect to develop technical applications, Wright notes that demand also has picked up in the commercial sector.

The Right Tool For The Job

CHOOSING AN APPROPRIATE GUI development tool isn't easy, but it doesn't need to be a major struggle, either. As the market becomes saturated with new vendors and products, there's sure to be a size and shape for everyone. The challenge is finding the right product for your needs.

Cambridge Technology Partners (CTP), a Massachusetts-based consultancy, considers several factors when conducting a GUI-builder evaluation for a client. Senior Associate Deirdre Mulligan and Robert Jen, director of CTP's tools department, say that product functionality, performance, support, adherence to standards, cross-platform, vendor reliability, documentation, training, cost and customer references are all key considerations.

Often, the most obvious requirements can be the most difficult, according to CTP. For example, inadequate support and documentation, including training manuals and access to knowledgeable technical support staff, can cause lasting headaches. Also, because new products may not be "bug free," it's important to talk with beta sites before buying and determine whether the product has been through thorough testing.

Here are some questions you may find useful in evaluating a product's functionality:

- What does the user interface do?
- Are there screen-drawing tools?
- Can you link in other code or libraries?
- Can you link into other software products, such as databases?
- Can you create on-line help?
- Does it support foreign languages?
- Is the product only a prototyping tool or can it be used for start-to-finish development work?

Few developers would question the importance of finding a product that supports standards, different platforms and an appropriate "look and feel." Most products available today support ANSI C and OSF/Motif, HP-UX and other popular UNIX platforms, offer adequate response time, and supply many other important features, including good error recovery.

Peter Winston, president of ICS, says, "We don't think that we or any one software vendor can solve every problem." He suggests that users select tools that can help developers build

FEW DEVELOPERS

would question the importance
of finding a product that supports
standards, different platforms and
an appropriate "look and feel."

an open, robust development environment, avoiding proprietary runtime components.

As a start, Winston suggests that users consider the desired output and necessary prerequisites, such as Motif support. Users should try to understand their entire problem, determine their goal, and consider their overall development environment, (e.g., CodeCenter — a popular C development environment from CenterLine Software, Cambridge, MA) or widget support. It's also important to examine carefully a product's user interface and determine what's a realistic level of expertise to learn and to use the product. Finally, he suggests that users evaluate the software, ensure that it adheres to standards, and determine whether the vendor is reliable.

"Developers require a tool with a quick learning curve that does not take a long time to do the job," emphasizes Frans Kes, manager of Teleset Canada's Flight Dynamics Group, which is developing a suite of 40 software applications to maneuver and control six orbiting satellites. His 15-member development team made the switch to NSL's XFaceMaker after finding HP's Interface Architect difficult to use, even after six months. The development team now is using XFaceMaker to design the interface's look and feel and to program the callbacks, although Kes admits even XFaceMaker involved some compromises because of its structure and simpler programming language.

For Hampshire Instruments, a Massachusetts-based manufacturing company, the most important consideration in selecting a GUI builder was the ability to create screens rapidly and visualize the output of Motif-based applications on an HP 9000/720. After evaluating several products, the company selected Alsys' TeleUSE product, according to Peter Nikolla, senior software engineer at Hampshire.

"We find TeleUSE flexible and easy to use, and it allows us to set up hierarchies and build classes of widgets," says Nikolla who recommends that users be familiar with Motif, the X Window System, and the C programming language. "The use of



Now you can add workstations to your Domain/OS or HP-UX environment at only a fraction of the list price.

That's what remanufacturing is all about. Recent model, lower cost equipment that runs like new because it has been rebuilt. From the ground up. To manufacturer's specifications.

Literally manufactured a second time. By Tryonics,

**Why
pay
more
?**

the people who know how to optimize these systems for your installation—new or existing.

Tryonics delivers the highest quality remanufactured workstations on the market today. Backed with technical expertise, full 90-day warranty and eligible for manufacturer's maintenance contract.

Before you pay more, call **1-800 551-6236**

 ***tryonics inc.***

Workstation Computers and Services

CIRCLE 477 ON READER CARD

Fax (603) 427-6843 Email: info@tryonics.com 170 West Road Suite #15 Portsmouth, NH 03801

the TeleUSE "D" interface (a low-level scripting language) helps us manipulate widgets easily, saving considerable time and effort."

GUI Builders Galore

THE FIRST STEP, HOWEVER, is determining which type of product meets the needs of your application development environment. One helpful approach is to classify GUI interface builders into four categories: interface development tools (IDTs), user interface management systems

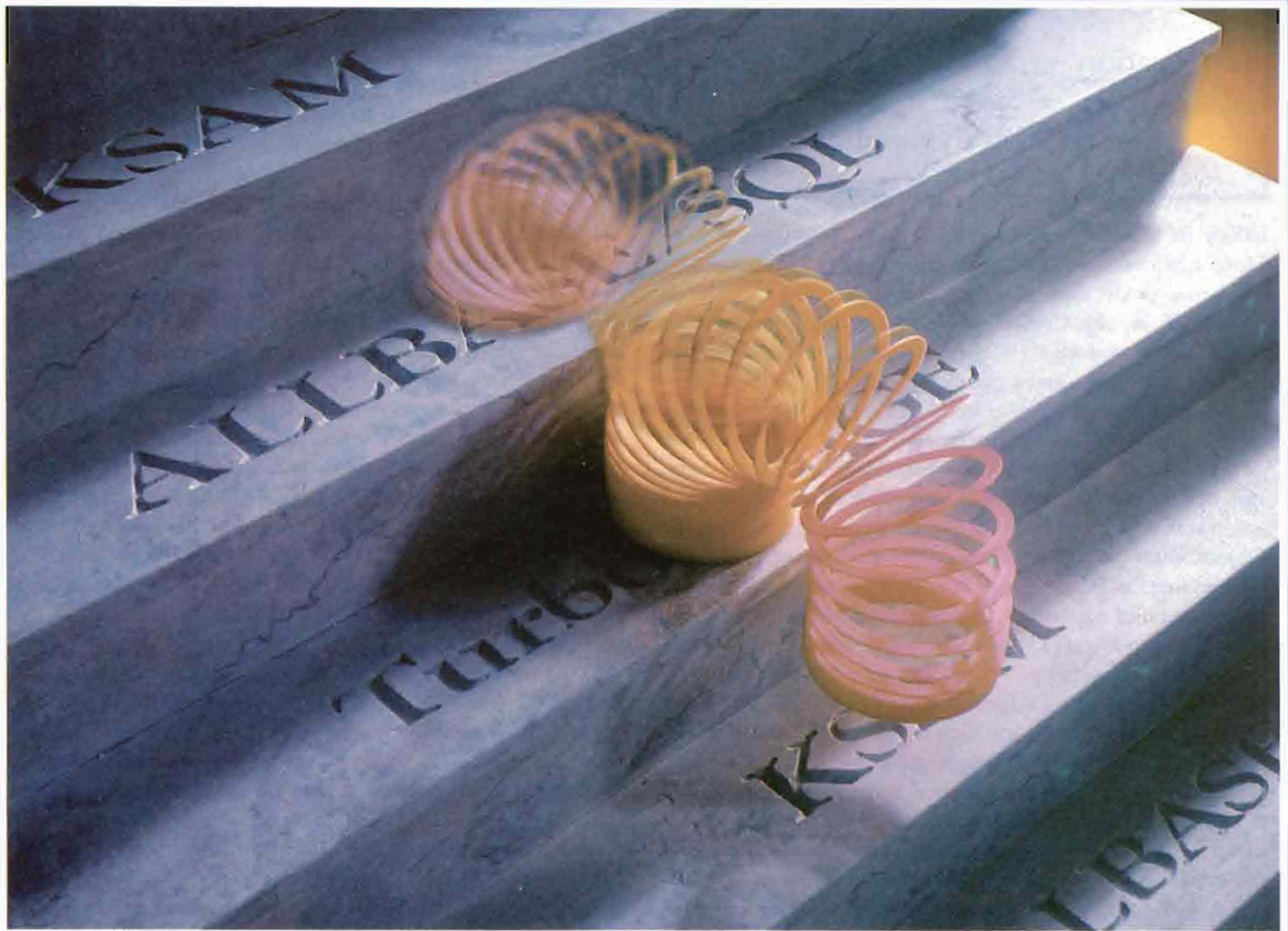
(UIMs), cross-platform development tools, and dynamic data visualization tools (DDTVs).

IDTs are basically graphic layout tools that allow static layout of the user interface portion of an application. With an IDT, software developers can lay out attributes such as position, color or size. The IDT then generates the code to define the interface, either in pure C code or user interface language (UIL). This code creates both the attributes and the widgets, such as dialog and message boxes. Builder Xcessory from Integrated Computer Solutions (ICS) and V.I. Corp.'s X-Designer are examples of IDTs for the HP platform.

The current IDT market leader is Integrated Computer So-

Company/Product	Code Generation	Widget Support	GUI Platforms	CASE Tool Integration	HP Support	Price Single Use License (UNIX)
Alsys TeleUSE	C, Motif, UIL	Widget Generation, Custom Motif Style	Motif	ObjectCenter, CodeCenter	HP 9000/400 700 HP Apollo	\$7,500 + Run-time license
HP Interface Architect	C, Motif, UIL	Widget Generation, Custom	Motif	SoftBench	HP 9000/400 700 300 800	\$5,000
ICS Builder Xcessory	C, Motif, UIL	Widget Generation, Custom, (CS Widget Databook)	Motif OPEN LOOK	CodeCenter	HP 9000/700	\$3,200
Neuron Data Open Interface	C, UIL	Custom	Motif OPEN LOOK Mac, Windows Presentation Manager	---	HP 9000/300 400, 700, 800	\$15,000 Run-time license Required
NSL XFaceMaker	K&R or ANSI, C, UIL	Widget Generation Custom (NSL Widget Library)	Motif	---	HP 9000/400 700, 800	\$2,995 \$4,995
Open Inc. Aspect	C	---	Motif OPEN LOOK character	---	HP 9000/300 400, 700, 800	\$3,995
V.I. Corp. X-Designer	ANSI & K&R C, Motif, UIL, C++	Widget Generation DynaGraphX Widgets	Motif	CodeCenter, ObjectCenter, DataViews	HP 9000/800 700, 400, 300	\$3,500
V.I. Corp. DataViews	Interfaces with C, Ada, Pascal, Fortran source programs	Widget Generation, Custom, DynaGraphX	Motif, OPEN LOOK	---	HP 9000	\$7,000
Visix Software Galaxy	C, C++	Widget Generation Custom, The User Interface Class Library	Motif OPEN LOOK MS-Windows Presentation Manager	CodeCenter, ObjectCenter, Lucid's Energize	HP 9000/700	\$9,600
Visual Edge UIM/X	K&R, ANSI, C, Motif UIL	Widget Generation, Custom	Motif	CodeCenter, SCCS, SoftBench	HP 9000/400, 700, 300, 800	\$5,000
XVT Software XVT Toolkit	C, UIL, C++	---	Motif, OPEN LOOK MS-Windows, Windows NT, Presentation Manager, Mac, character	---	HP 9000/300, 400, 700, 800	\$4,400

Whatever Steps You Take, Only One 4GL Guarantees Total Flexibility.



FOCUS From Information Builders. The 4GL That Gives You The Options To Work With Any Database.

IS YOUR DATA FUTURE PROOF?

Right now almost 90% of your applications use TurboIMAGE database. But, as you move towards relational or object databases, how will you integrate this new technology with your existing data?

WHERE TECHNOLOGY IS GOING, WE'RE ALREADY THERE

Relax. Because now there's a new solution that lets you develop with the database of your choice. You can develop new or maintain existing TurboIMAGE databases and join TurboIMAGE with ALLBASE/SQL and KSAM. Or, convert TurboIMAGE, KSAM or even flat files to ALLBASE/SQL.

Whatever your preference is, we have the solution. It's FOCUS from Information Builders. The leading specialists in distributed information systems. FOCUS offers application development and decision support tools for integrating databases from HP, third parties such as Oracle, and in the future HP's OpenODB.

No other 4GL product comes with this breadth of functionality, bundled with an automatic database conversion tool!

ACCESS ALL OF YOUR DATA

FOCUS is the platform independent application development tool that gives you an unmatched ability to create, control and integrate critical information systems within your enterprise.

And because FOCUS provides you with complete application portability and access to over 50 data structures across 35 operating systems, you can port any application to the HP and still have access to your legacy data.

So for guaranteed database flexibility the next step is easy. Call Information Builders, an HP Premiere Solutions Provider, for more information on FOCUS or to attend a FREE Seminar...

CALL 800-969-INFO

In Canada call 1-416-364-2760

IBI  **FOCUS**
Information Builders, Inc.

A UIMS CAN TEST HOW
 users interface with the
 application — and how the interface
 interacts with the application.

lutions' (ICS) Builder Xcessory, which designs and lays out OSF/Motif applications on the X Window System, and generates standard C or UIL code without requiring runtime modules. It also integrates with CenterLine's CodeCenter C development environment, supports C++ and Ada, features a form editor and predefined callbacks, and supports the creation of enforced corporate-wide style guides. For building complex user interfaces, there's the ICS Widget Databook.

V.I. Corp.'s X-Designer generates portable C and C++ code, and, designs and lays out OSF/Motif applications, imports and generates UIL, and can integrate with CodeCenter or ObjectCenter (an object-oriented C++ environment also from CenterLine). X-Designer also features a layout editor and the ability to build hypertext help into applications and a color pixmap editor. Users can add their own or third-party widgets.

The second category — User Interface Management Systems — includes Visual Edge's UIM/X, Telesoft's TeleUSE and NSL's XFaceMaker. HP's Interface Architect, also falls into this group. Generally, a UIMS includes both the IDT and a dialog mechanism for linking the interface and the application. Use of an UIMS enables the developer to define the interface's "look and feel," or behavior dynamically, and to also test and debug this behavior. For example, a UIMS can test how users interface with the application, how these elements interact with each other, and how the interface interacts with the application.

Visual Edge's UIM/X, which is marketed through a large distribution channel, owns the undisputed market share both in UIMs and general GUI builders. UIM/X supports OSF/Motif, generates ANSI-C or K&R code, reads and writes UIL, and can be used to enforce corporate style guidelines. The product includes several editors and a library of convenience functions. A built-in C interpreter enables developers to test the interface when their application is running. UIM/X also can be tailored for market-specific applications.

HP's Interface Architect is based on Visual Edge's UIM/X, with added enhancements. They include HP SoftBench integration, UIL support, an interface browser and interface editors. The product supports concurrent editing of multiple components and pallets, which can be used to save and reuse components. (See product review, *HP Professional*, January 1993, p. 48).

Alsys, formerly TeleSoft, offers the TeleUSE UIMS, which supports OSF/Motif, includes an IDT and other tools to manage everything from prototyping to maintenance. Well-suited to large development teams, TeleUSE features the Dialog ("D") scripting language that handles communications between the GUI and the application code, eliminating the need to write C code. For easy portability, TeleUSE can import UIL code, features C++ support and can be integrated with third-party tools, including CenterLine's CodeCenter and ObjectCenter, Pure Software's Purify error-detection software, and several widget sets. (See TeleUSE product review, *HP Professional*, November 1992, p.42).

Another UIMS for OSF/Motif is XFaceMaker from Non Standard Logics, a European company that has expanded to the U.S. XFaceMaker features an intuitive design that enables users to prototype interfaces dynamically before creating an application. Included with XFaceMaker is FACE, a C-like scripting language that developers can use to write callback scripts in order to test the interface's behavior during construction. With XFaceMaker, users can import UIL code, generate ANSI C or UIL code, use dialog boxes for editing menus, and incorporate object-oriented templates for enforcing a style guide. Also available is the Widget Factory for creating custom widgets. (See Product Watch, *HP Professional*, January 1993, p. 14).

Multiplatform Mania

WHILE THE GUI WARS may have settled down, the reality is that it's not unusual to have several different platforms in a single shop. Cross-platform development systems help simplify the porting of applications from one platform to another. Such products include Neuron Data's Open Interface, XVT Portability Toolkit from XVT Software, Visix' Galaxy and Open Inc.'s Aspect.

Neuron Data's Open Interface is an object-oriented application development toolkit for building graphical user interfaces that can be ported across industry-standard platforms, including OSF/Motif, Open Look, MS-Windows, Presentation Manager and the Macintosh. Open Interface consists of an Open Editor, a WYSIWYG interface builder used to draw the application interface, and a set of libraries for managing the user interface. An extensive widget set supports every GUI function on every platform, with the appropriate look and feel.

Aspect from Open Inc. uses portable user interfaces, so it's not necessary to recode for every windowing system. Developers can add custom control definitions for special applications. Aspect's Interactive Resource Builder saves descriptions of user interface objects in portable resource files, enabling developers to change the look of the user interface without affecting program logic.

XVT Software's XVT Portability Toolkit enables developers to build and maintain C or C++ applications that are portable

Introducing the most powerful look in PC connectivity for the '90s and beyond:



If this logo seems familiar, don't be surprised. You already know us for our award-winning connectivity software. And while we're changing our look, we're not changing our company. Or our quality. Or our highly-commended technical support. The logo simply links our company with our product line and expresses our commitment to move ahead. It's a look that shows we're thinking of the future. So whether you want to connect your PCs to HP, VAX/VMS, UNIX, or IBM hosts, you can count on Reflection for a long, long time.

For information on Reflection products

**CALL
1-800-92NETWORK**

to OSF/Motif, Open Look, MS-Windows, Macintosh, and Presentation Manager GUI platforms. Additionally, the XVT Portability Toolkit supports character-based interfaces for DOS and many UNIX environments, including HP-UX 8.0 on the HP 9000. Also available is XVT-Design, an interactive design tool and application generator that enables software developers to create GUI resources, such as windows and dialog boxes, and design the layout graphically.

Last but not least is the Galaxy Application Development Environment from Visix, developer of the Looking Glass desktop managers. Galaxy is a complete development and runtime environment, which also features a networking layer for con-

nectivity to a server. It features a uniform multiplatform Application Programming Interface (API), portable architecture, look-and-feel independence, and supports numerous communications protocols including TCP/IP.

Building To Specs

IN ADDITION TO UIMS PRODUCTS and multiplatform interface development tools, yet another type of product has entered the growing GUI development market: Dynamic Data Visualization Tools (DDVTs). DDVTs not only provide an environment in which to develop GUIs but also allow changes during runtime according to system and network variable data. V.I.'s DataViews, which falls into this category, enables application developers to build an interface to depict, analyze and regulate real-time scientific or industrial processes. DataViews includes an interactive drawing editor for creating customized user interfaces and a comprehensive subroutine library for managing and manipulating displays.

Despite the large number of multipurpose products already in the GUI builder market, the number of specialized GUI tools continues to grow. To build Windows front-ends, there's Frontender! for Windows from Austin-based startup Zebra Software Development Co. Frontender! takes advantage of WRQ's Reflection for Windows (and other emulation software) to build GUIs for applications running on the HP 3000 or DEC VAX. Vermont Creative Software's Vermont Views offers a character-based interface tool that supports DOS and UNIX platforms, including the HP 9000 series under HP-UX. Meanwhile, database developers can take advantage of the several 4GL GUI development tools, such as JYACC's JAM, Oracle Tools, and ASK/Ingres' Window products.

Mike Foody, president of Visual Edge Software, developer of UIM/X, says that corporations, ISVs, and system integrators all have different needs, whether that means building applications for internal use, doing new development for resale or tailoring applications for downsizing situations. Vertical applications, including CAD and database development, have other requirements. Foody emphasizes that demand for GUI-based development tools has expanded significantly beyond the early adopters, who were generally sophisticated C++ programmers. "In the future, there will be more tools that are visually oriented, supporting multiple platforms, and with a movement toward C++," he predicts.

GUI builders can help reduce prototyping and development time, save money, and greatly simplify maintenance. While some OSF/Motif and C expertise is generally required, the programmer's prerequisites vary according to product. The trick is to choose the product most suitable to your development environment and the expertise of your in-house staff.

COMPANIES MENTIONED IN THIS ARTICLE

Alslys (formerly TeleSoft)
5959 Cornerstone Court, West
West San Diego, CA 92121-9891
(619) 457-2700
CIRCLE 338 ON READER CARD

The Ask Group
2440 El Camino Real W.
P.O. Box 7460
MountainView, CA 94039
(415) 969-4442
CIRCLE 355 ON READER CARD

CenterLine Software Inc.
10 Fawcett St.
Cambridge, MA 02138-1110
(617) 498-3000
CIRCLE 337 ON READER CARD

Integrated Computer Solutions Inc.
201 Broadway
Cambridge, MA 02139
(617) 621-0060
CIRCLE 336 ON READER CARD

JYACC
116 John St.
New York, NY 10038
(212) 267-7722
CIRCLE 335 ON READER CARD

Neuron Data Inc.
156 University Ave.
Palo Alto, CA 94301
(415) 321-4488
CIRCLE 334 ON READER CARD

Non Standard Logics Inc. (NSL)
99 Bedford St.
Boston, MA 02111
(617) 482-6393
CIRCLE 333 ON READER CARD

Open Inc.
660 Southpointe Ct.
Suite 200
Colorado Springs, CO 80906
(719) 527-9700
CIRCLE 332 ON READER CARD

Oracle Corp.
500 Oracle Pkwy.
Redwood Shores, CA 94065
(415) 506-7000
CIRCLE 331 ON READER CARD

Pure Software Inc.
1309 S. Mary Ave.
Sunnyvale, CA 94087
(408) 720-1600
CIRCLE 330 ON READER CARD

Vermont Creative Software
1 Pinnacle Meadows
Richford, VT 05476
(802) 848-7731
CIRCLE 329 ON READER CARD

V.I. Corp.
47 Pleasant St.
Northampton, MA 01060
(413) 586-4144
CIRCLE 328 ON READER CARD

Visix Software Inc.
11440 Commerce Park Dr.
Reston, VA 22091
(703) 758-2727
CIRCLE 327 ON READER CARD

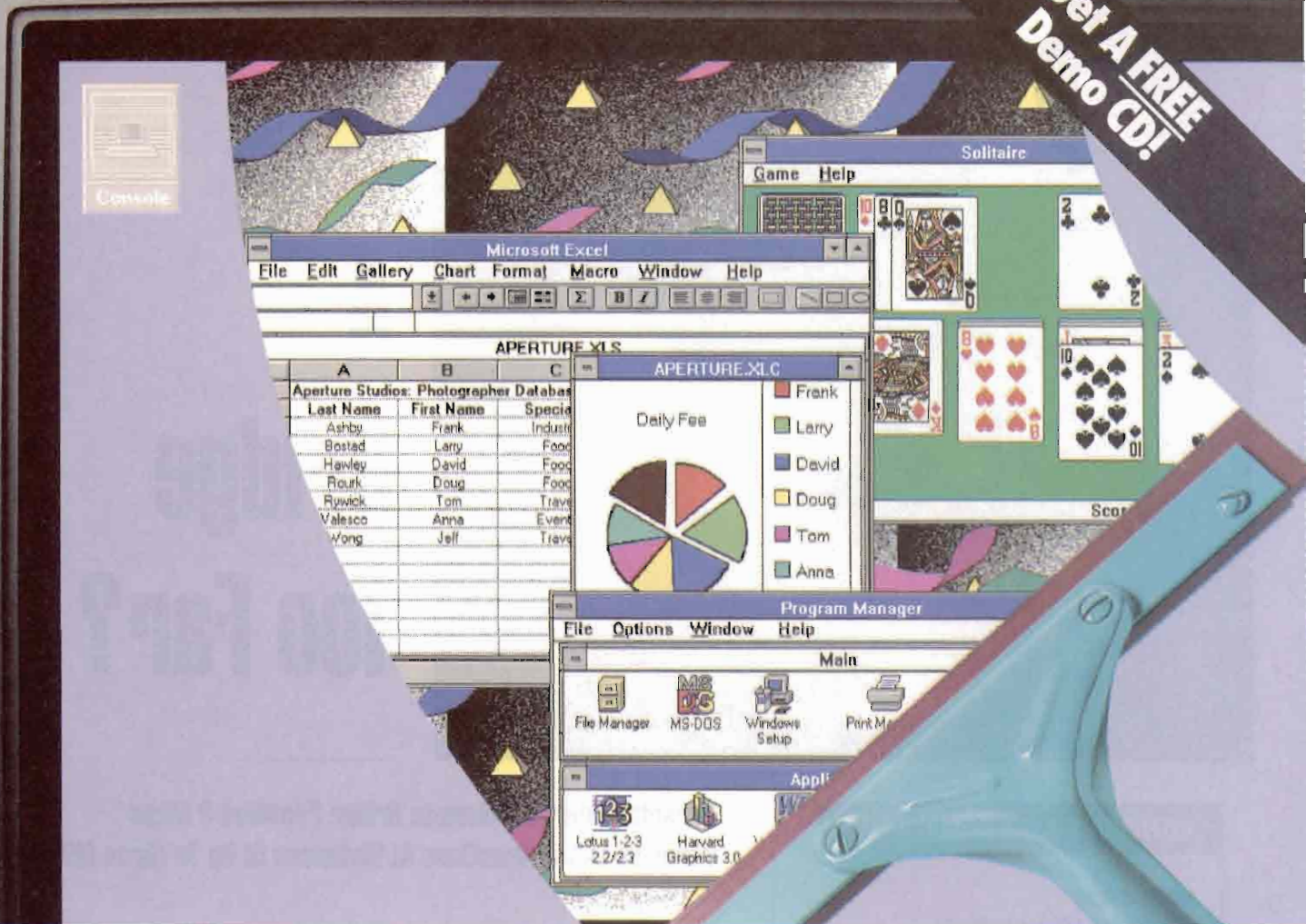
Visual Edge Software Inc.
3870 Cote Vertu
St. Laurent, Quebec
Canada H4R 1V4
(514) 332-6430
CIRCLE 326 ON READER CARD

XVT Software Inc.
4900 Pearl East Circle
Box 18750
Boulder, CO 80308
(303) 443-4223
CIRCLE 314 ON READER CARD

Zebra Software Development Co.
2108 LeWood Circle
Austin, TX 78745
(512) 444-3320
CIRCLE 313 ON READER CARD

Would you like to continue to see articles on this topic?
Circle on reader card
yes 340 no 339

Get A FREE
Demo CD!



Now Your HP 9000[®] Does Windows Too.

Microsoft
Windows 3.1
Pre-installed and
ready to use

SoftPC[®] 3.0 with Windows[™] is the award winning software solution for running MS-DOS[®] and Microsoft Windows applications on HP 9000 PA-RISC and Motorola[®] 68000 based workstations.

Now you can run HP-UX[®] software and Windows software side by side. You can even share files between the two environments.

Just select the SoftPC icon and you can run any

standard-mode Windows application you want. *Fast.* SVGA graphics too, of course. Select any UNIX window, and you're back to your HP-UX environment.

And, SoftPC 3.0 with Windows includes Microsoft Windows 3.1 and MS-DOS pre-installed and ready to run. Plus, we've added special optimized drivers to give you the performance you need.

So while a PC is just a PC, "SoftPC 3.0 with Windows" makes your HP 9000 both a workstation and a PC with Windows.

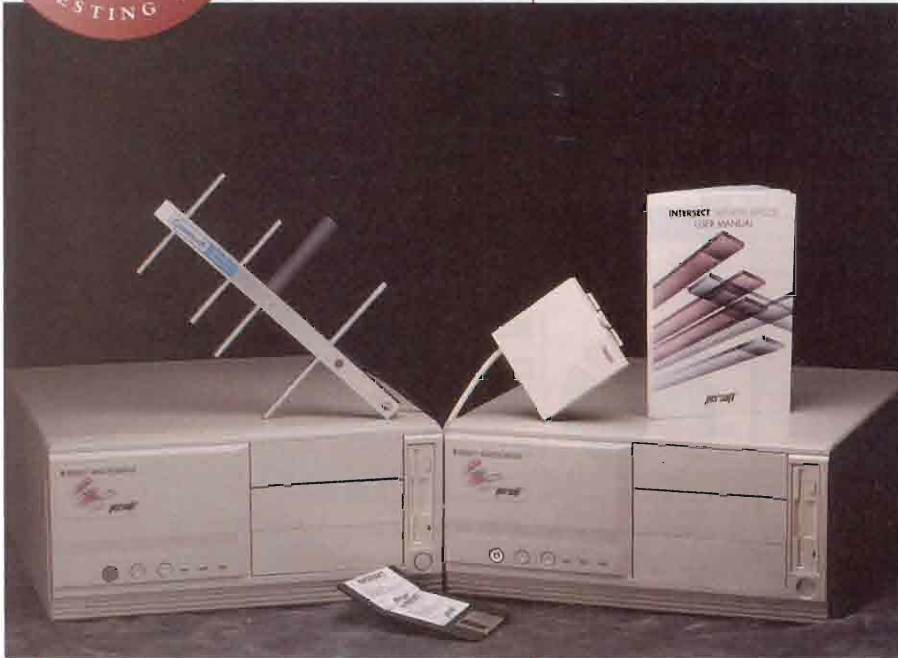
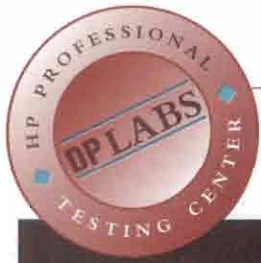
Just call 508-682-7600 for your free demo CD. After all, if you can run Windows and have your HP 9000 too, you've got a very clear advantage.

Insignia Solutions
Bridging Worlds Of Software[™]



For information on all of Insignia's products and services, call Insignia Solutions Inc, River Bend Business Park, 6 Camporelli Drive, Andover, MA 01810, TEL: 508-682-7600, FAX: 508-688-8294.
To place an order, call Insignia Solutions Inc, 526 Clyde Avenue, Mountain View, CA 94043, TEL: 800-848-7677, FAX: 415-964-5434
European sales and support: Insignia Solutions Limited, Kingsmead Business Park, London Road, High Wycombe, Buckinghamshire, HP11 1JU, UK, TEL: +44 494-459426, FAX: +44 494-459720
Insignia Solutions Inc, SoftPC[®] and Insignia are registered trademarks of Insignia Solutions Inc. MS-DOS is a registered trademark and Windows is a trademark of Microsoft Corporation. HP 9000 and HP-UX are registered trademarks of Hewlett Packard Corporation. Motorola is a registered trademark of Motorola Corporation.

CIRCLE 458 ON READER CARD



A Bridge Too Far?

INTERSECT REMOTE BRIDGE

OBSERVATIONS:

- Portable LAN connectivity.
- Easy to install.
- Protocol- and operating system-independent.
- Truly plug-and-play solution.
- Supports Ethernet and Token Ring.

PRICE: \$6,995 each for Intersect Remote Bridge for Ethernet and Intersect Remote Bridge for Token Ring.

PLATFORM: All network operating systems and protocol traffic.

Persoft Inc.

465 Science Dr.
P.O. Box 44953
Madison, WI 53744
tel: (608) 273-6000
fax: (608) 273-8227

CIRCLE 306 ON READER CARD

Persoft's Intersect Remote Bridge Provides 2 Mbps Wireless LAN Connections At Distances Of Up To Three Miles

If you've never connected two LANs separated from each other by a large geographic distance, you might think it's an expensive proposition. Leased T1 lines can be costly to install, and monthly charges are significant. Fortunately, Persoft's wireless Intersect Remote Bridge, which connects two physically separate LAN segments with the use of broad-spectrum radio, can do the same job for less money.

The Intersect Remote Bridge supports two major network hardware interfaces, Ethernet and Token Ring. The Ethernet version supports thick, thin and twisted-pair wiring. Implemented at the MAC layer, the bridge is protocol-independent and supports many common Ethernet protocol types, including Novell, Banyan and HP Probe. It also offers filtering capabilities that reduce unnecessary network traffic and enhance security by controlling access to segments that carry sensitive data. It can be configured to control access to the bridge by Ethernet address, protocol or, if applicable, IP address.

Based on a 386SX PC with 640 KB of base memory and 256 KB of extended memory, the bridge unit sports a serial port; two parallel ports, which go unused, a female F connector for the radio antenna, a 2,400-baud modem, a monochrome CRT port, and connectors to join the built-in network interface to three types of Ethernet media. It also comes

Marty Levine

The Adager Functions

ADAGER MODEL 1:
DAILY MAINTENANCE

Diagnostics and Repair

- Broken chains (either specific detail or synonym chains, or ALL the chains in a path)
- Root file inconsistencies
- Global dataset counts and pointers
- Master dataset entry inconsistencies

Maintenance

- Manage dataset capacities
- Repack detail datasets to improve their performance
- Reblock datasets (optionally modifying global database buffer size)
- Relocate datasets to specific disc devices or classes
- Modify security provisions
- Erase datasets (delete all the entries in specific datasets)
- Recreate missing dataset files
- Rename fields, items, datasets
- Change primary path definition

Reporting

- Capacities of all datasets
- Characteristics of data items
- Characteristics of datasets
- Paths
- Schema

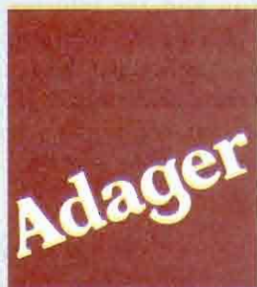
Database-level Functions

- Copy databases
- Cremate databases (first erase and then purge all datasets)
- Rename databases

Restructuring

- Add: Data items to databases
- Fields to datasets
- Datasets to databases
- Paths between masters and details
- The sort feature to paths
- Delete: Data items from databases
- Fields from datasets
- Datasets from databases
- Paths between masters and details
- The sort feature from paths
- Change: The characteristics of data items (and their fields) in all datasets
- The characteristics of fields in a specific dataset
- The type of datasets (i.e. automatic, manual, detail)
- Shuffle: The order of datasets
- The order of fields within dataset entries

ADAGER MODEL 2:
THE FULL POWER



The Adapter/Manager for IMAGE/3000 Databases

The Adapter/Manager for TurboIMAGE Databases

The Adapter/Manager for TurboIMAGE/XL Databases

Sun Valley, Idaho 83353-0030 U.S.A.

Telephone: +1 (208) 726-9100 or toll-free from Canada and U.S.A. (800) 533-7346
Fax +1 (208) 726-8191 Telex 40-3392 Adager EasyLink 6289-6060

with a 1.44-MB floppy drive for running the bridge software, but does not have — nor need — a hard drive. You'll need at least two of these units to connect two remote LANs.

Each bridge unit comes with two radio antennas: an omnidirectional antenna designed for indoor use at distances of up

to 800 feet and a directional antenna supplied for outdoor use at distances up to three miles. Persoft also supplies a 33-foot antenna lead-in cable with each bridge unit.

Software for the bridge consists of two master diskettes and a copy of SmarTerm 320, a software product that allows a DOS

PC to be used as a VT-series terminal. Persoft also supplies one null-modem cable that can be used to connect a terminal or a PC running SmarTerm to the bridge's serial console ports.

The Omnidirectional Option

The Intersect remote bridge is easy to set up and use. We unpacked both units and set them up approximately 150 feet apart. We started our evaluation using the omnidirectional antenna.

First, we tacked up the antennas for temporary mounting and testing. Each antenna screwed into the F connector on the back of a PC. We used a PC running SmarTerm as a console on our first bridge unit. We connected it to the bridge by hooking the null-modem cable supplied to the serial ports of the two systems. Then we connected a monochrome monitor and a standard PC keyboard to the other bridge unit.

At sites that have PC hardware, a PC can be turned into a terminal using the SmarTerm software supplied with the Persoft bridge. Once the bridge is configured, these console devices can be disconnected.

Next, we hooked one bridge into one of our thin Ethernet LANs and connected the other to a segment of thin Ethernet that ran between the bridge and a PC running version 2.05 of FTP Software's PC/TCP. Booting from copies of the remote bridge master diskettes, we brought each bridge up and, from the startup menu, selected the RangeFinder option. At the next screen, we entered a name for the bridge unit and accepted the default of 0 x 300 as the base I/O address for the unit's wireless adapter card.

Once you have both bridges configured, both consoles display the main screen of the RangeFinder. For each bridge, you see statistics on transmitted packets, received packets and the percentage of transmissions received successfully. You also see information on relative signal quality, the signal-to-noise ratio and the strength of the signal. Each bridge sends a steady stream of 72 packets per second, containing performance

Is the Network Not Working



Is poor user productivity a problem in your business? Missed deadlines? Frustration in reaching your corporate goals?

In today's highly competitive environment, you don't need the hassle of dealing with complex network problems. If you want to get the network under control and get back into what you do best, you need to call on *experienced network specialists*.

Tryonics Technical Consulting Group

Because networks are our business, we are your best resource for network and software administration. Our professional consulting and support team is highly experienced in managing UNIX-based environments. We can help you increase productivity and control costs, no matter what the size or complexity of your network. And we can implement cutting edge technology when it's right for you. We have the total solution for your network operations.

▶ ▶ ▶ **We'll make it work.**

Long-term or project-based contracts available. Call 1-800-551-6236.

tryonics inc.
Workstation Computers and Services

Tryonics Inc. 170 West Road Portsmouth NH email: consult@tryonics.com Fax 603-427-6843

CIRCLE 300 ON READER CARD

Today's software development is a battlefield. *Choose your weapons wisely.*

With rising costs, increasing competition and demands for productivity now, more than ever, you need the right weapons to win your development battles. At CCS we've been supplying world class software weapons for more than 14 years. We can arm your programmers to win with software like:

C language compilers for MPE XL, MPE V and RTE A. All optimized for their host environments yet able to produce highly portable code. Our C helps you write bulletproof multi-platform applications.

TRAX source level debuggers designed to allow you to blast bugs at the source code level. We have debuggers for C and COBOL on a variety of HP host computers.

Vi source code editors lets your UNIX storm troopers attack problems on MPE or RTE without having to learn how to fly a new editor.

All of CCS' software weapons systems come with a 30 day no-cost demonstration so you can check out our impressive fire power on your own battlefield. Like it or not, it's war out there -- **CCS can make sure you win.**



**CCS SOFTWARE WEAPONS
★★ FOR THE 90'S ★★**



Corporate Computer Systems, Inc.
33 West Main Street Holmdel, NJ 07733 USA
908-946-3800 FAX 908-946-7167

data of the transmitting bridge. The RangeFinder module just looks at packets; it does not request retransmission of corrupted packets.

What RangeFinder does do, however, is help you position the antennas for maximum performance. The Intersect manual provides a list of detailed steps to follow for proper aiming of the antennas. In our case, at 150 feet and with a line of sight between antennas, we had a 100 percent successful receive rate at both ends of the bridge. Signal statistics indicated that we had an excellent connection.

Go Configure

Leaving RangeFinder, we returned to the Intersect main menu and configured each bridge. Selecting the configuration option, we gave each a unique network ID and configured our bridge network interfaces for thin Ethernet.

The access control options within the configuration subsystem let network administrators regulate node access to the

bridge. You can control traffic by Ethernet hardware address. You also can control bridge access by network protocol. For example, you could restrict Novell packets to one side of the bridge while allowing TCP/IP packets and DECnet packets to pass through. The bridge also gives you another layer of control over IP packets by allowing you to specify bridge access by IP address.

Access control works in one of two modes. You can configure the bridge to filter certain nodes or protocols and restrict them to a segment, or you can specify which nodes or protocols are allowed to forward or send traffic across the bridge. Within any of the methods of specifying packets, you can filter or forward, but not both.

You can, however, mix filtering and forwarding across packet specification schemes. You could filter certain protocols and forward traffic from specific IP addresses. Each side of the bridge can filter or forward packets from up to 5,000 Ethernet hardware addresses and up to

512 IP addresses. You also can filter or forward up to 32 different packet types.

Another configuration option, spanning tree parameters, allows you to place redundant sets of bridges between two LAN segments without creating network loops. By adjusting parameters such as the priority of bridges, wired and wireless ports, and the costs of wired and wireless paths, you can create a fault-tolerant, wide-area network in which a failed bridge will always be replaced by the best available unit.


The configuration menu lets you save configuration parameters in a file or preserve them in a hard-copy printout. Persoft suggests doing both.

Remote Possibilities

After we had aimed our antennas and configured the bridge units, we went back to the main menu and selected remote bridge operation. The remote bridge program screen listed information about the status of both sides of the bridge.

Running FTP's PC/TCP, we used the ftp utility from one DOS-based PC to attach to another DOS-based PC running as an ftp server. With both PCs on the same Ethernet segment, we were able to transfer a 1.5-MB file in 32 seconds. When we performed the same transfer across our Intersect bridge, it required 53 seconds. Not bad for a 2 Mbps remote connection! Later, we tried the same test using the directional antennas between two buildings. With the antennas approximately 300 feet apart, we transferred the 1.5-MB file in 54 seconds.

The obvious reason for selecting a wireless network bridge is convenience. But there are other less obvious and perhaps more compelling reasons. For instance, suppose a small fire in your telephone switch room makes your leased lines unusable. If the other side of your line is less than three miles away, you could use this Persoft product to re-establish the connection quickly and without a lot of hassle. Products such as the Intersect Remote Bridge are great for environments and applications that require this kind of flexibility. ■



FAX From Your HP 9000

**"We like the way VSI-FAX easily integrates with our applications."
-Dale Burley, MIS Director, The Santa Cruz Operation**

"VSI-FAX is an excellent product...a joy to use." - UNIX Review, November 1992

Thousands of businesses have changed the way they communicate by using **VSI-FAX**, you can too. Call us now!

**VSI-FAX is available for: X86 UNIX • SCO • V.3 • V.4 • IBM • Hewlett-Packard • SUN • DEC •
Data General • Motorola • Pyramid • Sequent**

Call today for more information!

V-Systems, Inc.

39 Brookhollow Drive, Santa Ana, CA 92705 • Phone: 714-545-6442 • FAX: 714-545-7653

CIRCLE 128 ON READER CARD

UP UNTIL NOW, MULTIMEDIA ON YOUR HP® WORKSTATION HAS BEEN HOCUS-POCUS

Finally, full multimedia on your HewlettPackard® Series 700 workstation is a reality.

It's brought to you by MediaMagic, a company that has worked hand-in-hand with HP for over 17 years. And it has all the necessary parts needed to plunge you into the world of multimedia.

VIDEO—AUDIO—COMPRESSION

Prepare to be dazzled by live 24-bit full-motion video accompanied by CD-quality audio. Adding sound and motion will transform the way you think about your workstation. It may even change the way you plan your next project.

However, the video and audio components really pay off when you add *JPEG*—a compression daughter card that allows you to store, edit and play back video and audio at 30 frames per second.

MAKE YOUR OWN MAGIC

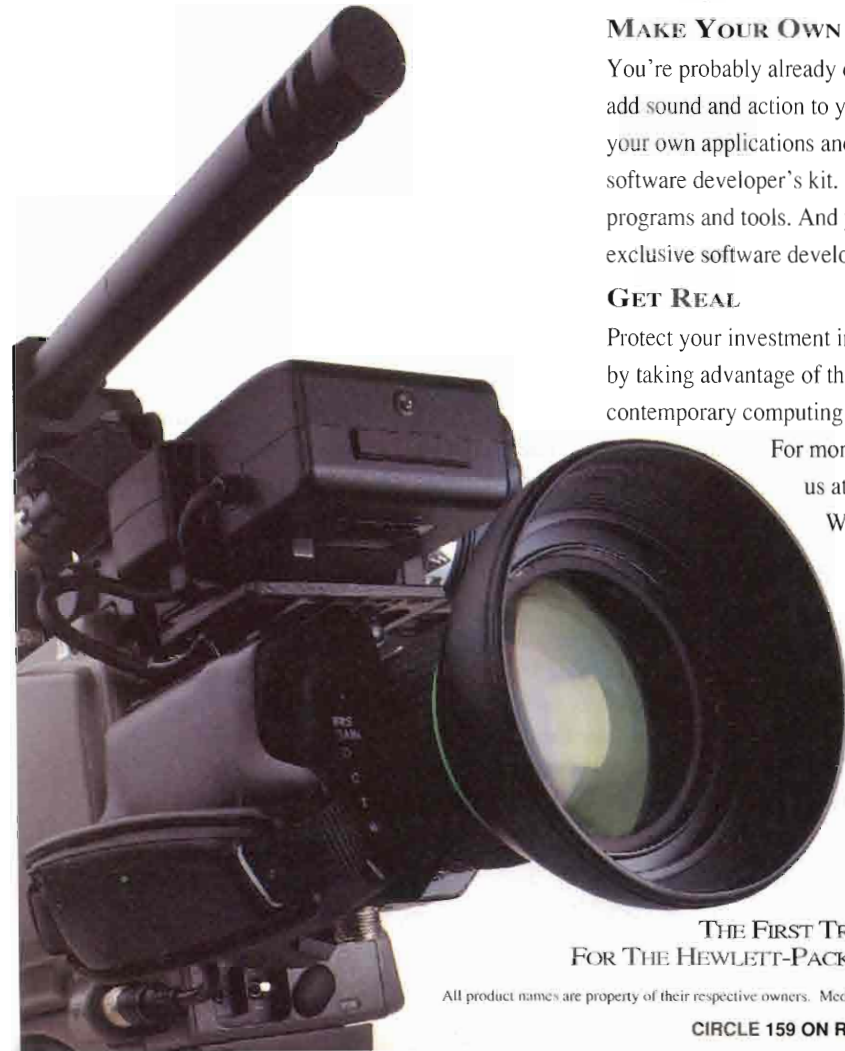
You're probably already dreaming of a few new ways to add sound and action to your next project. If you want to write your own applications and make them happen, get our software developer's kit. It's available along with sample programs and tools. And you'll get to take advantage of the exclusive software developer's hotline.

GET REAL

Protect your investment in your HP Series 700 workstations by taking advantage of the single fastest growing trend in contemporary computing - multimedia!

For more information please contact us at (214)669-3408.

We'll make a believer out of you.



THE FIRST TRUE MULTIMEDIA INTERFACE CARD
FOR THE HEWLETT-PACKARD® SERIES 700 WORKSTATIONS.

All product names are property of their respective owners. Media Magic, Inc. 222 Municipal Drive Richardson, TX 75080.

CIRCLE 159 ON READER CARD



More Than A Pretty Face

VISIMAGE

OBSERVATIONS:

- Client-server model, end-user data reporting/extraction utility.
- Multiplatform, multidatabase.
- Local prototyping for list and report creation.
- Power for the sophisticated user.
- Ease of use for the novice.

PRICE

The ASKPLUS server is CPU-based and ranges from \$2,500 to \$25,000. Pricing for VISIMAGE PC is \$500 per copy (a network version — five users — is available for \$1,875).

PLATFORM:

VISIMAGE PC client: IBM AT or compatible with 640 KB, a hard drive with at least 3 MB free, and MS-DOS 3.1 or higher.

ASKPLUS server: HP 3000 (MPE V and MPE/IX native mode), HP 9000 series 800 and 700 (HP-UX).

File structures supported include: flat files, indexed sequential (KSAM or CISAM), TurboIMAGE, ALLBASE, ORACLE, INFORMIX, and INTERBASE (STARBASE).

VITAL Soft

1153 Bordeaux Dr.
Suite 101
Sunnyvale, CA 94089-1210
tel: (408) 745-7680
(800) VITALSOFT
fax: (408) 745-6681

CIRCLE 303 ON READER CARD

VITAL Soft's VISIMAGE Transforms A User-Friendly PC Interface And Host-Based Report Writer Into A Client-Server Data Access Tool

VISIMAGE PC developed by the French firm Cogelog (now ARES), seeks to merge the user-friendliness of a PC interface with the powerful capabilities of a host report writer, ASKPLUS, to create a client-server tool suitable for all levels of users.

VISIMAGE and ASKPLUS are distributed and supported in North America by VITAL Soft, a wholly owned subsidiary of ARES.

With VISIMAGE, it's easy to access data from a host computer. With a few keystrokes (or mouse clicks for you mouseketeers), you can locate what you want in a database, and produce everything from simple lists to sophisticated reports. The lists/reports can be directed to different types of output devices and can even be downloaded directly to the PC in a format compatible with popular PC programs.

A PC Client That Works

VISIMAGE PC has two components. One part of the program (ASKPLUS) works with the host computer and the other part (VISIMAGE) works with your PC. The PC part is used to create query requests and to design lists and reports. The host computer part (or server) is then activated by the PC to carry out the request. The result is sent back to the PC for display. The PC-host communication pipeline is handled seamlessly by Walker, Richer & Quinn Inc.'s PPL.

John P. Burke

Why not the best?



HP 1000,
HP 3000 &
HP 9000

8 & 25 Gigabyte
Streaming Tape Drives

96 Gigabyte
DDS Autochanger

Unattended backup of
all data onto compact
cartridges

Media Translation &
SS update service
available

Also Available:

HP 1000 Memory

Improves system performance. Free evaluation.
2 to 32 MB for A990, A900, A700, A400,
A600+, & A600. Ten year warranty.
Field Expandable



HP 1000 & HP 9000 SCSI Disk Drives

Capacities to 2 GB with full five year warranty.

HP 1000 & HP 9000 Optical Discs

1 Gigabyte Rewritable & Multi-function. Ideal for
information retrieval and archival data storage

Superclock/1000 Automatic time & date

*"I promise you —
no service hassles, no
matter who is servicing
your HP system."*

Rick Walsh
President

HERSTAL

Automation Ltd.
3171 W. Twelve Mile Road
Berkley, MI U.S.A. 48072-1339

E-Mail SALES@HERSTAL.COM
FAX 1-313-548-2010
Phone 1-313-548-2001



The Power of Efficiency

EDI WINDOWS™ Enabling technology for business in the '90s

Successful businesses across North America know that Electronic Data Interchange (EDI) is bringing true automated efficiency to a host of everyday tasks formerly done by hand. *EDI WINDOWS* enables the link from your HP3000, HP9000 and other open system platforms, to those all-important customers and suppliers, for purchase orders, quotations, invoices and much more.

EDI WINDOWS supports X12, EDIFACT, TDCC Standards and many more. In the electronic marketplace, *EDI WINDOWS* can work for you.

**For powerful solutions,
call 1-800-ANSWERS**

M. B. Foster Associates Limited
50 Water Street
P.O. Box 580
Chesterville, Ontario
Canada K0C 1H0
Tel (613) 448-2333
Fax (613) 448-2588



Your Integration Software Supplier®

EDI WINDOWS is a trademark of trinary systems inc.

CIRCLE 155 ON READER CARD

VISIMAGE PC is *much* more than just a fancy front end for a command-driven report writer. It maintains a local dictionary, (a set of PC files stored on the PC), which describes the contents of the host databases and files. The local dictionary is built from either a host dictionary, or directly from the database root files.

With this local dictionary in place, everything involved in the preparation of the selection and report request is completed on the PC without placing any load on the host. Only when the selection or report is actually called for is the server on the host activated.

To test the program's intuitiveness, I worked extensively with VISIMAGE PC before opening the manual. VISIMAGE PC has a very natural feel and is very easy to use. When I finally did crack the manual, I worked through the first six chapters, using the supplied test database and then was ready to give the access tools a try on one of my favorite TurboIMAGE databases.

When working from an existing database, you have many options, including HP Dictionary, a special ASKPLUS dictionary, or an interface to the Powerhouse dictionary. However, if you know the database well enough and are just doing casual inquiries like I was, a simple two-line EDITOR format file will be all the set-up you need. (VISIMAGE will read the database root file.)

There are many ways to move about in VISIMAGE PC. For rodent fans, there is reasonably full mouse support. I say "reasonably full" because there are some control functions that still require the use of the keyboard (e.g., scrolling the on-screen LIST and REPORT displays appears to be impossible using the mouse alone). Also, like most character-based "windowed" systems, the mouse pointer is a clunky box that moves around more or less in synch with the mouse movements.

In fairness, however, I should also point out that because VISIMAGE is character-based, it performs quite acceptably on an old 286 Vectra with DOS 3.3. (A full graphics-based MS-Windows 3.1 version of VISIMAGE is expected in late '93 or early '94.)

VISIMAGE PC has a complete complement of accelerator keys. At any time, depressing SHIFT+F1 will display all the accelerator keys along with a brief description of their use. And then there are the good old ALT+'letter' pull-down menus. As I said, a plethora of choices.

Tight Third-Party Integration

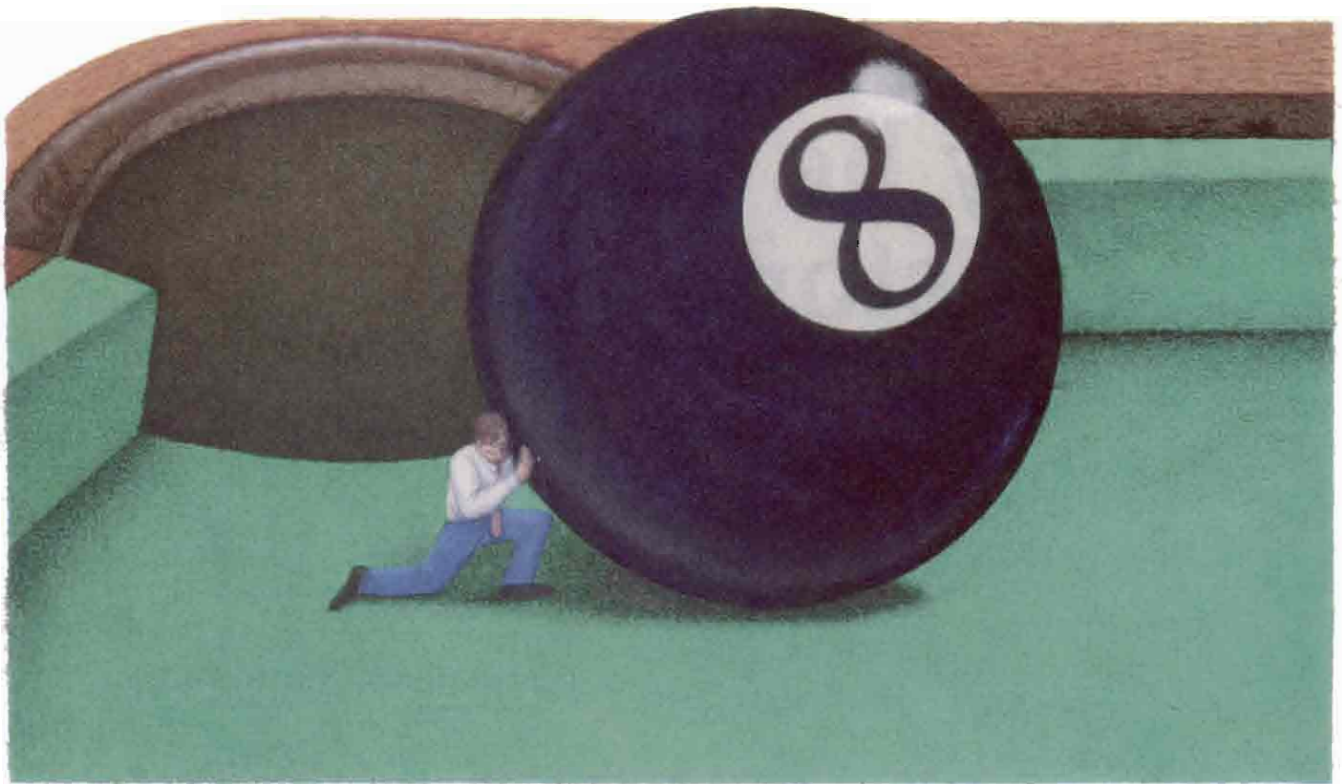
VISIMAGE is particularly adept at handling "missing" data — for example, the situation where there is no entry in a secondary file corresponding to an entry in the primary file.

VISIMAGE PC also has interfaces for either SUPERDEX (Bradmark Technologies Inc.) or OMNIDEX (Dynamic Information Systems Corp., DISC). And the Accessory Menu can be customized to directly call external programs, like Lotus 1-2-3 or Microsoft Excel, without leaving VISIMAGE or terminating the server connection.

Procedures created in VISIMAGE PC can be saved and reused. In fact, they are usable directly by ASKPLUS. Also, you may save a description of a procedure along with the procedure itself so that when it is opened, the description is loaded into VISIMAGE's notepad. VISIMAGE PC has a set of functions (called special operators in VISIMAGE terminology) for manipulating items plus hooks for user supplied functions and a macro capability.

One of the most difficult factors in integrating an end-user report-writer with a third-party application is the initial set-up. For example, the field names in the application databases often are difficult to reconcile with a meaning. VITAL Soft has created VISIMAGE dictionary templates for many of the more popular application systems and make these available to customers of VISIMAGE PC.

VISIMAGE PC successfully merges the power, speed and inherent intuitiveness of the PC user interface with the proven industrial-strength report writer ASKPLUS to create a tool powerful enough for the most sophisticated data analyst yet accessible to even the most casual user. ■



I Hate It When This Happens!

Does Your Cobol Programming Backlog Have You Behind The Eight Ball?

PROTOS

800/531-5473
In Texas: 512/869-1175
FAX: 512/869-5858

Protos Software Company
P.O. Box 164050
Austin, Texas 78716 USA

If you appreciate the performance of COBOL, but are frustrated with the tedious and time-consuming coding requirements, you should be using the **PROTOS** programming language.

PROTOS is the full-featured programming language that generates the same COBOL source code that you are used to running, but with only a fraction of the programming effort. **PROTOS** also takes care of V-Plus and Image calls. If time is money, and you spend any significant amounts of time programming in COBOL, then you can't afford not to take a look at **PROTOS**.

PROGRAMMING PRODUCTIVITY and **MACHINE EFFICIENCY** - That's the name of the game. You need not sacrifice one to achieve the other. **PROTOS** is a rich programming environment with a powerful report writer built in. **PROTOS** is tuned to the HP3000 and its fundamental operating system. You can't buy a 4GL that is better suited to the MPE (V, XI, or IX) environment.

SOFTWARE DESIGN FLEXIBILITY - (During a recent survey of over one thousand HP3000 users, we found that 93% of the users of our competitors' products also program in COBOL to overcome the limitations of predetermined logic. **PROTOS** is completely free of such restrictions.

Don't let yourself get snookered behind the eight ball.

PROTOS FROM THE FIRST IT'S FAST!

CIRCLE 225 ON READER CARD

Why be stuck in the stone age...



when our information management tools can help you discover the future?

Any job can be more difficult if you don't have the right tools. Without the right software, you may think your information management system came from the stone age. With proper tools, you can do your job more efficiently and reap the benefits of higher productivity.

At NSD, we develop software tools to help meet the challenges facing data centers and MIS departments. All of our products are designed to save time and money, and make the most of your available resources. Our products include:

JobRescue™, our flagship product, is a sophisticated job management and error detection program. JobRescue eliminates \$STDLIST printing and review by automatically detecting errors.

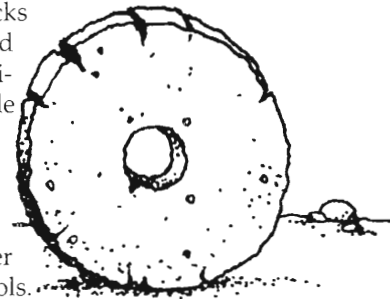
JobTime/3000™ automates the task of scheduling batch processing activities. You can plan long- or short-term schedules, and regular or one-time activities.

ElectroPage/3000™ allows you to access reports on-line so that you can review, save and manage your reports without printing a single page. With ElectroPage, you have control over report storage, retrieval, access, printing and distribution.

TranSpooler™ is a powerful, bi-directional spoolfile relocation program providing manual or automatic transfer between MPE systems or between MPE and HP-UX systems. This tool even transfers to IBM hosts and broadcasts to multiple nodes from a single node.

InterTask™ is a client/server facility allowing an HP3000 MPE system to invoke HP-UX processes on remote HP9000 nodes over a TCP/IP network. Integrate MPE and HP-UX scheduling with your existing MPE scheduling tools.

TimeSync™ is a software utility that automatically synchronizes the internal clocks on various types of networked computers to within one millisecond of each other. Available for a wide range of operating systems, this tool currently supports TCP/IP, Berkeley Sockets, Network Services, ARPA Services, LAN Manager and LAN Manager/X protocols.



At NSD, our standards aren't set in stone. We constantly raise them. We strive to develop superior products to help you meet the challenges of information management now, and into the future. So come out of the information management stone age, and discover the tools that will make your resources work harder for you.

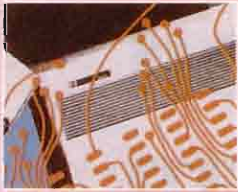
We at NSD think demos are extinct. We give you the complete product with a 30-day, money-back guarantee.

Call today for more product information.

1.800.538.3818



CIRCLE 161 ON READER CARD



NETWORKING

Tim Cahoon

Tomorrow's Network

HP and AT&T Microelectronics recently announced a new high-speed networking standard called 100Base.VG. This new standard, which was presented at the December IEEE 802.3 meeting, was the result of work done by AT&T Microelectronics, HP Labs Bristol, HP Roseville Networks Division and AT&T Bell Labs. Its primary goal is to increase Ethernet bandwidth by making network transmission more efficient.

A few years ago, when we talked about Ethernet, we referred to a big cable that stretched from one end of a building to the other. Workstations contained network interface cards that used Carrier Sense Multiple Access/Collision Detect (CSMA/CD) to send Ethernet packets across the wire in an orderly fashion. These workstation interface cards provided the only intelligence in the network.

Today when you install an Ethernet LAN, you're much more likely to use a wiring scheme that employs a closet-based hub or concentrator — pick your term — to create a network. This intelligent device emulates the venerable Ethernet cable. You still have the intelligent network interface cards in your workstation, sending the Ethernet packets as if you were still on that single cable. In this configuration, all your workstations are connected in a star fashion to this hub. Because the hub is acting as an Ethernet cable, every packet transmitted into the hub is broadcast down each of the spokes, even if that spoke is not the packet's final destination.

In working to increase the speed of Ethernet, HP also began with the para-

digim of the single cable in mind. One potential option was to speed up the clock on the network adapter cards, but this created several problems. Not the least of these was that this methodology caused the radio frequency interface (RFI) emissions to reach levels outside FCC regulations. It also reduced the maximum cabling distance for Ethernet and required the use of Category 5, or Level 5, wiring. Because most office buildings built since 1980 already have the Category 3 wiring installed, everyone who wanted 100-Mbps Ethernet would have had to pull new cable — an expensive proposition. And this would be on

top of the cost of new network cards and hub updates that would be needed.

Hub-Centered Networking

Faced with these problems, HP made a paradigm shift. Building on the current 10Base-T technology, the company changed the Ethernet Media Access Control (MAC) layer. In place of CSMA/CD, HP created Hub-Centric Demand Priority Protocol, which uses Quartet Signaling for transmission. This new protocol became the basis for the new 100Base.VG standard.

Because only the MAC layer is changed with the Hub-Centric Demand Priority Protocol, the format of the actual Ethernet packet remains the same. This provides two benefits. The first is transparent access to applications using Ethernet for communications. None of your applications will know or care if it is running on 10-Mbps or 100-Mbps Ethernets. The second is that 100Base.VG can be simply bridged to slower Ethernets. Because only the Ethernet packet is moved across the bridge, differences in MAC formats don't matter.

Hub-Centric Demand Priority Protocol put all the intelligence of the network into the hub rather than at each workstation. Workstations now have a cheap, dumb network interface card. Packet transmissions are received at the hub and routed on the fly to their destination. Packets are sent only to the destination and are not broadcast to all hosts as on traditional Ethernet. This provides greater security and cuts down on wasted bandwidth. Multimedia and real-time applications now can be given transmission priority over other traffic. No longer will a video conference compete with file transfers for bandwidth.

Quartet Signaling is the new transmis-



sion level for 100Base.VG. Unlike 10Base-T, which uses only two twisted-pair wiring, Quartet Signaling uses four twisted-pair. Because the technology was adapted from the 10Base-T standard, it will be possible to create a single board that can automatically sense the correct signaling system when the cable is connected. This means a workstation could have a single RJ-45 jack into which you could plug either 10Base-T or 100Base.VG, and both would work. Another benefit of Quartet Signaling is that it maintains longer cabling distances and keeps the RFI levels below the FCC regulation limits. In addition, you can use the more prevalent Category 3 cable with 100Base.VG. If you run 10Base-T today, you can run 100Base.VG when it becomes available.

As a network administrator, I like HP's new 100Base.VG proposal. It provides me with higher speeds without the high cost of pulling new cable. Because I'll have to buy new network interface

**HP'S NEW 100BASE.VG
proposal provides you with
higher speeds without
the high cost of pulling
new cable.**

cards and hub equipment with whatever networking update I choose, the savings from using existing cabling become very important. With only the MAC level changing, vendors should be able to update their bridges and hub equipment

fairly quickly and easily. All of this allows me to introduce this high-speed technology and support it transparently to the users. I can mix and match using bridges any way I want.

Initial projections on equipment costs are sketchy at best, but there are some estimates. Equipment first delivered may be about twice as expensive as current 10Base-T products. After 18 to 24 months, the price should drop to around one and one half times the cost of the current 10Base-T products. Prices could drop even faster if vendors can bring products to market quickly.

The 100Base.VG proposal workgroup was to meet in January 1993. The new standard will be on the agenda again for this month's IEEE 803 meeting. If all goes well, you can expect to see products later in 1993.

Would you like to continue to see articles on this topic?
Circle on reader card
yes 348 no 347

**THE
TOTAL
SOLUTION**

sales, service, support

On-time service, on-line equipment—backed by the GE name. Black River takes the risk and worry out of ordering, implementation and maintenance. You're assured:

- Full line of new and previously owned, refurbished 9000, 3000 and 1000.
 - Technically trained maintenance team.
 - Free installation with GE maintenance package.
 - Nationwide service backed by GE.
- Call 216-365-9950 or fax 216-365-3916 for more information.



GE Computer Service

**BLACK RIVER
COMPUTERS**

THE TOTAL SOLUTION
sales, service, support

7630 RACE ROAD • NORTH RIDGEVILLE, OHIO 44039
216-365-9950

CIRCLE 171 ON READER CARD

CUSTOM KEYS

for **Hewlett-Packard**

Full range of legends & key colors

**Custom Keytop Labels
Keyboard Templates & more!**

A total line of keyboard enhancements

Call for **FREE CATALOG!**

Toll free **800 937-1337**



**Hooleon
CORPORATION**

The Leader in Keyboard Innovations™
P.O. Box 230 • Dept. HPRO • Cornville, AZ 86325

CIRCLE 474 ON READER CARD

**IF HP/APOLLO
WORKSTATIONS ARE
YOUR DOMAIN**

**OSC IS YOUR
SOURCE**

- A leader in HP/Apollo service
- On-site/depot maintenance
- Parts evaluation & repair
- Programs to fit your needs
- Quality service & pricing
- 72 hour turn around

**One Source
Computer
Services, Inc.**

249 Cedar Hill Rd.
Marlboro, MA
(508) 481-3600
FAX (508) 481-0991
Corporate Headquarters

CIRCLE 106 ON READER CARD



OBJECTIVELY SPEAKING

Richard Riehle

State Inspection

A physical entity, such as the dial on a television set, could

be said to have states that can be numbered two through 73. The operations to change the state of the dial would be `rotate_clockwise` or `rotate_counter_clockwise`. Each increment in the rotation behavior changes the state of the dial. It would be easy to design a software “class,” DIAL, that could represent the real-world dial on the television set.

Changes in state often are represented with “State Transition Diagrams” (STD). Each state transition can be accomplished using a “modifier.” A modifier is the behavior that causes a change in the state of a software object.

A Class Example

Suppose an application requires a LIST that must be processed as an array. The LIST can have state and behavior that changes its state. In object-oriented design, the developer should not have to design something new; a LIST should be created from a reusable component. For example, using the Microsoft Foundation Class (MFC) for C++, the designer has an array class, COBArray. This class includes modifiers for allocating an array, inserting and deleting from an array and doing garbage collection. It would be senseless to rewrite this class from scratch.

The application LIST may be designed through “inheritance” from the existing array class. A LIST class is designed by extending the facilities of the array class.

To the application developer using the newly designed LIST class, it doesn’t make a difference how the class is developed. In fact, it is often irrelevant how the data is organized or processed. That is, once the class, LIST, is modeled as a

software object, any other software that uses the class should have no visibility to how it is implemented. The structural details of the LIST should be “hidden.”

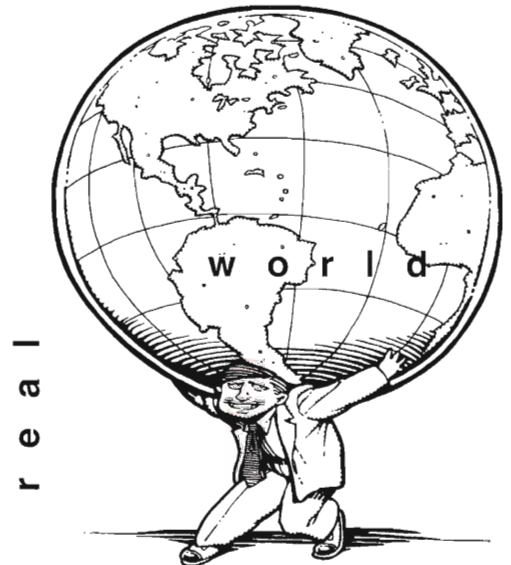
Important to the LIST object user is *what kind* of operations are available as state modifiers. What is the externally visible behavior available to change the state of the LIST?

For example, an Add operation increases the number of elements in the LIST; Delete reduces them. These operations represent *what* modifiers are available, yet don’t provide information about *how* the modifiers do their work. Object-oriented methods always are more concerned with *what* than *how*.

In a complete implementation of the LIST object, many other modifier operations will be necessary to effect state transitions. Moreover, the requirement for such operations will exist independently of the programming language used for coding the LIST. Maybe there will be a need for operations to “insert,” “copy,” “move,” and “sort” or even a “reorganize” operation. Any one of these will be a state modifier.

State’s Witness

A modifier effects a state transition on a software object. A selector returns information about the state of that object. Although this seems obvious, the design of the software object is not complete until it has the required selectors, as well as the state modifiers.



A selector returns information such as `Is_Full`, `Is_Empty` and `Size_Is`. A selector does the work normally associated with “if” statements on visible data in more traditional designs. Because an object is usually implemented as a “private” part of a class, it is impossible to directly inspect the state with an “if” statement. In C++ and Ada, for example, your application code will not have direct visibility to the structure of a private part of an object.

This restricted visibility is designed into objective languages to support the software engineering principle of “information hiding,” a principle that supports the goal of software reliability.

In our example class, LIST, you must consider the limits as well as the benefits in designing a class or package around private parts. The limits and benefits are often the same: No other program

entity can access the details of the LIST without using one of the defined functions.

A class design should include the selectors necessary to return information about all relevant states for the object. Without selectors, a design is not complete. This becomes true once you really understand that "if," "switch" or "case" statements can't access the underlying structure of the LIST.

The question you must ask in this design is, "What selectors are important to represent a complete class definition?" For our example, LIST, it is simple to identify the selectors to determine whether the LIST is empty, full, or how many items are in the LIST. There are other states that may not be quite as obvious.

Across The Threshold

It's easy to overlook the potential value of selectors that return information about

A CLASS DESIGN

should include the selectors

necessary to return

information about all relevant

states for the object.

states that are about to change. These are sometimes regarded as "threshold" states. For example, suppose your LIST size is to the point where inserting one more element will make it full. This is called a threshold. If removing one more item from the LIST will make it empty, that

is also a threshold state. Threshold information is useful when you want to launch some other action before an empty or full condition occurs.

In this case, the design is not complete until the threshold conditions are represented by selectors.

A clever designer may decide to design some general-purpose selectors as virtual functions, C++ templates, or generic formal subprogram parameters to cover those situations where a set of conditions has not been covered. A programmer might even decide to use the C++ "friend" capability to compromise "information hiding." None of these options relieves the designer from the responsibility to include the appropriate selectors in the final design of the software class.

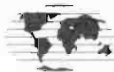
Would you like to continue to see articles on this topic?
Circle on reader card
yes 352 no 351

HERE'S YOUR SOLUTION!

Quality products at affordable prices for
HEWLETT-PACKARD/APOLLO®

Workstations,
Peripherals and Upgrades

- NEW and REFURBISHED
- Repairs
- 100% Customer Satisfaction
- Free Technical Support
- Immediate Delivery



CMI

Computer Marketing International, Inc.™

85 Flagship Drive
No. Andover, MA 01845 USA

Tel: 800-497-4264
508-687-3700

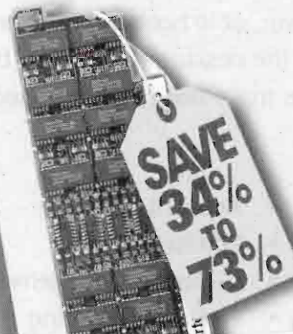
Fax: 508-689-2031
Int'l. Fax: 508-687-4395

CIRCLE 454 ON READER CARD

Free!

If you need more memory for your HP/Apollo, you won't want to miss this valuable savings report from Martech. It tells you everything you need to get high-quality memory at the lowest price.

How to save big on memory for HP/Apollo.



Martech carries memory for everything from 700 workstations to HP mainframe alternatives. Our Megamemories™ are 100% HP/Apollo compatible, made from high-quality components and are even backed with a lifetime warranty. To receive your free guide call, write or fax us today. Martech, A Division of Martinsound, Inc. 1151 W. Valley Blvd., Alhambra, CA 91803-2493 Phone: (818) 281-3555 FAX: (818) 284-3092

(800) 582-3555

MARTECH
The affordable alternative

HP and Apollo are registered trademarks of Hewlett Packard.

CIRCLE 220 ON READER CARD

Ross S Introdu Great Re Choos

1. Renaissance CS™: client/server takes on new meaning.

Renaissance CS software lets you decide if you want to work on the client, the server, or in both places at once, bringing a functionality to the desktop that's never been there before. Graphical interfaces make our software especially easy to use.

- General Ledger
- Accounts Receivable
- Fixed Assets
- Cost Allocations
- Encumbrance
- Accounts Payable
- Purchase Order
- Currency Management
- Project Accounting

2. PROMIX®: the most important ingredient in process manufacturing.

PROMIX is a fully integrated series of applications that provide single, enterprisewide management of every step in process manufacturing, beginning with order entry. You dramatically increase margins and productivity because everything is integrated with everything else.

- Process Planning
- Process Manufacturing
- Process Costing

Systems Offers Four Reasons For Using HP.

3. PROMIX Distribution Series: a hard-working manager.

The PROMIX Distribution Series is a fully integrated suite of business solutions designed to meet the dynamic needs of today's distribution marketplace. It strengthens your total supply chain management capabilities across global markets.

Sales Forecasting
Warehouse Management
Sales Order Processing

4. GEMBASE®: more than a 4GL.

GEMBASE is the most advanced 4GL available today. Application builders begin measuring project completion time in days, not decades. GEMBASE offers a seamless connection between "old" and "new."

- Comprehensive data dictionary facility
- Complete application development environment

To find out more about how well Ross Systems software and HP computers work together, call 404-257-9198, ext. 2400.

In the event you still haven't decided on HP computers, call us anyway. We'll give you even more reasons why you should.

CIRCLE 153 ON READER CARD





**MANAGING
YOUR HP 3000**

John P. Burke

Who's Supporting Whom?

To me, "arguing" opposing sides of an issue is an intellec-

tual exercise; to my wife, it represents a lack of passion and commitment. Lately, Hewlett-Packard has been trying to enlist customers' passion and commitment in favor of several major initiatives. For the sake of debate, let's ask the question: Is our passion and commitment warranted?

Take HP's ongoing commitment to MPE V, for example. Although it's of tremendous value to customers, MPE V support is also the ultimate cash cow for Hewlett-Packard. But HP was slow to realize this until big money customers started threatening to discontinue paying for support. They argued that MPE V was not being enhanced, so why pay large support fees. HP realized this was a movement that could easily generate steam if something weren't done to stop it. So, it threw a few million dollars (out of the many tens of millions of yearly support dollars) into a new group, the Software Technology Division (SWT), and in effect said "do what you have to but keep these people paying support."

The result has been more changes to MPE in the last two years than in any other comparable time period in MPE's history. This frenzy of activity has culminated in Release 30, unfortunately a "pull" release, which is truly surprising in its scope. A few of the many enhancements include:

- Support for wildcard characters in the PURGE command.
- LISTF with options 3, 4, 6 and -3.
- Programmatic RUN through the COMMAND intrinsic.

ARE THESE ENHANCEMENTS REALLY WORTH WHAT WE CONTINUE TO PAY IN SUPPORT?

- CHGROUP command to change logon group without logging off and on.
- Support for Critical Item Update in TurboIMAGE/V.
- Support for the addition or subtraction of capabilities in the ALTACCT, ALTGROUP and ALTUSER commands.
- Support for wildcard characters in manipulating ACDs with the ALTSEC command.
- Removal of escape sequence edits for SM/OP users of TELL, TELLOP and WARN commands and PRINTOP and PRINTOPREPLY intrinsics.
- A 60-day trial version of GLANCE-PLUS/V.

High Cost Of Living

This is great news, right? Even I can't find fault? Sure, I can. True, I'll use the new features. And, for a while, I was caught up in the enthusiasm and silenced my grumbling about software support fees. But consider for a moment that we've managed to survive nicely all these years without these features. Or, we've obtained third-party software or CSL routines that provide the same or similar functions.

Are these enhancements really worth what we continue to pay in support? No.

The current end-of-support dates for hardware for all Classic systems, except several models of the Micro 3000, are three years from now. The dates may be extended, but are you willing to bet your business on it? Even if the dates are extended, the hardware support fees will continue to rise making reliance on Classic systems less and less cost-efficient. Face it (I have to), despite the enhancements in Release 30, MPE V is on a fast track to oblivion.

The better course for Classic system owners (though less profitable for HP) might have been a freeze on MPE V and related software product enhancements, and a greatly reduced support fee geared exclusively to bug fixes/resolutions and tele-support.

A Win-Win Situation?

Like MPE V Release 30, IMAGE/SQL is a technical knockout — everything it's cracked up to be and more. We have the READ version of IMAGE/SQL on HP Professional's DP Lab's 917LX running under MPE/iX 4.0. It's easy and straightforward to ATTACH a TurboIMAGE database with the utility ATCUTIL to a DBEnvironment. The TurboIMAGE database appears as though it were a group of tables in an ALLBASE/SQL database. Within minutes, I was able to access a TurboIMAGE database via SQL's SELECT from the ALLBASE/SQL utility ISQL.

Clearly, the SQL interface is a boon to current HP 3000 users and will add years of life to legacy systems based on TurboIMAGE. Also, I applaud the decision to treat IMAGE/SQL as an enhancement (everyone on support gets IMAGE/SQL) as opposed to a separate product. I won't even complain about the increased support fees.

Sounds like passion and commitment for HP's course of action, right? Not entirely. It seems IMAGE/SQL has fanned the flames of the ongoing IMAGE vs. ALLBASE and IMAGE vs. anything-else debates. We've been treated to several technical arguments about why IMAGE is better now and could be better still if certain enhancements were implemented. What the arguments fail to address, however, is that these technical considerations are relatively unimportant in the prospective customer's decision-making process.

I'm as passionate about IMAGE as anyone. I've worked with it for more than 15 years and have a tremendous personal investment in it. But the fact remains that for new development and especially for new HP 3000 customers, economics and politics strongly favor buying ALLBASE/SQL. The advent of IMAGE/SQL simply makes it easier for existing TurboIMAGE users to migrate their applications to ALLBASE/SQL.


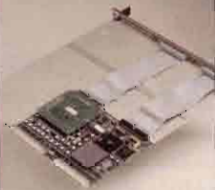






I agree, as some argue, that with standards-based SQL the underlying database engine is irrelevant. But from a purely practical standpoint, the ALLBASE engine exists on both the HP 9000 and HP 3000, while TurboIMAGE exists only on the HP 3000. (We've been told to forget about TurboIMAGE on HP-UX.) Being on both platforms gives ALLBASE an advantage over TurboIMAGE simply because its development and support costs can be spread across a larger user base. Considering that performance of the two databases is roughly equivalent, there's really no incentive for anyone to start development for TurboIMAGE, especially given the current price differential.

The recent introduction of IMAGE/SQL and the talk of enhancing TurboIMAGE with dynamic detail dataset expansion demonstrate that IMAGE *could* have been the basis for the database engine for ALLBASE/SQL. But it isn't, and no amount of arguing can change that.

The only way IMAGE/SQL will survive long-term on anything other than legacy systems will be if it becomes price competitive with ALLBASE/SQL for new development, including the cost of the third-party tools and utilities required in

an IMAGE production environment. That's an HP marketing and management decision, not a technical decision. I see no indication that HP has any plans to make it so — and that ensures the ultimate demise of IMAGE.

IMAGE/SQL is a win-win situation for Hewlett-Packard and its existing customers. But let's not get carried away. The war was lost when IMAGE was un-bundled from MPE and priced non-competitively against ALLBASE. Once the

<p>To expand the limits of your HP workstation or server...</p>		<p>we offer the broadest range of high-performance peripherals...</p>	
	<p>engineered and pre-tested for quick installation...</p>		<p>with trained and knowledgeable sales & support staff...</p>
<p>at competitive, affordable pricing...</p>		<p>and your satisfaction guaranteed.</p>	
<p>Hard Disk Drives Tape Drives Optical & CD ROM Memory Controllers Tape & Optical Libraries</p>		<p>X-Systems, Inc. 800-886-5343 303-443-5343 Email xsys@xsys.com</p>	 2820G Wilderness Pl. Boulder, CO 80301

CIRCLE 191 ON READER CARD

Pro EDI

Intelligent EDI

Pro EDI is an advanced, flexible EDI utility which runs on HP 3000 computers. Pro EDI gives you the power to integrate EDI seamlessly with any application software.

User-defined EDI

With Pro EDI, you have complete control over the conversion of EDI data formats to the formats used by your own software. You can define transaction sets *exactly* as your trading partners do. You have total flexibility to define the files you use to interface with your applications. You can control, at the element/sub-element level, the conversion of data to and from the EDI formats and the application software formats.

Pro EDI supports all ANSI X.12 standards and derivatives (such as TDCC, VICS, AIAG, etc.), and UN/EDIFACT.

Pro EDI runs on all HP 3000 computers, both MPE/V and MPE/XL.

Usage-based pricing

Pro EDI pricing is based on the number of document types you need, *not* on the type of CPU you have. You pay for what you use, not for the size of your machine.



Pro Software, Inc.
Suite 240
725 Barclay Circle
Rochester Hills, MI 48307

(313) 299-0020 (Voice)
(313) 853-2442 (FAX)

Pro EDI and the Pro EDI logo are trademarks of Pro Software, Inc.

genie was let out of the bottle, it could never be put back. As much as it may pain me, ALLBASE remains HP's strategic database engine for the future.

The bottom line: IMAGE/SQL and MPE V Release 30 reflect HP business decisions that have both good and bad el-

ements for customers. Reasonable people can disagree over the "rightness" of these decisions, but they won't be reversed.

Would you like to continue to see articles on this topic?
Circle on reader card
yes 346 no 345

THE NEW SUPPORT CONTRACT: TOO SIMPLE?

Software support is an ill-defined concept. For as long as there have been regular software support charges, there has been grumbling and confusion about the value received. The concept of hardware support, however, is fairly well understood and accepted.

HP just sent me a new Support Services proposal for my Classic system. It came with a letter and supporting glossy documentation extolling the virtue of "HP's NEW support framework ... System Support."

There are definitely some good ideas here:

- Hardware and software support combined on one contract.
- Less useless detail (every item is still listed).
- Very much less paper wasted (a "green" proposal?).

But (notice how there is always a "but"), the new proposal format does *not* break out hardware and software costs separately. Hmmmm.

The Next Generation of EDI

EXPERIENCE.

25
YEARS
1968-1993

You should expect more than just a backup system and a computer room from your HP hotsite vendor.

When you move your operations to a hotsite facility, you need the solid backing of seasoned HP experts. For a higher level of service based on a quarter century of experience, give us a call at (201) 672-6000.



Computer Solutions, Inc.

CIRCLE 167 ON READER CARD



The Power of Integration

Unlock your HP3000 with DataExpress

If your end users can't reach the data they need, reach for DataExpress, the link you've been looking for between your HP3000 and Mac/PC desktops.

With DataExpress, users can pull information off your HP3000 without rekeying and without tying up your MIS people.

Best of all, they can bring data into PC and Mac applications that they already know and count on: Lotus, dBase, Excel, WordPerfect and more. With thirty output format options, DataExpress opens your data to more applications than any other integration package.

In addition to PC and Mac file formats, DataExpress can generate reports, and with the Report Designer option you get WYSIWYG capability, so you can see design improvements as you make them.

DataExpress is the #1 End-User Computing Environment available for the HP3000 today.

**For powerful solutions,
call 1-800-ANSWERS**

Your Integration Software Supplier®

M. B. Foster Associates Limited
50 Water Street
P.O. Box 580
Chesterville, Ontario
Canada K0C 1H0

Tel (613) 448-2333
Fax (613) 448-2588



Transporter Converts TAPS Applications For CICS

Nexcomp Consulting announced The Transformer, a new product to transform TAPS applications on your HP 3000 to run native CICS code.

The Transformer allows organizations using TAPS to migrate to newer versions of CICS without redeveloping or reprogramming entire applications. The transformer features a screen converter that generates CICS Basic Mapping Support Code from the TAPS environment, a source code analyzer that looks at COBOL programs finding statements to be converted, and a source code translator that performs the actual conversion from TAPS macros to equivalent CICS Command Level Program statements.

Contact Nexcomp Consulting, 601 Dundas St. W., Box 24006, Whitby, Ontario, Canada L1N 8X8; (416) 430-7781.

Circle 400 on reader card

PRO-EDI 3.0 Features SUPERDEX

Pro Software Inc. will incorporate Bradmark Technologies' SUPERDEX in its next release

of PRO-EDI, version 3.0. PRO-EDI lets users construct a seamless integration of EDI with existing application software. It runs on all HP 3000 systems.

SUPERDEX is a utility that expands the IMAGE/TurboIMAGE environment with many powerful SQL capabilities. This fully compatible indexing environment adds unprecedented data retrieval speed and flexibility to IMAGE/TurboIMAGE databases.

Using SUPERDEX gives PRO-EDI both greater throughput and reduced disk space requirements, as well as greater flexibility for future capabilities.

Contact Bradmark Technologies, 4265 San Felipe, Ste. 800, Houston, TX 77027; (713) 621-2808.

Circle 399 on reader card

WRQ Improves Novell Network Integration

Walker Richer & Quinn announced a new version of the Reflection Network Series that offers better integration with Novell Netware.

Version 2.1 includes support for Novell's ODI (Open Data-Link Interface) protocol.

ODI manages multiple protocol stacks on a network adapter card, allowing them to co-exist. ODI is similar to NDIS (Network Driver Interface Specification) a standard developed by Microsoft and 3Com, in the protocol management work it performs.

With ODI support, Reflection Network Series Products will provide multiple protocol and Novell currency with any network adapter that has an ODI driver. The Reflection Network Series already offers NDIS support. Reflection Network Series consists of five different combinations of protocol stacks that connect PC LANs to UNIX, HP, DEC and IBM host computers for terminal emulation and file transfer.

Contact WRQ, 2815 Eastlake Ave., East, Seattle, WA 98102; (206) 726-7219.

Circle 383 on reader card

Inference Launches ART*Enterprise

Inference Corp. announced ART*Enterprise, an integrated multiplatform tool for building enterprise-wide computing applications. It is targeted at companies that are rightsizing into client-server and distributed computing environments and re-engineering their business processes.

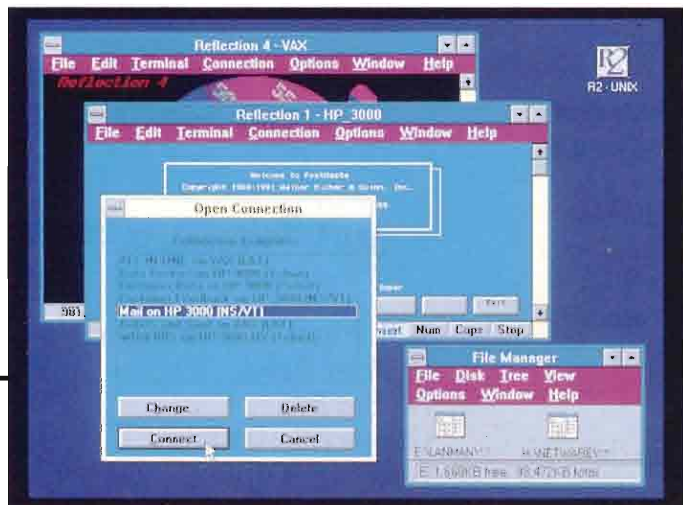
ART*Enterprise features extensive portability, point-and-click GUI development, automatic integration of multiple database management systems, fully object-oriented architecture, event-driven architecture for client-server computing, prototyping and rapid application development, business rule processing and Inference's CASE-Based Retrieval technology for accessing unstructured information, all integrated into an open system design.

It will be available on HP-UX and other UNIX platforms, Windows, Macintosh, OS/2 and MVS.

Contact Inference Corp., 550 N. Continental Blvd., El Segundo, CA 90245-5052; (310) 322-0200.

Circle 398 on reader card

WRQ's Reflection Network Series consists of five combinations of protocol stacks that connect PC LANs to UNIX, HP, DEC and IBM hosts.



ICS Offers OLIT for HP Series 700

Integrated Computer Solutions Inc. (ICS) announced it will provide the SunSoft Open Look Intrinsic Toolkit (OLIT 3.1) for HP Series 700 and DEC Alpha AXP workstations, simplifying the porting of applications between different workstation environments.

The ICS OLIT product will give developers on HP and DEC workstations direct access to libraries of existing Open Look applications running on Sun Microsystems workstations. Organizations will be able to run the same applications and maintain the same look and feel of each application across Sun, DEC and HP platforms. The price for a single user license is \$525.

Contact ICS, 201 Broadway, Cambridge, MA 02139; (617) 621-0060.

Circle 397 on reader card

ADABAS SQL Server Achieves NIST Certification

Software AG announced that its ADABAS SQL Server completed the National Institute of Standards and Technology (NIST) SQL Test Suite (version 3), making it the first commercially available database management system to achieve NIST SQL certification on both IBM's MVS operating system and HP-UX.

This enables customers to operate in a complete open environment and perform transparent application processing across a range of platforms from the mainframe to the desktop.

The SQL validation test suite consists of more than 300 individual tests and ensures SQL compliance with the standard issued by ANSI for level 2 of the ANSI SQL89 standard. ADABAS SQL Server works in conjunction with ADABAS, which recently broke the Transaction Processing Council's TPC-A benchmark record for price/performance on the HP 9000 Series 800 Model 150 uniprocessor system.

Pricing for ADABAS SQL Server on

UNIX ranges from \$400 to \$20,400 depending on the platform and numbers of users.

Contact Software AG, 11190 Sunrise Valley Dr., Reston, VA 22091; (703) 860-5050.

Circle 392 on reader card

Cybernetics' Tape Libraries Add Backup Management

Contemporary Cybernetics announced that its 8mm tape library systems, the CY-CHS10i and the CY-CHS120, are available with backup management software.

Designed for multivendor UNIX networks, the software automates backup and restore operations and gives users direct access to between 25 GB and 3 TB of data, without manual intervention.

The CY-CHS10i features one 8mm tape drive and 10 tapes in a desktop cabinet. The CY-CHS120 features up to four 8mm tape drives and 116 tapes. Both libraries use a robotic tape handler to load and unload tapes without manual intervention.

Contact Contemporary Cybernetics, Rock Landing Corporate Center, 11846 Rock Landing Dr., Newport News, VA 23606; (804) 873-9000.

Circle 396 on reader card

Riviera Announces New User Interface

Riviera Software is now shipping version B.03.10 of its HotKey3000 application switcher. HotKey allows users to switch between programs instantly without logging on and off. To select the program to activate, users use a special hot key that they define.

It is now possible to install users' applications under HotKey without having to stop the system. HotKey does not alter any SL or XL and applications do not have to be modified.

A new windows-oriented interface called NewLook allows users to build the HotKey interface with users' applications quickly and without the need to refer to any documen-

HP Workstation Memory



**Workstation Managers Have
to be Masters of All Trades**

Memory for Your Workstation

We can help with the workstation memory you need for HP Apollo 9000's and 3000's as well as for DEC, SUN, IBM and SGI workstations

Quality Memory Products

We offer memory manufactured by Kingston Technology Corporation. This means you get a lifetime warranty, backed by free technical support on high quality products from the manufacturer that has shipped more than 5 million great products.

Best Memory Prices

Corporate Technology Direct makes sure you get the best prices and the best service.

For More Information Call
1-800-769-1163



Corporate Technology Direct
509 E. Balboa Blvd.
Newport Beach, CA 92661

CIRCLE 282 ON READER CARD

tation. HotKey accomplishes this with a PC look-alike interface consisting of menu bars, pull-down and pop-up menus and windows. Contact Riviera Software, 7901 Havenwood Dr., Austin, TX 78759; (512) 346-0962.

Circle 393 on reader card

Workstation Source Designs Auto-Shutdown Units

Workstation Source announced the ISA 7000 Series Intelligent Auto-Shutdown Units designed for HP 9000 Series computer systems running HP-UX. The basic unit has

two, microprocessor controlled, A.C. outlets providing A.C. power to the main host unit and supporting peripherals such as disk and tape drives.

The 7000 Series has three models: the basic model 7010, the 7011 with 3.5-inch 1.4-MB floppy, and the 7012 with 3.5-inch 1.2-MB floppy drive. The microfloppy drive section is command and media-compatible with the HP 9122 microfloppy disk drive.

The Auto-Shutdown Unit can activate a power-down sequence upon any one of the following: power fail signal from UPS, command from host, manual switch to front panel.

Contact Workstation Source Limited, 16 Auckland Close, Maidenhead, Berkshire SL6 8QB; 0628 75252.

Circle 385 on reader card

Status3000 Connects HP 3000 Users To LaserJet 4

Extended Systems released the Status3000, a serial interface allowing HP 3000 computers to connect to HP LaserJet 4 and IIISi printers.

HP 3000 computers require interactive communication with printers in order for users to successfully send print jobs. The Status3000 serial interface card enables HP 3000 systems to have an interactive connection with an HP LaserJet 4 or IIISi printer.

The Status3000 has various installation options that can be easily set from the printer's front panel. The Status3000 supports both RS-232 and RS-422 serial, bidirectional communication as well as both hardware and software (Xon/Xoff) handshaking. Various baud rates, ranging from 1200 to 57.6K, also area front-panel selection. Status3000 ESI-2626A is priced at \$495.

Contact Extended Systems, 5777 N. Meeker Ave., Boise, ID 83704; (800) 235-7576; (406) 587-7575.

Circle 391 on reader card

DISC Introduces OMNIDEX For Client-Server

Dynamic Information Systems Corp. (DISC) introduced its instant data access product, OMNIDEX for Client-Server.

OMNIDEX is a sophisticated indexing system that can be installed on most major databases to allow users to instantly select and retrieve data according to any combination of criteria. OMNIDEX for Client-Server adds the ability to access these indexes residing on

**MINISOFT
BUYS
REFLECTION®**

Now for a limited time you can trade in any version of Reflection® and upgrade to MiniSoft 92 for DOS or Windows for just \$59.*

MiniSoft 92 is the ONLY HP terminal emulator to include complete LAN connectivity in one integrated package. No additional PC software is required to make Ethernet or Arcnet connections to an HP computer.

MiniSoft 92 comes bundled with its own TCP/IP stack, NS and Telnet virtual terminal protocols, allowing connections to HP host computers across a wide variety of industry standard local area networks including; Novell, Lanmanager, Banyan and Lantastic.

Along with the great savings, MS92 gives you the power and versatility of the fastest growing terminal emulation and data communications package in the HP market. Combining precise HP terminal emulation, reliable file transfer, a powerful command language with serial and LAN connectivity, MS92 represents an outstanding software value.

MINISOFT

MiniSoft Inc.
13617 State Highway 9
Snohomish WA 98290
800/682-0200, FAX 206/668-2435

* Trade in offer requires title page from Reflection® users manual. Upgrades from other HP terminal emulators are available for \$79.00. Offer expires June 30, 1993.

MiniSoft 92 is a registered trademark of MiniSoft Inc. All other trademarks are the property of their respective owners.

CIRCLE 472 ON READER CARD

the host machine from any number of PC-clients, including Microsoft Windows and DOS-based programs.

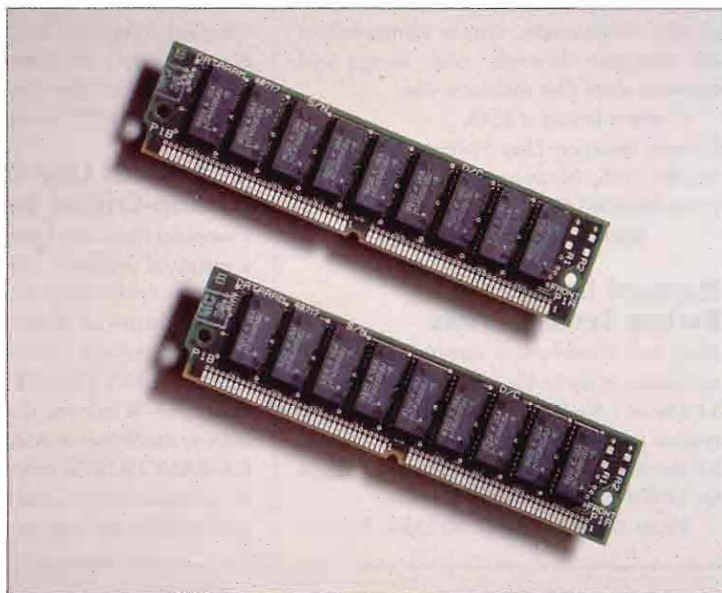
OMNIDEX for Client-Server is available for HP 3000, HP-UX and DEC VAX machines running IMAGE, RMS or Oracle.

Cost ranges from \$9,000 to \$57,500 for the host machine and as little as \$100 per PC in quantity.

Contact DISC, 5733 Central Ave., Boulder, CO 80301; (303) 444-4000.

Circle 390 on reader card

Dataram offers new DR9715 memory boards available in 8-MB and 16-MB capacities.



Dataram Introduces Memory Upgrades

Dataram Corp. introduced memory upgrades for the HP 9000 Model 715/725 RISC-based workstations.

The new DR9715 memory boards, available in 8-MB and 16-MB capacities, offer 20 percent savings over HP's expansion memory. The memory can be installed in any combination of 8-MB and 16-MB boards, allowing users more flexibility as they increase memory.

The new memory is installed as pairs of 4-MB (DR9715/8) and 8-MB (DR9715/16) boards that use 4Mbit, fast-page mode, surface mount DRAMs. The DR9715 is fully hardware- and software-compatible with HP 9000 Model 715/33, 715/50 and 725/50 workstations, and is a direct replacement for HP memory products A2815A (8 MB) and A2816A (16 MB). The DR9715/8 is priced at \$640. The DR9715/16 is priced at \$1,280. A 64 MB version, using 16 Mbit DRAMs, is also available for \$8,960.

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

Circle 387 on reader card

SOFTWARE DEVELOPERS



Stop giving your software away!

Don't take chances. Use MicroSentinelLUX™. The most sophisticated and effective control device for open systems and UNIX applications. This portable hardware key gives you complete control and flexibility over your software packages.

Stop piracy and control distribution

Protect software revenues

Secure demo and leased software

Remotely upgrade software

Call for a low-price evaluation kit today. **800/843-0413**
Outside the US & Canada: 704/523-9500 ■ fax: 704/523-7651



Kim 3

CIRCLE 157 ON READER CARD

LEADING THE FIELD



That's right, as a leading HP/Apollo reseller, we're ahead of just about everybody in pricing, delivery and inventory.

We have it all, from HP 400 & 700 series through Apollo DN3000 to DN10000. Call us for systems, spares, 3rd party upgrades and peripherals.

For our overseas customers a complete export service is available.

S.A.R. INCORPORATED

11 Rogers Road, Box 8161 Haverhill, MA 01835
Telephone (508) 521-6656 Fax (508) 372-0999

CIRCLE 131 ON READER CARD

Cheyenne Broadens ARCserve Agent Options

Cheyenne Software Inc. expanded its previously announced ARCserve Agent Option for UNIX to provide backup and restoration capabilities for HP-UX v8.07, Interactive System V/386 Release 3.2, SunSoft's Solaris v1.X and 2.0, IBM AIX 6000 v3.2 and DLC Ultrix v4.2 workstations on a NetWare network.

The addition of these Agent Options will further enhance ARCserve's existing capabilities in the UNIX market, which currently includes support for SCO UNIX System V/386 Release 3.2 and Interactive System V/386 Release 3.2.

Contact Cheyenne Software Inc., 55 Bryant Ave., Roslyn, NY 11576; (516) 484-5110.

Circle 394 on reader card

C-edit Offers Split Window Flexibility

Wiseport Data Systems introduced C-edit, designed as a replacement for the UNIX vi text editor. It is a full-screen text editor that

provides split window capabilities unique. C-edit now runs on HP-UX.

With C-edit, programmers have the flexibility of having the same file in split windows, or different files in as many windows as memory allows. Programmers can readily cut, paste and move within same file or files. Additionally, system administrators can navigate through, edit, merge and maintain script files with new ease.

C-edit is priced at \$545.

Contact Wiseport Data Systems, 3900 Birch St., Ste. 105, Newport Beach, CA 92660; (714) 250-2981.

Circle 380 on reader card

Maynard Drops Backup System Prices

Maynard Electronics announced price reductions of up to 15 percent on its Archive ST line of 1.35-GB quarter-inch tape backup systems and up to 13 percent on its Archive ST line of digital audio tape backup systems for UNIX workstation or PC users.

Prices for the Archive ST1350, Archive

ST4000 and Archive ST2000 quarter-inch systems range from \$1,410 to \$2,275. Prices for the DAT drives range from \$1,760 to \$2,275. Archive ST systems include commonly required installation hardware, including terminators, cabling, rails, jumpers and media.

Contact Maynard Electronics Division, Archive Corp., 36 Skyline Dr., Lake Mary, FL 32746; (800) 821-8782; (407) 263-3500.

Circle 377 on reader card

CA Extends Line Of Mission-Critical Solutions

Computer Associates International announced a series of products and enhancements to advance application development across disparate hardware platforms.

The company announced CA-RAMIS and CA-EASYTRIEVE Servers, available under MS-Windows, that provide seamless links to mainframe-resident CA-RAMIS and CA-EASYTRIEVE programs. CA extended its multiplatform commitment to life cycle management through new implementations



**HARBORSIDE
COMPUTER
MARKETING**

813-799-2009

We
Buy/Sell/Lease All
HEWLETT PACKARD!

AND


We service
1000/3000/9000
Memory/Workstations/
Printers/Plotters

Harborside Marketing, Inc.
1010-A Park Court
Safety Harbor, FL 34695
813-799-2009
FAX 813-791-6699

CIRCLE 215 ON READER CARD

Turn your
excess inventory
into a tax break
and help send needy
kids to college.

Call for your
free guide
to learn how donating
your slow moving inventory
can mean a generous
tax write off
for your company.



Call **708-690-0010**
PETER ROSKAM
Executive Director

EAL

P.O. Box 3021, Glen Ellyn, IL 60138
Fax (708) 690-0565

"Fenton, you've got 10 seconds to remove that lampshade. And just 10 days to get all these surplus lampshades out of here."

Excess inventory today...student opportunity tomorrow

ADVERTISER INFORMATION

If you'd like more information about the products from the companies listed below, circle the appropriate number on the reader information card. This index is provided as an additional service. The publisher does not assume any liability for errors and omissions.

ACOM COMPUTER INC.

Hewlett-Packard approved product developer specializing in MICR printing, (magnetic ink character recognition), for producing checks from Accounts Payable, Payroll and Claims applications. Call (800) 347-3638 or circle 200.

ARTECON INC.

Artecon is a leading systems integrator and manufacturer of value-added hardware and software products for the UNIX marketplace. Product lines include Opticals, Removables, Backups, Storage and Accessories. Call (800) USA-ARTE, FAX (619) 931-5527 or circle 242.

BEAR COMPUTER SYSTEMS INC.

MagieDisk includes Virtual Disk, Memory Disk and Disk Shadowing software products. ResQuet is a real-time shadowing-across-the-network product, for disaster recovery and related applications. Call (818) 577-0073 or circle 476.

BRADMARK TECHNOLOGIES INC.

Your total HP 3000/IMAGE database solution that includes: DBGENERAL, the most complete general-purpose database utility available in the HP 3000 market. And SUPERDEX, the fully compatible indexing package that provides unprecedented data retrieval speed and flexibility. Both are reasons why Bradmark is committed to provide premier data management solutions. Call 1-800-ASK-BRAD or circle 108.

COGNOS CORP.

Cognos provides application development software for HP MPE V, MPE XL and HP-UX platforms. Call (800) 4-COGNOS or circle 117.

COMPUTER MARKETING INTERNATIONAL INC.

Independent distributor of new and refurbished HP Apollo workstations and peripherals. We provide in-house technical support and depot repair services. We are committed to providing 100% customer satisfaction on every order. Call 800-497-4CMI or circle 454.

COMPUTER SOLUTIONS INC.

Computer Solutions is an HP Channel Partner now in its 25th year of operation. Businesses include disaster recovery services, outsourcing, hardware sales, contract maintenance, depot repair and school software. Call (210) 672-6000, FAX (201) 672-8069 or circle 167.

CONCORDE TECHNOLOGIES

Broad line of HP mass storage (disk, tape, optical) and RAM memory upgrades for HP, Apollo, DEC, Sun, RS/6000 and Silicon Graphics computers. Best prices, availability, warranty and support. Call 1-800-359-0282 for complete information and pricing or circle 232.

CONTEMPORARY CYBERNETICS GROUP

Contemporary Cybernetics manufactures a complete family of backup systems that range in capacity from the 150 MB QIC streamer to a 2 TB cartridge handling system. Call (804) 873-0900, FAX (804) 873-8836, or circle 112.

HERSTAL AUTOMATION LTD.

Reasonably priced data storage subsystems with performance in mind. Call (313) 548-2001 or circle 119.

HOOLEON CORP.

Custom printed Hewlett-Packard keys in your choice of colors. Keytop labels, keyboard templates and more. Call (800) 937-1337, FAX (602) 634-4620 or circle 474.

IEM INC.

Affordable hardware solutions, from memory boards and interface cards to the latest in optical disk technology. Call (303) 223-6071, (800) 321-4671 or circle 122.

INFORMATION BUILDERS INC.

4GL/DBMS for HP MPE XL and HP-UX systems offering application development, reporting and decision support. Supported on all major platforms. Call (212) 736-4433 or circle 247.

KELLY COMPUTER SYSTEMS

Manufacturer of performance products: RAMDISC, Spectrum memory, Classic memory, and PC and Laserjet memory. CPU upgrades also available. Call (415) 960-1010 or circle 185.

KINGSTON TECHNOLOGY CORP.

Kingston Technology designs and manufactures memory upgrades for PCs, laptops, workstations and laser printers. The Kingston product line also features mass storage subsystems and processor upgrades. Call (800) 835-2545, FAX (714) 435-2699 or circle 281.

MARTECH

Highest quality solutions at the lowest price available. Complete line of memory products for HP 9000, 3000 and 1000 computers. Also RAM for Apollo Domain Series 2500-5500. Ship from stock. Call for your pricing today! Call (800) 582-3555 or circle 220.

M.B. FOSTER ASSOCIATES LTD.

DataExpress the #1 End User Computing Environment and report writer. EDI Windows, translation software. Reflection and the Network Series. Call (800) ANSWERS or FAX (613) 448-2588 or circle 155.

MINISOFT INC.

Minisoft 92 for DOS and Windows providing HP terminal emulation and LAN connectivity for just \$129. Call (800) 682-0200 or circle 472.

NETWORK COMPUTING DEVICES INC.

NCD supplies the most comprehensive family of high-performance X terminals and PC-X software for use with HP computer systems. Based on the industry-standard X Window System, each product provides users a windowed graphical interface to a network of computers and applications. NCD's color, grayscale and monochrome X terminals all combine enhanced X server software with superior hardware design to give you leading-edge technology economically. And NCD's PC-X view software offers IBM-compatible PC or PS/2 users easy, low-cost access to X hosts and applications on the network. Call (415) 694-0650, FAX (415) 961-7711 or circle 482.

NEWPORT DIGITAL CORP.

Accelerator cards for HP 9000 Series 200 plus HP 310 and HP 320. Ten-fold performance improvement. Call (714) 730-3644 or circle 246.

NSD INC.

With job management and MIS productivity products from NSD, your HP 3000/9000 will run smoother, faster and better. Call (415) 573-5923, (800) 538-3818 or circle 161.

PARASOFT CORP.

ParaSoft produces Insight, a unique new environment for "Total Quality software™". Insight automatically finds bugs and improves software at five distinct levels: memory errors, programming errors, algorithmic errors, performance and comprehension. Call (818) 792-9941 or circle 208.

QUEST SOFTWARE

The only complete HP 3000 solution for:
1) High speed network file and adatabase access.
2) IMAGE, KSAM and MPE file shadowing.
3) Low overhead and network spooling.
Call (714) 720-1434 or circle 268.

RAINBOW TECHNOLOGIES INC.

MicroSentinelUX is a cross platform, external, portable hardware key for controlling software piracy, distribution and licensing. Call (800) 843-0413, FAX (704) 523-7651 or circle 157.

ROSS SYSTEMS HP

Financial, distribution, manufacturing and 4GL software for both the HP 3000 and 9000 product lines. Call (617) 622-1414 or (800) 942-3366 or circle 153.

S.A.R. INC.

S.A.R. Inc. is an independent distributor of HP Apollo workstations. We can supply spare parts, upgrades or custom configure systems. Call (508) 521-6656 or circle 131.

SYNCHRONICS

User defined Hewlett-Packard keyboard keycaps. Keycaps with any legend or symbol printed to the user's specifications. Call (800) 444-5397, FAX (619) 275-3520 or circle 455.

TRYONICS INC.

Tryonics Inc. is a provider of quality remanufactured HP Apollo, Apollo Domain series workstations, spare parts, network and software consulting services. Call (603) 427-6850 or circle 477.

V-SYSTEMS INC.

VSI*FAX is UNIX facsimile management software designed to fax-enable any UNIX software application. V-Systems develops and markets UNIX communications software. For a limited time, VSI*FAX VAR in-house units for \$199. Call (714) 545-6442, FAX (714) 545-7653 or circle 128.

WALKER RICHER & QUINN INC.

Makers of Reflection Series Software. HP terminal emulation for PCs and Macintoshes. Call (800) 872-2829 or circle 127.

WTW INFORMATION TECHNOLOGY CONSULTING

A nationwide firm with extensive experience in HP and multiplatform environments. Services include systems integration, migrations and downsizing, project management, application development and information technology strategic planning. Call (803) 699-5781 or circle 180.

X-SYSTEMS

X-Systems markets a complete line of disk, tape, memory solutions for HP workstations and servers. New products include: Fast SCSI 2 wide differential disk drives, bootable CD ROM's and a 96 GByte DAT stacker. Call (800) 886-5343 or circle 191.



of CA-PAN/LCM, an integrated change and configuration management system that controls the inventory of software components throughout the enterprise.

CA also introduced new target production environments for CA-TELMON, a compre-

hensive application generator, which generates fully executable code for mission-critical applications on UNIX, VSE, OS/2 and PC-DOS platforms; CA-RET, an advanced WYSIWYG Windows-based report writer for CA's multiplatform databases; CA-

IDMS and C-DATACOM, which allows users to create complex reports with point-and-click simplicity. CA-OPTIMIZER II 2.0, a COBOL II optimization and debugging tool, that provides full support for SAA COBOL/370 release 1.0 was also announced.

Contact Computer Associates International Inc., One Computer Associates Plaza, Islandia, NY 11788; (516) DIAL CAI.

Circle 384 on reader card

Wyse, HP Sign On-Site Service Agreement

Wyse Technology Inc. and HP announced an agreement under which HP will provide on-site service and support to customers of Wyse's PCs and UNIX-based systems in the U.S. and Canada. Wyse also announced enhancements to its logistic support system for these products.

Under the agreement, end-user customers or VARs will continue to contract directly with Wyse for their service needs. Wyse will retain responsibility for problem resolution by determining the end-user need and contacting HP should an on-site visit be necessary. Communication between Wyse and HP will be transparent to end-user customers, who will have a single contact for any service issues relating to their Wyse system.

Systems covered under this agreement include Wyse PCs and the Wyse Series 7000i and Series 9000i, UNIX-based multiprocess- ing systems supporting from 150 to 400 users.

Contact Wyse Technology, 3471 N. First St., San Jose, CA 95134; (408) 473-1200.

Circle 378 on reader card

HP Ports Precision Engineering To 700

HP announced it has ported its HP Precision Engineering (PE) family of mechanical-engineering computer-aided design and product data management systems to the HP Apollo 9000 Series 700 Models 715/33, 715/50, 735 and 755 workstations.

The company said its benchmarks show a performance increase of up to 100 percent for HP PE/ME10, HP PE/SolidDesigner and HP PE/WorkManager systems running on the Series 700 workstations. The company also announced that by combining the Series 700 workstations with the HP CRX-482 graphics subsystem, users can double the performance of HP's solids modeling systems



Before.



Seconds Later.

The best way to solve your check writing problems is to start with a blank sheet of paper.

Introducing ACOM's family of MICR laser check printers.



MICR 4816
16 pages per minute
58,000/mo duty cycle

Starting with a blank sheet of safety paper, ACOM MICR printers turn out completed checks. In seconds, they print the MICR line, the name of the bank, your company's name and logo, your signature, and all variable information.

Simultaneously write checks from multiple accounts.

Because ACOM MICR printers use blank stock, you can write checks from multiple accounts at the same time. There's no need to

switch pre-printed stock every time you switch bank accounts.

Greater security.

All critical data, including the MICR font, signature and logo is contained in a security cartridge that you can store in a safe place when not in use. It sure beats the hassle of storing boxes of pre-printed checks.

Remote check processing.

You can take secure information from your host and download it to a remote site to produce completed checks. It's both convenient and secure.



MICR 4808
8 pages per minute
5,900/mo duty cycle

Reduces costs.

ACOM MICR laser check printers eliminate the need to buy costly pre-printed checks, expensive bursters, refamers and signature stamps.

Data and word processing, too.

You can use your ACOM MICR printer for other applications besides check writing. These printers handle processing, bar codes and forms, too. Let ACOM solve your check writing problems. Call (800) 347-3638. In California, call (310) 424-7899.

ACOM

#1 in MICR system solutions.

CIRCLE 200 ON READER CARD

NEW PRODUCTS

— both HP ME30 and the HP PE/SolidDesigner.

HP also introduced 3.5-inch disk drives with 2.1, 1.6 and 1.2 GB of formatted capacity for use by OEMs and system integrators. The HP C2490A, C2488A and C2486A series disk drives expand HP's current 3.5-inch product line and are designed to meet the storage requirements of mainframes, workstations, multiuser systems, array applications and high-end PC servers. They boast a 500,000-hour MTBF rating.

Logicraft Designs CD 4000 Expansion Cabinet

Logicraft announced the CD 4000, a CD expansion cabinet that contains up to seven CD-ROM drives and is fully compatible with Logicraft's 486Ware product line.

The CD 4000 is configured with industry standard CD-ROM SCSI drives and a SCSI interface card. It is available as a rackmount, a desktop unit or a tower unit. Up to three CD 4000s can be attached to each 486Ware server, allowing up to 16 simultaneous users access to 21 CD drives. Two CD 400s with up to 12 drives can be attached to DEC's InfoServer 150.

The CD 4000/486Ware configuration is accessible concurrently by all users on the network — PCs, Macintoshes, X terminals, VT terminals and workstations. The CD 4000 is priced at \$5,995 for a seven-drive unit. Contact Logicraft Inc., 22 Cotton Rd., Nashua, NH 03063; (603) 880-0300.

Circle 379 on reader card

IDE Introduces StP/IM For RDBMS

Interactive Development Environments Inc. (IDE) introduced Software through Pictures Information Modeling (StP/IM), a comprehensive database development environment for RDBMS.

Customers can use StP/IM to model all real-world data and their relationships and to generate SQL statements that work with any RDBMS. StP/IM supports widely accepted information modeling notations such as Bachman, Martin and Chen. Companies can use the multiuser StP/IM to model individual projects and complete enterprises. StP/IM is easily integrated with other best-of-class tools, so organizations are not locked into a proprietary suite of tools. It supports industry standard graphical user interface guidelines and CASE frameworks.

The product is priced at \$7,500. Contact IDE, 595 Market St., 10th Fl., San Francisco, CA 94105; (415) 543-0900.

Circle 381 on reader card

Proactive Enhances Q-Gen Report Writer

Proactive Systems enhanced Q-GEN report writer to support HP ALLBASE/SQL databases on HP 3000 systems. It already provides high performance reporting from IMAGE databases and KSAM/MPE files.

Q-GEN (also known as the FANTASIA REPORTER) also complements the FLEXIBASE/SQL database management utility for ALLBASE/SQL databases offered by Proactive Systems and is closely integrated with the FANTASIA product for laser printing and forms overlay support.

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

Circle 389 on reader card

THE BEST IN THE BUSINESS!

"Software Specific" Hewlett-Packard Keycaps

Top Quality

Fast Service

Guaranteed
Satisfaction



Call
800 444-KEYS


Syntronics

980 Buenos Ave., Suite C2
San Diego, CA 92110
800-444-5397 FAX 619-275-3520

CIRCLE 455 ON READER CARD

HEWLETT-PACKARD

TSA

The Right Equipment. Right Now.

9000

1000

3000

TEST

BUY

SELL

RENT

REPAIR

Printers

Plotters

Memory

Disc Drives

Workstations

Data Acquisition

TECHNICAL &
SCIENTIFIC
APPLICATION
INCORPORATED

2040 West Sam Houston Parkway N.
Houston, Texas 77043
Telephone 713 935-1500
Fax 713 935 1555



1 800 422 4872

CIRCLE 137 ON READER CARD

Datasys

COMPUTER CORPORATION
BUY • SELL • LEASE • TRADE

Hewlett-Packard

- SYSTEMS
- UPGRADES
- MEMORY
- PERIPHERALS

Call Today 800-DATASYS
(328-2797)

Dallas Oklahoma City
(214) 931-9195 (405) 947-0475
FAX (214) 931-9619 FAX (405) 947-3046

CIRCLE 484 ON READER CARD



I/O Data Systems, Inc.

3000/9000/1000

HP

BUY/SELL/TRADE

(216) 835-2211

27378 W. Oviatt
Bay Village, OH 44140
FAX (216) 835-0220

CIRCLE 272 ON READER CARD

TUNE INTO HP

Pre-owned Equipment

3000 Peripherals 9000

BUY SELL TRADE


WORKSTATIONS
CPUs
DISC & TAPE DRIVES
TERMINALS & PRINTERS
3000/9000 MEMORY

Lynne Company

(Calif) 805-489-1564
(Outside Calif) 1-800-338-5019
(Fax) 805-481-3799

CIRCLE 219 ON READER CARD

HEWLETT-PACKARD



The Right Equipment. Right Now.

BUY SELL RENT REPAIR

Memory
Plotters
Printers
Disc Drives
Workstations
Data Acquisition

9000
1000
3000
TEST

TECHNICAL & SCIENTIFIC APPLICATION INCORPORATED

2040 West Sam Houston Parkway N.
Houston, Texas 77043
Telephone 713 935-1500
Fax 713 935-1550

1 800 422 4872

CIRCLE 228 ON READER CARD

HEWLETT-PACKARD 9000

IT'S OUR SPECIALTY.

PRINTERS PLOTTERS
LaserJets DraftPros
DeskJets DraftMasters
Rugged Writers Electrostatics

WORKSTATIONS

Series 80, 200, 300, 400

We offer large discounts, outstanding service and immediate delivery. Call us before you buy a printer or plotter!



TED DASHER & ASSOCIATES

4117 2nd Avenue South
Birmingham, AL 35222

(205) 591-4747 or (800)638-4833
Fax: (205)591-1108

CIRCLE 233 ON READER CARD

ELECTRONIC SERVICES, INC.

FAX 509-662-8271

COMMERCIAL DIVISION

BUY • SELL • TRADE
HP 1000 • 3000 • 9000

509-662-9039

MILITARY DIVISION

Specializing in US Government
Military and related Customers.
We maintain a large inventory of Systems
Peripherals and Parts to support
the HP 9020A/9020C Series Computers

509-662-6229

Since 1973

CIRCLE 212 ON READER CARD

HEWLETT-PACKARD

1000 • 3000 • 9000

BUY • SELL • RENT • LEASE

MAINTENANCE
PROCESSORS • PERIPHERALS • SYSTEMS

EURODATA INC.

(613) 745-0921
Fax: (613) 745-1172

2574 Sheffield Road, Ottawa, Canada K1B 3V7

CIRCLE 283 ON READER CARD

SHERLOCK

Systems & Solutions

Sensible Solutions To The Mysteries
Of Your Hardware Requirements

Solutions ... Not Just Answers

We inventory a large line
of CPU'S and peripherals.
MPE • MPE-XL • UNIX
Buy • Sell • Trade • Lease



CALL
1-800-827-6804
FAX
216-848-4515

CIRCLE 491 ON READER CARD

HP-1000

BUY • SELL • TRADE • RENT

Hewlett-Packard Computer Equipment

Complete product line
including, Systems, Memory,
Discs, and Tapes.



HERSTAL AUTOMATION LTD

3171 West Twelve Mile Road
Berkley, Michigan, USA 48072
Telex 650-321-1560
FAX 313-548-2010
Phone 313-548-2001

CIRCLE 216 ON READER CARD

HEWLETT PACKARD

Depot Repair

- Expert Depot Repair
- 5 Day Turnaround
- Emergency Exchange Program



1-800-837-0061

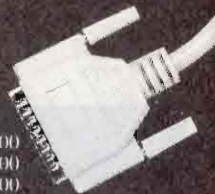
216-365-9950 Ohio
216-365-3916 FAX

CIRCLE 158 ON READER CARD

AMTEK

**YOUR
HP
CONNECTION**

1000
3000
9000



• BUY • SELL • SERVICE •

1-800-765-0331

Los Angeles • Washington D.C. • Tampa

CIRCLE 206 ON READER CARD

WE FIX H-P

- Expert Depot Repair •
- 5-day Turnaround •
- Buy and Sell •
- H-P 1000/3000/9000
- LaserJet Repair •

**CRISIS
800-729-0729**

We accept VISA, AMEX and MasterCard
408-270-1100 - San José, California
408-270-1183 FAX

CIRCLE 211 ON READER CARD

Established 1978

HP Remarketing Specialists

1000 — 1000 — 1000

BUY
SELL
TRADE



Phone: 408-429-6144
Fax: 408-429-1918

CIRCLE 229 ON READER CARD

The HyPoint Advantage . . .

INVENTORY

“Specializing in Full
Line of
HP 3000 Products”

Buy ■ Sell ■ Trade ■ Lease

HyPoint Technology
600 Ken Mar Drive
Cleveland, OH 44147

1-800-231-5500

216-526-0323

CIRCLE 217 ON READER CARD

HP 3000

**Buy — Sell — Trade
Hewlett Packard Equipment**

CALL

**713-690-1100
(Fax) 713-690-1130**

**Surety
Systems**

8600 Jameel Road, Suite 120
Houston, TX 77040

CIRCLE 226 ON READER CARD

25

YEARS

1968-1993

*HP Hardware, Repair, Maintenance and
Disaster Recovery Services.*

Computer Solutions, Inc.

201-672-6000

CIRCLE 209 ON READER CARD

**NORCO COMPUTER
SYSTEMS, INC.**

*Hewlett-Packard Quality
at a NorCo Price*

1000 • 3000 • 9000 • 250

**BUY—SELL
TRADE—LEASE**

**Processors, Peripherals
and Systems**

21337 Drake Road
Cleveland, OH 44136-6620
FAX: 216-572-0636
216-572-4040 1-800-892-1920
(Outside Ohio)

CIRCLE 221 ON READER CARD

BUY • SELL • TRADE

**COMPLETE HP SYSTEMS AVAILABLE
ALL PERIPHERALS**

*All items in stock — immediate delivery
All warranted to qualify for manufacturer's
maintenance.*

ConAm Corporation

Canada/US 800-926-6264
California 310-419-2200
FAX 310-419-2275

CDLA

RENT • LEASE • MAINTENANCE

CIRCLE 210 ON READER CARD

HP 980

AVAILABLE IMMEDIATELY.

FULL OWNERSHIP
IN RETURN FOR BALANCE
OF LEASE PAYMENTS.
WILLING TO NEGOTIATE.
PLEASE CONTACT PHIL
MORRIS OR DAVE DENT
AT 416-966-0308 or
416-967-1510
FOR DETAILS.

CIRCLE 273 ON READER CARD

INFORMATION

Rates: 1 time: \$525 6 times: \$420
3 times: \$475 12 times: \$365

Size: 1/9 page — 2³/₁₆" x 2³/₄"

COLOR NOW AVAILABLE
\$100

- Typesetting and composition available.
- Camera ready mechanical required.

For more information call:

Lisa Merck
(708) 655-0100

CAREER *opportunities*

HP CAREERS

*Permanent & Contract
Southeast & Nationwide*

YOLANDA WORLEY

Prof. Recruiter — 5 years
System Analyst/Eng. — 9 years
(Manufacturing Environment)

PHELPS PERSONNEL ASSOCIATES INC.

P.O. 4177, Greenville, SC 29608
(803) 235-3499 FAX (803) 271-1426

CIRCLE 227 ON READER CARD

COME JOIN OUR EXPANDING UNIVERSE

Wesson, Taylor, Wells & Associates is a nationwide information technology consulting firm providing solutions to many of America's largest and most progressive corporations. Due to the ongoing expansion of our business, we can provide significant opportunities in a variety of disciplines for **project leaders, analyst/designers, programmers** and a number of technically skilled positions. To discuss the prospects of a stimulating and professionally rewarding career move, send your resume or call today.

WESSON, TAYLOR, WELLS
P.O. Box 12274
RESEARCH TRIANGLE PARK, NC
27709-2274 • 1-800-833-2894



- SYSTEMS INTEGRATION • APPLICATION DEVELOPMENT
- MIGRATION/DOWNSIZING • PROJECT MANAGEMENT
- TELEPHONY • IT STRATEGIC PLANNING

CIRCLE 201 ON READER CARD

HP CAREERS NATIONWIDE

Put your valuable **career** or **job opening** in the hands of the experienced HP recruiter who is heavily involved in **YOUR** industry!!!

- Professional Recruiter since 1975
- Certified Personnel Consultant (CPC)
- Author of "Peopleware" articles
- Speaker at INTEREX, ICMS and HP RUGS
- RUG Council Member and ACSC Rep
- Nationwide database of over 10,000 HP contacts
- Networked nationally for all geographic locations

Call - Amos & Associates



Diane Amos, C.P.C.

633-B Chapel Hill Road
Burlington, N.C. 27215
(919)-222-0231
Fax: (919)-222-1214

CIRCLE 204 ON READER CARD

"HP Professional is very useful. Especially the New Product section and articles on the HP 3000. In fact, the ads are even helpful. I called an advertiser for more information on the HP 3000."

| James Burton, IS Manager
Boise Cascade

HP Professional

215.957.1500 FAX 215.957.4264

Reader Service Number	Page	Reader Service Number	Page		
200	ACOM Computer, Inc.	66	220	Martech	53
104	Adager	39	168	M.B. Foster Associates	46
242	Artecon	C2	155	M.B. Foster Associates	59
476	Bear Computer Systems Inc. ...	24	159	Media Magic	43
171	Black River Computers	51	472	Minisoft, Inc	62
108	Bradmark Technologies, Inc. ...	C3	482	Network Computing Devices	29
274	CenterLine Software	21	246	Newport Digital Corp.	9
454	CMI	53	488	Newport Digital Corp.	11
117	Cognos, Inc.	6-7	161	NSD, Inc.	48-49
167	Computer Solutions, Inc.	58	106	One Source Computer Services	51
232	Concorde Technologies	13	208	ParaSoft	12
112	Contemporary Cybernetics Group	5	277	Pro Software	58
282	Corporate Technology	61	225	Protos Software	47
172	Corporate Computer Systems ..	41	268	Quest Software	27
461	Delta Micro Systems	19	157	Rainbow Technology	63
107	Frame Technology	22	153	Ross Systems	54-55
215	Harborside Marketing Inc	64	131	S.A.R. Incorporated	63
173	Herstal Automation, Ltd.	15	455	Synctronics	67
119	Herstal Automation, Ltd.	45	477	Tryonics Inc.	31
	Hewlett-Packard/Worldwide Customer Svc.	17	300	Tryonics Inc.	40
474	Hooleon Corporation	51	137	TSA	67
122	IEM, Inc.	2	128	V-Systems	42
247	Information Builders, Inc.	33	127	Walker Richer & Quinn, Inc. .	35
458	Insignia Solutions	37	263	Walker Richer & Quinn, Inc. C4	
185	Kelly Computer Systems	23	180	Wesson, Taylor, Wells & Assoc. 4	
281	Kingston Technology Corp	1	191	X Systems	57
463	Lawson	25			

COMING IN JULY . . .

Editorial Focus — Open Computing

■ **Standards Bodies Overview** — Gordon McLachlan looks at the proliferation of open systems and standards organizations whose decisions affect the technology investments of HP customers.

■ **Database Standards** — David Himes, technical chairman of the SQL Access Group, outlines the progress his organization has made toward a unified query language for accessing heterogeneous databases.

■ **Dreaming Of A Common Environment** — Some are calling them the “gang of six,” but HP, IBM, Sun, Univel, SCO and USL swear their Common Operating System Environment (COSE) initiative is strictly in the interest of their customers. Bill Sharp examines what COSE could mean for HP workstation users in multiplatform UNIX environments.

SPACE CLOSING: 6/7 MATERIALS DUE: 6/14

*Articles subject to change.

ADVERTISING SALES OFFICES

Leslie Ringe, Publisher
(617) 861-1994

NEW ENGLAND (617) 861-1994

Alonna Doucette, Regional Sales Manager
238 Bedford St., Ste. 3
Lexington, MA 02173
FAX (617) 861-7707

MID-ATLANTIC (401) 351-0274

Edward Marecki, Regional Sales Manager
One Richmond Square
Providence, RI 02906
FAX (401) 351-0276

MIDWEST & SOUTH (215) 957-1500

Peter Senft, Regional Sales Manager
101 Witmer Road
Horsham, PA 19044
FAX (215) 957-4264

NORTHERN CALIFORNIA, NORTHWEST, WESTERN CANADA (415) 873-3368

Judy Courtney, Regional Sales Manager
903 Sneath Ln., Ste. 220
San Bruno, CA 94066
FAX (415) 873-6608

SOUTHERN CALIFORNIA & SOUTHWEST (818) 577-5970

Karin Altonaga, Regional Sales Manager
1010 E. Union St., Ste. 101
Pasadena, CA 91106
FAX (818) 577-0073

INTERNATIONAL (617) 861-1994

Leslie Ringe, Regional Sales Manager
238 Bedford St., Ste. 3
Lexington, MA 02173
FAX (617) 861-7707

(215) 957-1500

Cheryl Demaiorbus, Marketing Services Manager
Lisa Hartman, Marketing Services Assistant
Lori Goodson, Customer Service Manager
Mary Browarek, Card Deck Manager
Cathy Dodies, List Rental Manager

HP Professional

101 Witmer Road • Horsham, PA 19044
(215) 957-1500 FAX (215) 957-1050



Gordon McLachlan

On Burrowed Time

For most of us, careers are like car wrecks: You don't plan

them, they just happen. All you can do is pray you're lucky and don't get hurt.

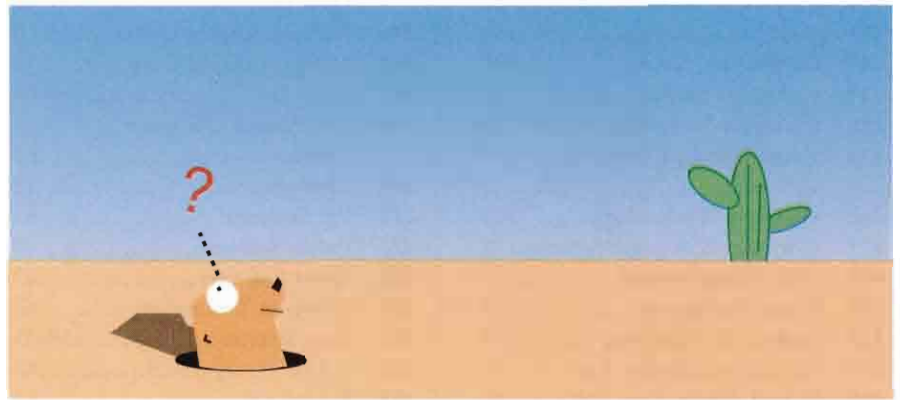
One way you can improve your luck is to generalize. For the first part of your career, you're pretty much forced to specialize. If you don't, nobody knows what hole to stuff you into. Career planning is nothing more than your relationship to the hole, and career growth a matter of getting out of the hole.

Let's pretend for a minute that we're burrowing rodents of one sort or another. We might be moles, happily digging our tunnels and snacking on grubs. It's a simple existence, as long as nothing comes in after us. If we're really lucky, the hole won't flood, and we won't have to come up to the surface. Life is rough up there for a mole.

Now let's be rascally rabbits. The hole is a base of operations, not the boundary of our existence. The opportunities are on the outside. If we're lucky, we find Elmer's garden. The hole is a great place to dash back into when things get rough. It has two openings, so we can bail out if a predator comes in one of them.

What you don't want to be is a prairie dog. Prairie dogs head for the hole at the first sign of trouble. Then, for some reason known only to themselves, they pop their heads out to see if whatever scared them is still out there. They're not really comfortable out in the open, but they don't have the luxury of staying underground.

In a sense, moles are specialists, while rabbits practice a more generalized survival strategy. I don't know what to



think about prairie dogs except that they wouldn't do what they do if they really thought it over. I may be anthropomorphizing the situation a bit, but I think I'd rather be a rabbit. The subterranean existence of the mole may be safer most of the time, but bunnies have better careers.

Holes In Your Resume?

Being a generalist does not mean being a dilettante. You do have to know what you're talking about. Rabbits are real good at what they do, which is reproduce, eat and run. If you want to be a career generalist, you should also have a survival strategy in place.

First is having a good hole to run back to. Even a generalist has to have some specific expertise to fall back on. Just make sure it's in a good area. You also need to know when to abandon a hole when it's no longer suitable. There's nothing worse than running back to the burrow, only to find the opening filled in, or a family of weasels in residence.

No matter how good a hole you pick, sooner or later you'll probably have to move on. Timing is everything. The best time to look for a new hole is while you still have one.

As fast as the technology is moving along, you have to be careful not to get too comfortable where you are right

now. All good things come to an end. Being a mainframe COBOL wizard might have been a great idea 10 years ago, and will pay the bills now, but it's not the wave of the future.

Even if you've got a cozy burrow, and the future's so bright you've got to wear sunglasses, you have to be prepared to move around a bit. Have you ever noticed that everybody wants people with only three to five years of experience? After you've spent that long on something, you stop learning, and start repeating yourself. You can see how your economic condition can go south real fast if your expertise levels off as your salary continues to climb. It doesn't take an MBA to see that it might be more cost-effective to replace you with someone half as experienced and half as well-paid.

The trick is to cultivate specialties that are complementary and prepare you for the new challenges coming down the pike. Downsizing and client-server applications are prime examples. They require a knowledge of mainframes, databases, networks, PCs and UNIX, but more than that, they need people who can see the big picture, and fit those puzzle pieces together. If you stack your tours of duty correctly, your experience will be a plus, not a negative. ■

Database solutions couldn't be brighter!

Integrity Check

Capacity Management

Capacity Trend Analysis

Backup Compression

Performance Analysis

Structural Changes

Test Database Generation



If you are having difficulty determining what database utility is right for your system, Bradmark has plotted a clear path for any IMAGE user.

DBGENERAL, the most comprehensive database utility available for all HP3000s, will globally diagnose many of your database problems, while overseeing your entire database operation. And speed... DBGENERAL will analyze and fine tune your database performance to guide your way through millions of entries, fast. With over 40 options to choose from, you won't find a database utility more complete.

So stop gazing into a dim, vast unknown and discover why over 10,000 HP3000 sites worldwide found DBGENERAL as their premier database utility.

Contact a Bradmark representative at 1-800-ASK-BRAD, and plot a course towards a brighter world of solutions today!



BRADMARK
Technologies, Inc.

ENGLAND
BRADMARK UK Ltd. (44) 151 005-795444

AUSTRALIA
Facer Info. Design (61) 2-484-3979
BELGIUM
Cheops-Test-Net (32) 03-237-7906
U.S.A.
DENMARK
Teamco Data A/S (45) 75-92-5366

FRANCE
ARES (33) 1-33-36-1110
GREECE
HP Consultants (30) 1-77-0561
GERMANY
I.A.B.G. (49) 89-608-2078
J.F. Infosys GmbH (49) 6723-6011
SWS Software GmbH (49) 7521-7901
ISRAEL
Softkol (972) 3-348-936

MEXICO
Infosistemas Financieros AS (525) 255-0293
NETHERLANDS
Quant Systems (31) 2503-40334
NORWAY
Teamco Datasoft AS (47) 22-46-8820
SAUDI ARABIA
Saudi Info. Technology (966) 1-477-4555
SINGAPORE
Info-Tech Computer Sys. (65) 737-4161

SWITZERLAND
SWS Software Systems (41) 31-981-0666
SWEDEN
Ole Nord AB (46) 8-623-0050
Teamco Nardata (46) 9-103-6480
TAIPEI
Hewlong Info. Corp. (886) 2-545-2166
WEST MALAYSIA
Solsis (60) 3-256-1911

PC connectivity?



Reflection makes it child's play.

If connecting PCs to minicomputers, mainframes, and servers has you puzzled, choose Reflection® and Reflection Network Series® software from WRQ.

No other software vendor offers such a complete solution to integrate personal computers with HP 3000, HP 9000, VAX/VMS, UNIX, and IBM systems. Reflection provides the most precise terminal emulation for text and graphics, fast file transfer, a versatile command language, and more—for DOS, Windows, and Macintosh platforms. Reflection also offers a reliable PC X server. All backed by

a solid company with exceptional technical support.

If you want to run host and server applications at the same time, add the Reflection Network Series. Run NS/VT, LAT, Telnet, and TCP/IP concurrently with LAN protocols from a single PC, over Ethernet or Token-Ring networks. The Reflection Network Series also includes support for Berkeley Sockets, NetBIOS, and NetIPC—yet it takes remarkably little memory.

Putting all the pieces together can be challenging. So avoid the mind games.

True genius is simplicity. Whether you need basic PC-to-host connections, links to multiple hosts and LANs, or you're moving to the world of X, there's one obvious solution: Reflection.

To solve your connectivity
problems call

1-800-92NETWORK

 **Reflection®**
"Making PC connections count"