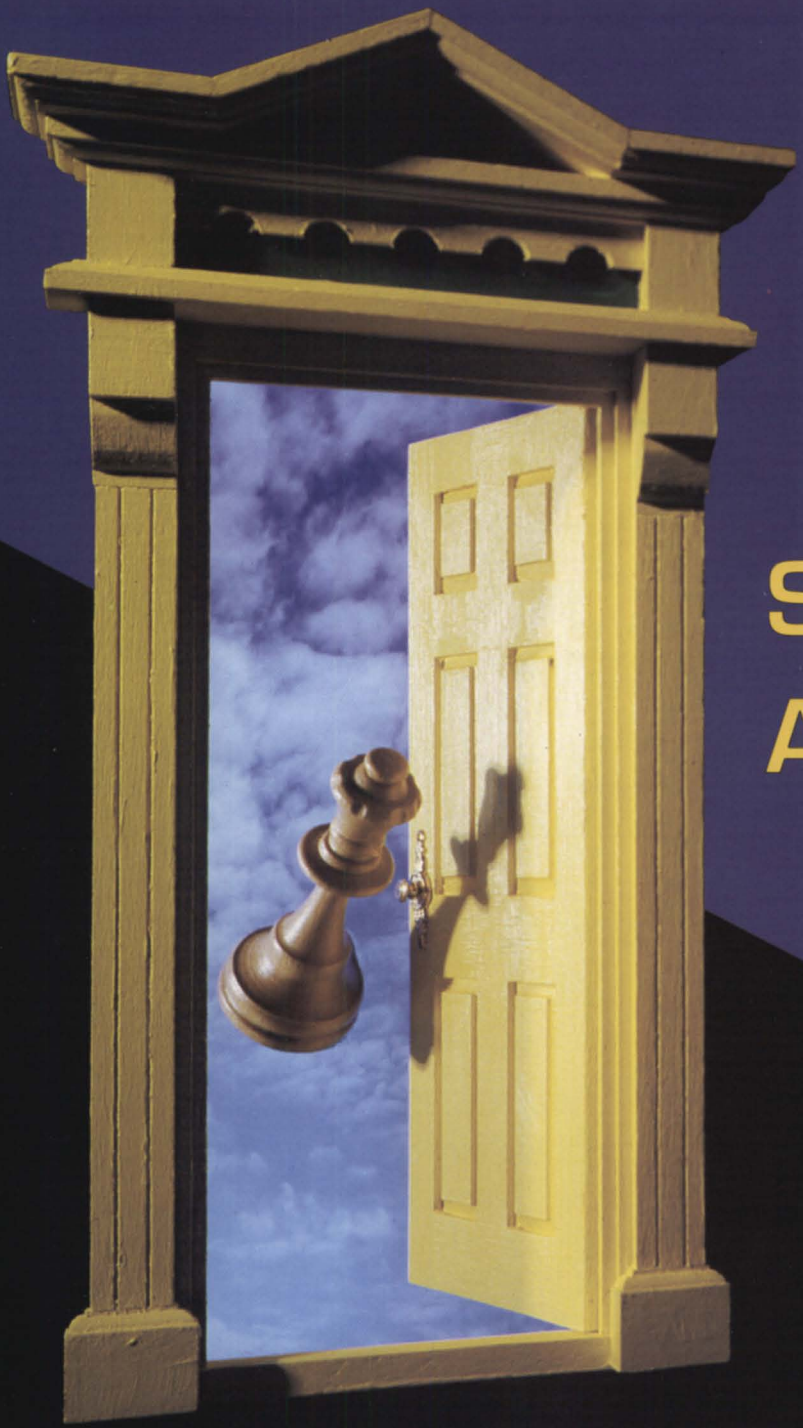
December 1989

FOCUS

The Magazine of the North American Data General Users Group



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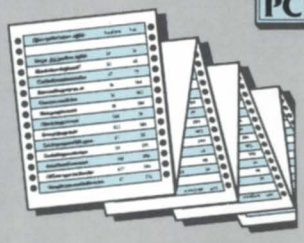

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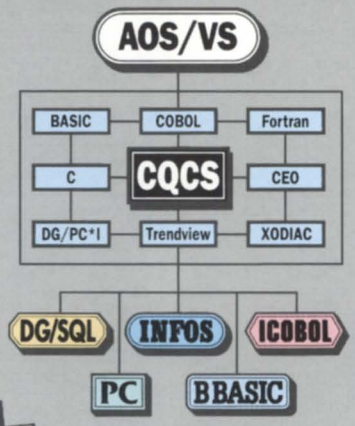

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SOCIETY OF NATIONAL ASSOCIATION PUBLICATIONS

PRESIDENT'S PAGE
If the shoe fits
by Lee Jones 4

ROUNDUP
RIG/SIG Committee plans national tour
Membership drive begins
by Cathlene Gentry 6

UNIX
Unix products hardly uniform
Uniforum exhibits show that beyond common standards and software, Unix implementations have healthy differences
by Don Dewar 8

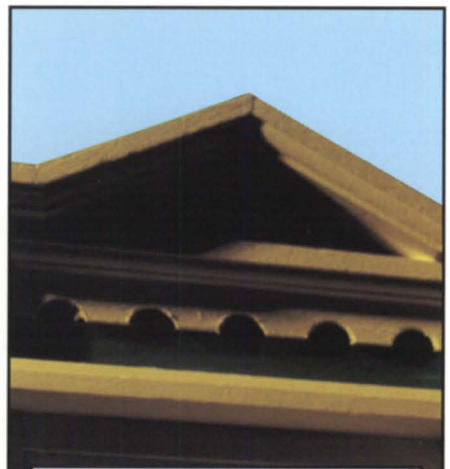
BULLETIN BOARD
Bytes and bites from the bulletin board 19

SYSTEM MANAGER'S LOG
You got it!
New Orleans yielded good food, bad sleaze, and surprising receptivity from Data General
by Brian Johnson 20

SYSTEM CONCEPTS
Wait here for instructions
When certain applications became too time-consuming, special purpose instruction sets were invented
by Michael Dupras 28

OA TODAY
Forget kindergarten
Wordperfect Notebook actively encourages "cheating"
by Kent Finkle 30

Cover photo by Carrington Weems



FOCUS ON: STRATEGIC ALLIANCES

Field of dreams
The Open Software Foundation, a congregation of 165 computer organizations, is creating a vendor-neutral open systems architecture. Data General is among the believers
by Seemee Ali 13

Asparagus tips, anyone?
Alliance with Nippon Telegraph & Telephone has yet to produce
by Robin Perry 14

Don't fence me in
Data General joins different Unix organizations to make sure users get the best of both worlds
by Robin Perry 14

Strategic loyalties
Headed by a former Data General employee, the Object Management Group coordinates an industry-wide effort to make systems and software from different companies work together efficiently
by Seemee Ali 15

INSIDE ICOBOL
Notes from New Orleans
Facts: ICobol rev 1.51 for MS-DOS, updated benchmarks, the MV/2500, and RDOS for the MV/78XP and MV/15 series. But rumors of ICobol re-written in C are only half true
by Tim Boyer 36

THE WORKSTATION
Commodity computing
Don't let the speed of change in the workstation marketplace catch you off guard. With foresight, you can make current trends work to your advantage
by Doug Kaye 40

DISCOVERIES
Sloppy times three
A less than perfect sample program is revised to allow simultaneous copies under AOS/VS
by Jim Siegman 42

1989 INDEX
Index of Focus magazine articles 48

SOFTWARE LIBRARY
A complete listing of the NADGUG software library 59

PRODUCTS AND SERVICES
The latest products for DG systems 60

ON-LINE HELP
Who to call about NADGUG and Focus 66

PRISM
Brief notes from the DG community 68

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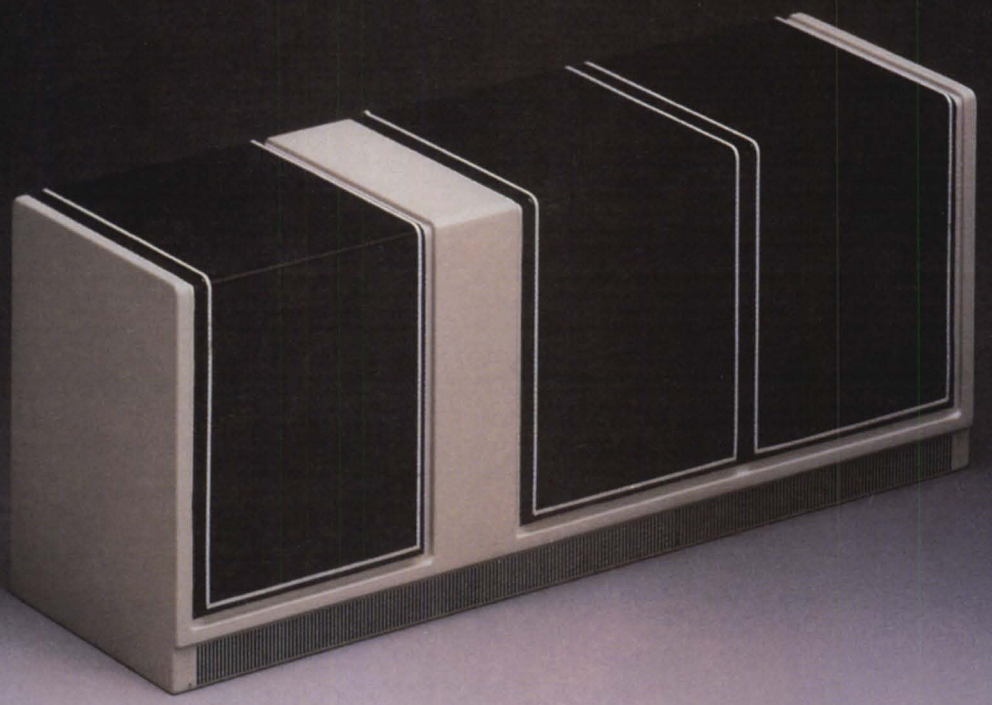
AOS/VS & ORACLE



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TRBA

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If the shoe fits

Wes Thomas, Lee Jones, Robin Perry, Frank Perry

It's been more than four years since NADGUG assumed the momentous responsibility of publishing its own magazine. It turns out that it was only the first in a series of major steps the group has taken since then to transform itself into an autonomous organization.

During those four years *Focus* has grown remarkably. If you look back to issue number one (September, 1985), you'll see it was almost amateurish by comparison. Still, it was a start, and we were proud of it. Over the years, *Focus* has grown fatter, better looking, and increasingly full of useful information for user group members.

Considering how badly the Dallas Cowboy football team has been doing this year, maybe I shouldn't use the analogy . . . but I will anyway. Until this year, Tom Landry was always introduced as "the only head coach the Dallas Cowboys have ever had." Well, guess what folks. They fired him.

For its first four years, Greg Farman was the only editor *Focus* magazine had ever had. No, we didn't fire him, but we did promote his able Associate Editor Robin Perry. The photo on this page shows the passing of the official editorial red pencil from Greg to Robin. As photo opportunities go, it wasn't a very ceremonious occasion. Wes Thomas, Frank Perry, and I were at the NADGUG offices to review the accounting and membership management procedures we have established for the group, and we just took a few minutes to snap some pictures.

It was a pretty informal moment, but a lot of thought preceded it. Greg has been hoping for a long time now that somebody would come along who could satisfy two crucial characteristics: they had to have the interest and creativity to do the editor's job, and they would also have to be willing to work for what we can afford to pay. Greg has been working with Robin for more than a year now, and he assures us that she's the one. Wes Thomas, the former chair of the Publications Committee, and Steve Kern, the current chair, agree. So do I.

This doesn't mean that Greg is out of the picture, of course. He's still on the masthead, but now he gets just one job instead of the two he used to do. I have a strong feeling that he will continue to be involved in the editorial side of *Focus*. On the other hand, I've known Greg long enough to know he has the good sense to stay out of the way when he's not needed. Robin brings a lot of good ideas to her new position, and I feel certain we can look forward to continuing growth and improvement for our magazine.

Any of you who have had the opportunity to gauge the size of Greg's feet will agree with me when I say that Robin will have to fill a large pair of shoes. Δ

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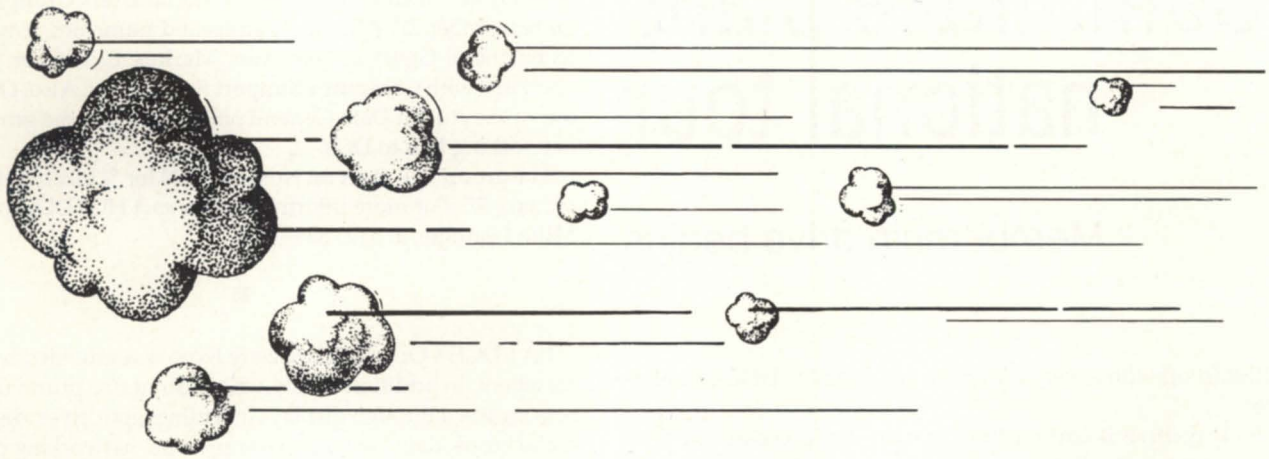

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RIG/SIG Committee plans national tour

Membership drive begins

I'll start off with a few news items from the NADGUG conference . . . .

The **Executive Board** meeting that always precedes the conference was very productive for interest groups. Two new groups, the **Music and Recording Industry SIG** and the **Smokey Mountain Users of Data General Equipment** (SMUDGE) were recognized. The RIG/SIG committee gained two new vice chairpersons for the upcoming year. **Bernie Abrams**, vice president of **LA EDGE** (Los Angeles End Users of Data General Equipment), will step into the roll of Western vice chair, and **Chuck Goes,** president of **CADGUG** (Chicago Area Data General Users Group), is the Eastern vice chair.

There are other developments that will affect interest groups. To spread information about the benefits of NADGUG, members of the **RIG/SIG Committee** will tour groups in their areas. Also, plans are underway to provide interest groups with membership software.

In an effort to increase membership in regional interest groups, the RIG/SIG Committee will provide the groups with names of new NADGUG members in their areas. In return, the committee encourages all interest groups to provide NADGUG with their member lists. You may send your member lists to me at the address below.

On a personal note, the biggest learning experience for me at this year's conference was finding out how many talented entertainers we have in NADGUG. The post-banquet concerts (by some conference attendees) at the Rainforest were the highlight of my New Orleans trip!

■

The **AOS/VS** special interest group has scheduled its first workshop. The workshop, being developed by AOS/VS system managers and users, will be held on January 11 and 12 in Miami Beach, Florida. Topics include office automation system resources, AOS/VS vs. AOS/VS II, performance issues, hardware and software support, security, and MV to Aviion migration strategies. There will also be time to discuss specific user concerns. The cost of the two-day workshop is $250. More information can be obtained from **Computer Training Associates** or **Wilcox World Travel**. Call the Meetings Department at 1-800/438-5828 or 1-800/452-2803 (in North Carolina).

■

The Uptown Enchilada Bar in Austin was the site of the **HOTDUG** (Heart of Texas Data General Users Group) meeting on September 27. After margaritas and munchies, it was down to business. Guest speaker was **Markus L. Horner**, a power specialist with **Computex Support Service, Inc**. Also, **Don Nichter**, of the Austin Data General office, talked to the group about networking PCs to DGs.

The group will meet on November 29 for "Unix night" and on January 25. For more information, contact HOTDUG president, **Mike Leathers**, at 512/835-0143.

■

LA EDGE's October Hardware Expo was attended by over 90 members. In addition to enjoying a dinner of prime rib, members browsed through displays including tape drives, disk drives, cache boxes, data switches, laser printers, networking products, word processors, disk optimizers, and 4GL languages. Data General representatives demonstrated Aviion computers. Some of the hardware was connected to LA EDGE's MV/4000, which will be attending most of the meetings for the rest of the year.

Pictured at the September meeting of LA EDGE are (left to right) Jim and Clyde Sparks of Delphi Data, and Doug Panelley, president of LA EDGE.

The next meeting of LA EDGE will be held at the Brookside Country Club on Tuesday, December 5, at 7 p.m. A casino theme, door prizes, and evening meal are on the agenda. Proceeds will benefit local charities that aid the homeless.

The January LA EDGE meeting is being planned around the theme of computer graphics. For more information about LA EDGE, contact **Mark Speer** at 818/897-7777 or **Carolyn Nabor** at 818/793-2141. Δ

Cathlene Gentry is the RIG/SIG coordinator for NADGUG. She may be reached at **Focus** *magazine, 4807 Spicewood Springs Rd., Suite 3150, Austin, TX. 78759; 1-800/877-4787, (1-800/USR-GRUP).*

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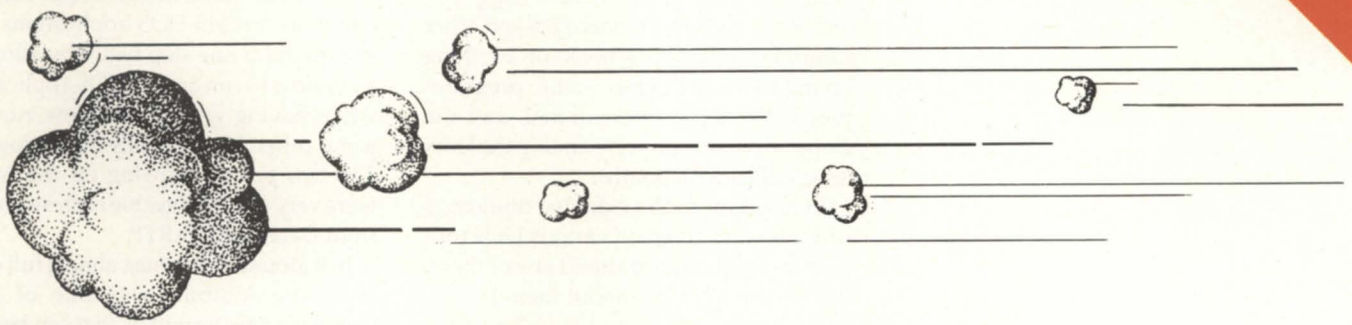

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Unix products hardly uniform

SYNOPSIS

Exhibits at Uniforum show that beyond common standards and software, Unix implementations have healthy differences.

by Don Dewar
Special to Focus

Vendors of different Unix products showed their wares at the latest Uniforum convention held in Boston. Because of Data General's commitment to Unix and the growing momentum of Unix in the market place, I didn't want to miss the opportunity to see such an exhibition at the Hynes Convention Center, so close to home. Although the exhibition was smaller than I was hoping, the trip was well worth it.

The exhibits can be broken down into four general categories: actual Unix implementations, applications, hardware, and literature. In addition, many of the Unix societies had booths set up to answer questions and introduce themselves.

In addition to Data General, some of the companies exhibiting at Uniforum were Digital Equipment, Honeywell Bull, and Sun. Motorola was there, too, showing hardware. Publications that were giving out free copies included some of Patricia Seybold's groups, *Unix Today* and *Unix Review*, while Prentice Hall and other publishers were selling books on anything having to do with Unix and C programming. OSF, Unix International, and the 88open Consortium were among the Unix associations with booths.

(In addition to the exhibits, numerous tutorials were given on various Unix topics, but since I did not attend any of these, I won't say any more about them.)

Data General at Uniforum

Data General exhibited some Aviion family workstations, a 386 PC and one of the new line of terminals. Glossies were prominently displayed. One of the Aviion workstations was running Motif, the windowing platform from OSF that has been chosen for the Aviion workstations.

One of the images shown to display the Aviion's graphic capabilities was that of a colorful baboon's face. Brought up in a window either by "clicking" on an icon or by choosing a file from a survey, it was almost photographic in quality. A colleague unknowingly "clicked" on the baboon icon several times and soon, while we were looking at other features of the display, baboons started popping up in windows all over the screen.

While we were looking at other features of the display, baboons started popping up in windows all over the screen

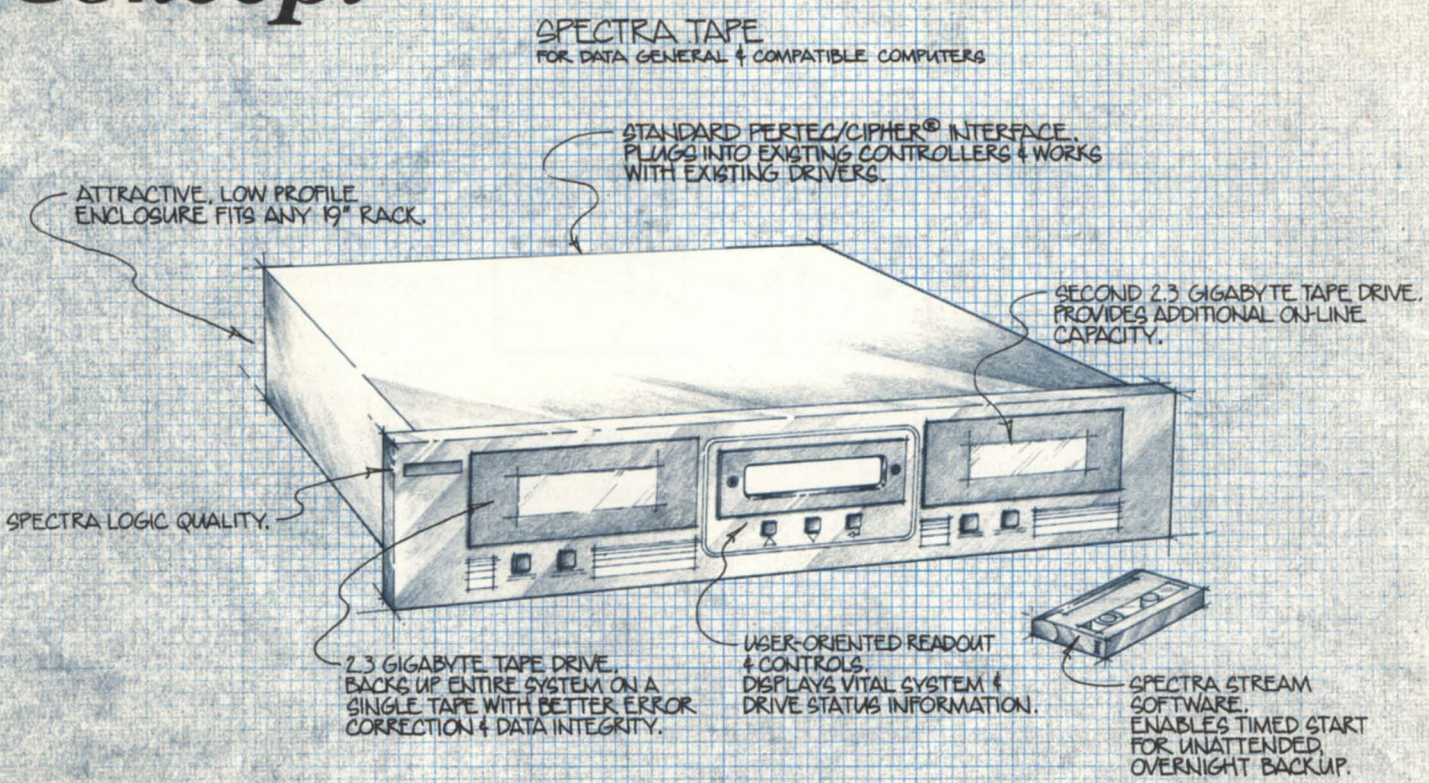
The other Aviion workstation was running an MS-DOS application program using VP/ix. One of the most useful features I have found in 386/ix has been the ability to run MS-DOS applications. The Aviion did it one step better by allowing a window to run an MS-DOS application, while having another window running some other Unix or MS-DOS program. The two people showing off the Aviion were very knowledgeable representatives from Data General-RTP.

Just around the corner, almost full circle from the Aviions, was one of Data General's new terminals that can be used on both Aviion servers or on Data General's line of proprietary computers. To emphasize the point, CEO was displayed on the screen.

Other interesting exhibits

Other exhibits caught my eye for one reason or another. Apple and AT&T were giving free chances to win a personal computer, an opportunity I couldn't pass up. Besides these flights of fancy, there were

Concept



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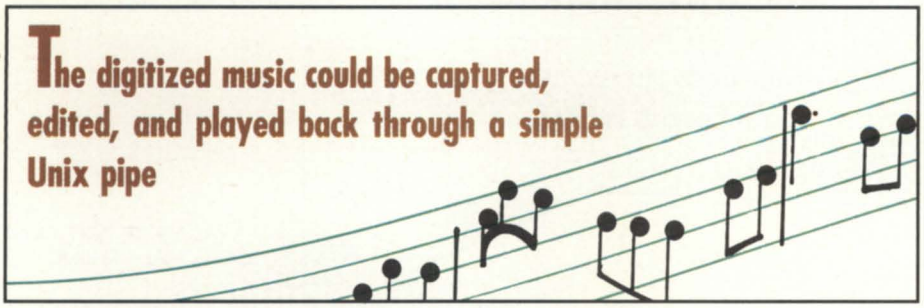

many other wonderful things to see.

One exhibit featured a computer that grabbed images from a laser disk and put them off to the side in a window. The image could then be edited. The images on the screen were amazingly crisp, and the system's response was remarkable.

Another exhibitor showed off its real-time Unix system. One system was hooked up to robot arms and moved them about. Another machine allowed you to see music on your screen as the music played. The digitized music could be captured, edited, and played back through a simple Unix pipe. What really made this stand out was that even as you were capturing the music and playing with it, the machine never missed a beat. It continued to capture the music with no data loss.

Some observations

After all was said and done, I came to the conclusion that the different Unix implementations had some healthy differences between them. Most tried to adhere to general Unix standards and use other standard software to augment Unix. The Unix-based systems that used Motif looked similar and the ones that used straight windows also appeared similar. However, like DG/UX, many of the systems had extra features to meet other needs. Some touted the ability to support multiple processors, while others described themselves as real-time operating systems. These capabilities are very important in some situations. Even with these additions to Unix, however, most of the implementations used the familiar Unix command line interactions or the usual window manipulations to let the operator perform a task, like the music processor mentioned above.

In bygone days, separate operating systems were built to support distributed processing, multiprocessing, and real-time interaction. Users had to learn entirely new techniques for interacting with an operating system, depending on the need or hardware vendor. From what I saw at Uniforum, it looks as if Unix is changing all that. Δ

Don Dewar is a senior software engineer at Data General Corporation.

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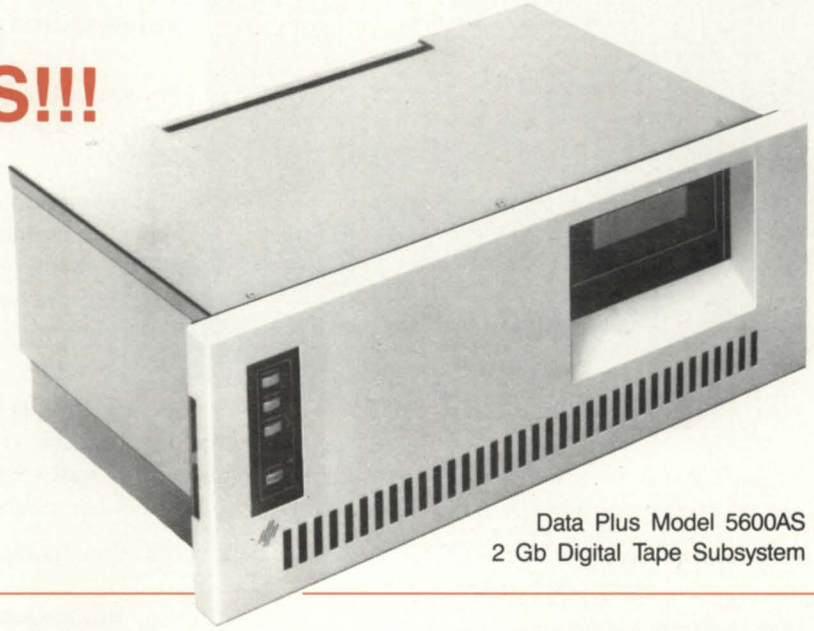

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WordPerfect Corporation has released WordPerfect Office 2.0 for the Data General AOS/VS operating system. Comparable to the recently released Office product for IBM PC networks, WordPerfect Office provides several products to automate the office environment.

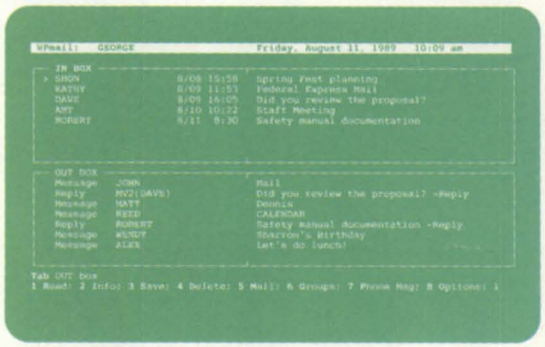
The flexible Shell menu can be used to organize all the programs available to a particular user. Single key access to any program on the Shell menu, and easy interrupt from one program to another, gives a user power to suspend temporarily one process while entering another. Any AOS/VS program can execute from the Shell menu, and submenus allow the user access to as many programs as they like.

In addition to the Shell menu, WordPerfect Office has enhanced the electronic mail feature to support sending messages, document, and files all at the same time in one envelope. A user can now send carbon copies and blind copies, along with his regular mail. Screens have been improved to make the sending and receiving of mail flow more smoothly.

The improved Calendar screen now displays up to eight weeks at a time. The user can set appointment memos, and to-do's for each day and view them all simultaneously. A new auto-date feature has been added to schedule repeating appointments. The alarm feature is available to notify the user of important appointments. Best of all, the to-do feature prioritizes the to-do items and will roll them to the next day if they are not completed.

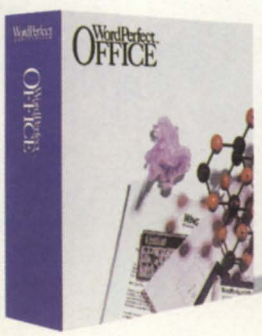
A simple, easily defined database, Notebook provides a convenient way to organize information. All Notebook files are saved in WordPerfect merge format so they are ready to use with WordPerfect documents.

In addition to doing basic math operations, Calculator lets the user perform advanced scientific, financial, statistical, and programming functions. Calculator entries are recorded in an on-screen tape display which can be transferred to other programs via the Shell Clipboard.



Three programs have been added to the Office software. File Manager is a list files-type feature accessible directly from the Shell. P-Edit is a full-screen program editor, and M-Edit lets a user customize macros without having to rewrite them.

Evaluation copies of WordPerfect Office are available by calling (801) 222-4100, or contacting your Reseller.



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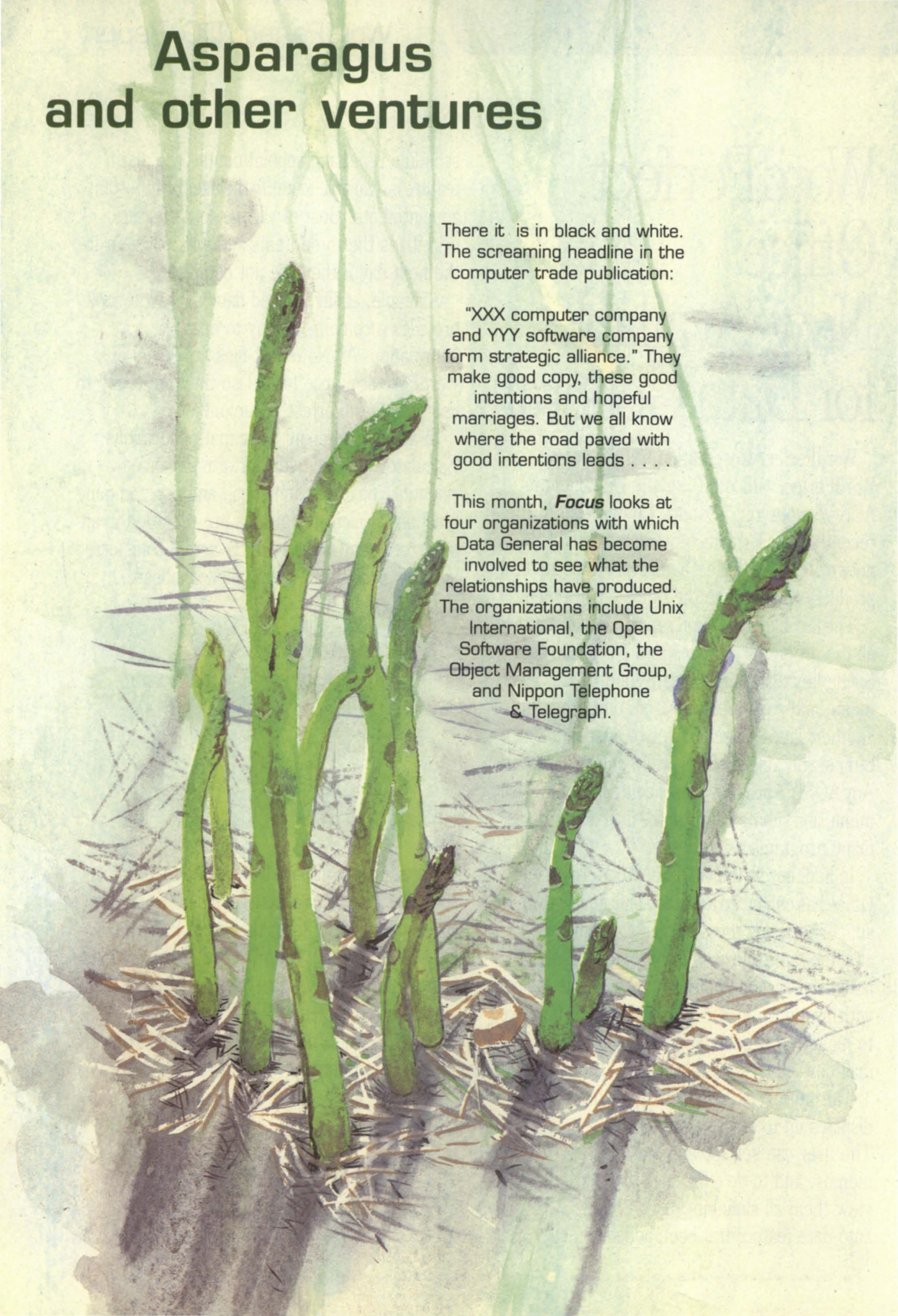
Asparagus and other ventures



There it is in black and white. The screaming headline in the computer trade publication:

"XXX computer company and YYY software company form strategic alliance." They make good copy, these good intentions and hopeful marriages. But we all know where the road paved with good intentions leads . . . .

This month, ***Focus*** looks at four organizations with which Data General has become involved to see what the relationships have produced. The organizations include Unix International, the Open Software Foundation, the Object Management Group, and Nippon Telephone & Telegraph.

Field of dreams

SYNOPSIS

The Open Software Foundation, a congregation of 165 computer organizations, is creating a vendor-neutral open systems architecture. Data General is among the believers.

by Seemee Ali
Focus staff

Open systems, the conceptual temptress in the computer industry's field of dreams, has attained an increasing degree of tangibility of late. In addition to Data General, believers in open systems include the likes of IBM, Hewlett Packard, and Digital Equipment. The Open Software Foundation (OSF), a not-for-profit corporation based in Cambridge, Massachusetts, devotes its energies to making the dream of ubiquitous software real, and making it profitable for all parties concerned.

The OSF's mission is to develop an open environment that will provide a single, globally accepted standard for software applications from particular architectures or individual vendors' products. Ultimately, it will offer its own system, OSF/1, as an open software environment including extensions and utilities. The Foundation is building the system incrementally, by issuing what it calls RFTs—requests for technology—for various components. The first of these was issued in July,

(see OSF, page 16)

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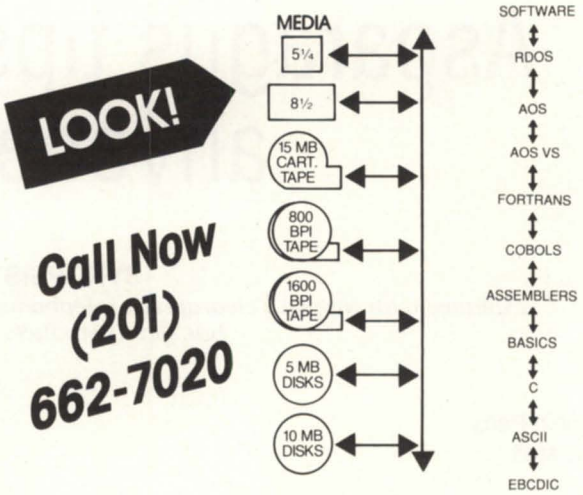

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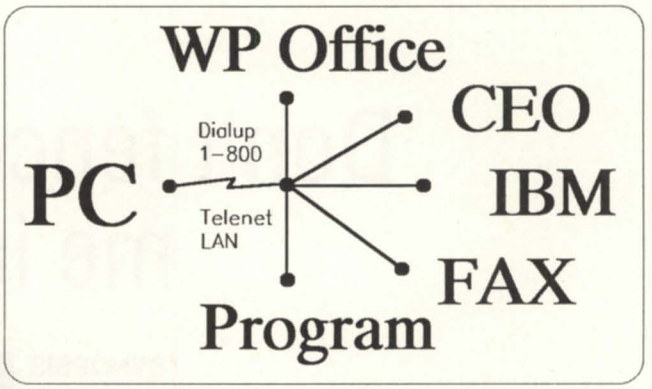

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Asparagus tips, anyone?

SYNOPSIS

Alliance with Nippon Telegraph & Telephone has yet to produce.

by Robin Perry
Focus staff

In October of 1987, Data General announced an alliance with Nippon Telephone & Telegraph Corp. of Japan. Bearing the unlikely code name of "Asparagus," the alliance called for the joint development of integrated digital communications systems centered around DG superminicomputers.

With the seed planted in a brouhaha of publicity, the Asparagus team quietly went underground and has not been heard from since.

Well, not exactly.

A prototype was sent to NTT last summer. No garden-variety communications system, it will purportedly use a combination of packet and data switching to handle data, voice, and computing in an intelligent network incorporating international computing standards. NTT would market the system to 5,000 data communications facilities in Japan. Data General would sell its own version in the United States and other international markets.

With the prototype in the testing stage, Data General officials are keeping mum on the subject. "It's really up to NTT to make an announcement," said Jim Dunlap, corporate spokesperson. "Once we know they are going to make an announcement, we will be glad to talk to you about every detail."

At the 1987 announcement of the Asparagus agreement, Data General President Edson D. de Castro explained the reason for the vegetative appellation. Like the delectable asparagus, he said, the project "must be fertilized well and cultivated for at least two years before its shoots can be harvested. Once established, however, the plant will multiply and produce an increasing number of shoots indefinitely."

One is left to wonder, poetically speaking, if this strategic alliance is lying fallow in the ground, or if Asparagus shoots will emerge in the spring of 1990? Δ

Don't fence me in

SYNOPSIS

Data General joins different Unix organizations to make sure users get the best of all worlds.

by Robin Perry
Focus staff

It may seem paradoxical that Data General is a member of both Unix International, an organization formed to promote AT&T's Unix System V, and the Open Software Foundation, which was formed by AT&T rivals to develop an alternative flavor of the Unix operating system. But in this case, fence straddling is more of a strategy than a sign of indecision, according to Data General's Don Lewine, director of engineering and a company representative for both organizations.

"The basic thing we're trying to do is to make sure that Data General customers have the best possible solutions to whatever problems they need solved. We really don't want to make a political statement to say we're for AT&T or against AT&T. What we want to say is that it is important for Data General to deliver leading-edge products from whatever source. That's the main thrust of our Unix standards business," Lewine said.

While the Open Software Foundation developed into a bona fide software company, Unix International took on the role of an advisory group. As a general member of Unix International, Data General may participate in work groups that study AT&T's Unix product and submit suggestions to the AT&T Unix Software Operation for improvements to future revisions. Current topics under examination are multiprocessing, user interfaces, file systems and transaction processing, standards conformance, and licensing.

Unix International conforms to the X/Open Common Application Environment, IEEE POSIX, and the Federal Information Processing Standard (FIPS).

"Basically what I do is try to keep an ear to the ground, find out what's going on, and make sure that the right people

(see Unix, page 16)

Strategic loyalties

SYNOPSIS

Headed by a former Data General employee, the Object Managment Group coordinates an industry-wide effort to make systems and software from different companies work together efficiently.

by Seemee Ali
Focus staff

With the right combination of open systems, object management, and distributed applications, Data General could find itself in an enviable position, according to Chris Stone, executive director of the Object Management Group.

"If they have a champion within the company, they could very well be on the leading edge of technology for the next 10 years," Stone said.

Data General undoubtedly has a champion at the OMG. In September, Stone was dividing his time between his responsibilities at Data General as a software group manager and at the OMG as its director. In a *Focus* interview that month, he said "I don't plan on wearing both hats forever—we're searching now for a full-time executive director." By October, Stone had become the exclusive property of the OMG, working as its full-time executive director.

In this capacity, Stone still shows a great deal of commitment to his former employer. OMG member companies include AT&T, Kodak, Groupe Bull, Hewlett-Packard, and Canon, but Stone says "I've got a very emotional tie to make sure [Data General] does it right."

The purpose of the Object Management Group is to make systems and software from different companies work together efficiently. Data General's Joseph Forgione, the company's director of distributed applications marketing, illustrates progress toward this goal with DG's CEO Object Office, which incorporates object oriented technologies.

Forgione elaborated further on DG's stance, saying "We've determined that object orientation is one of the key software technologies for the nineties, particularly in the area of distributed applications . . . and we've been investing heavily in developing this technology in the past couple of years. We find that having a major industry organization now embracing this trend is definitely to our advantage."

OMG is currently working with ANSI standards committees in order to set the parameters within which object management products should work. Stone says that since the technology is just emerging, the group has a significant advantage in actually determining the standards to be used, and that priority is being given to defining the terms used to lay the foundation for further standardization.

(see OMG, page 16)

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OSF
(continued from page 13)

1988, and resulted in the release of OSF/Motif, a graphical user interface technology.

RFTs are sent to OSF members and then evaluated by a team of experts who assess the strengths and weaknesses of each submission. The OSF/Motif RFT, for example, generated 39 submissions and comprises a hybrid of the submissions from Digital and HP. OSF/Motif received a significant endorsement in October, when the European Commission selected the product over AT&T's Open Look user interface.

OSF/1's next development phase revolves around object orientation. A related RFT calls for an architecturally-neutral format for distributing hardware-independent software. Another has been issued for a distributed computing environment that enables users to share resources such as computing power, data, and peripherals over a network.

Software developed by the OSF targets three general areas: portability, interoperability among different vendors' systems, and scalability (the capacity to host the same software environment on a broad range of hardware platforms, from desktop devices to supercomputers).

"Our members are heavily involved in both operations and development," says Donna Ruane, OSF's manager of press relations. With 165 members, this signifies a relatively open procedure; and indeed, members enjoy early access to technologies under development, as well as the availability of OSF specifications and code. These privileges of membership are not free, however. Companies like Data General pay $25,000 to enjoy the openness of OSF, while not-for-profit organizations pay $5,000 and university departments pay a mere $2,000.

Ten percent of OSF's $130 million-plus budget supports its Research Institute in Cambridge, and a branch location in Grenoble, France. According to Ruane, the purpose of the research institutes is "to track candidate technologies that could be used in future OSF offerings." Once these potential projects are identified, the institute works to "accelerate the maturity of these technologies for commercialization—for example, funding different projects, and that sort of thing," Ruane says. It is this emphasis on software development and commercial applications that distinguishes the OSF from an advisory organization like Unix International.

Ruane characterizes the OSF as "vendor-neutral," though Data General's Don Lewine points out that the organization came about as a result of IBM's and Hewlett Packard's mutual rivalry with AT&T. Lewine, DG's director of engineering, explains that "back in about 87, [AT&T] decided that they were going to get very aggressive with their marketing of Unix . . . . So IBM and HP went off and formed the Open Software Foundation, with the idea of producing . . . a vendor neutral flavor of Unix, because at the time AT&T was saying they were going to make optimizations in Unix which would cause AT&T to have an advantage."

In the past two years, the drama has cooled somewhat. In an April interview, Lewine remarked that "OSF is going to make sure that they support all AT&T applications, and AT&T is going to make sure they support all OSF applications. It's going to get down to customer preference. . . ." Ruane confirms this view, and in distinguishing her organization from the AT&T-based Unix International, explains that beyond vendor-neutrality, the OSF is essentially concerned with software development, while Unix International serves primarily an advisory role. After the European Commission's advocacy of OSF/Motif, AT&T's Unix Software Operation (USO) was quick to point out that its Unix System V is Motif-compliant, and as such, remains an option when the EC finally chooses its Unix operating system.

Ruane also pointed to a number of areas, such as a multiprocessor work group, in which the OSF works with both Unix International and AT&T's USO. OSF's espousal of Posix and X/Open specifications is another example Ruane gives of cooperation with Unix International. "We're trying to rally around the same standards," she says, "so that there is compatibility among the different operating systems in the industry." Δ

Unix
(continued from page 14)

at Data General are informed about any particular Unix direction, and similarly, make sure that Unix International understands Data General's position on a particular topic," Lewine said. ". . . we've been a very active reviewer . . . making sure that the Data General users have all of their needs met, and that we are able to take everything we've got, and compatibly carry it forward."

The creation of opposing Unix groups came about as a type of "historical accident," says Lewine. When AT&T began to aggressively market its own brand of Unix, other organizations like Hewlett Packard and IBM formed the Open Software Foundation to produce a vendor-neutral flavor of the operating system. In the wake of OSF's acceptance as a legitimate contender in the Unix arena, AT&T decided to form Unix International.

"Unix International basically is a way that all of the people who are licensees of AT&T can not only influence the next revision of it, but can make sure that they have enough early and equal access to it to develop tests. If AT&T had, back in 1987, taken the same stance that they took in '88 with Unix International, then the whole OSF thing wouldn't have happened," said Lewine. "Of course, once launched, these things are very hard to stop. And so OSF, which now has 100-plus employees and money and products, will probably continue for years and years as a software company." Δ

OMG
(continued from page 15)

The OMG, founded in April of 1988 with a core of 10 organizations, has increased its membership to 45 organizations committed to industry-wide adoption of the object management approach. Fees for corporate members range from $5,000 to $50,000, depending on the size of the company. In addition, representatives from the Open Software Foundation (not a member) have attended OMG meetings to ensure that responses to its Requests for Technology in object orientation will conform to standards set by the OMG. Stone is also courting Japanese firms such as Hitachi, Sony and Fujitsu in an effort to expand the influence of his organization. Δ

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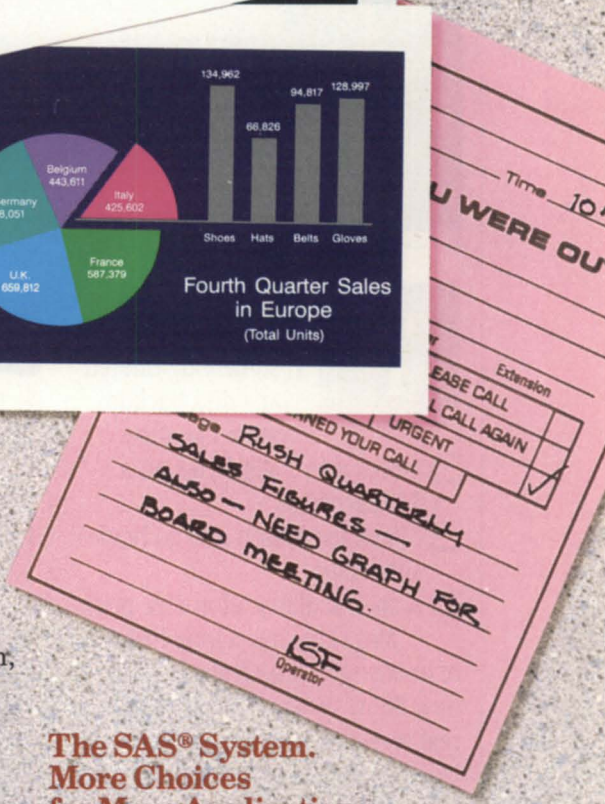

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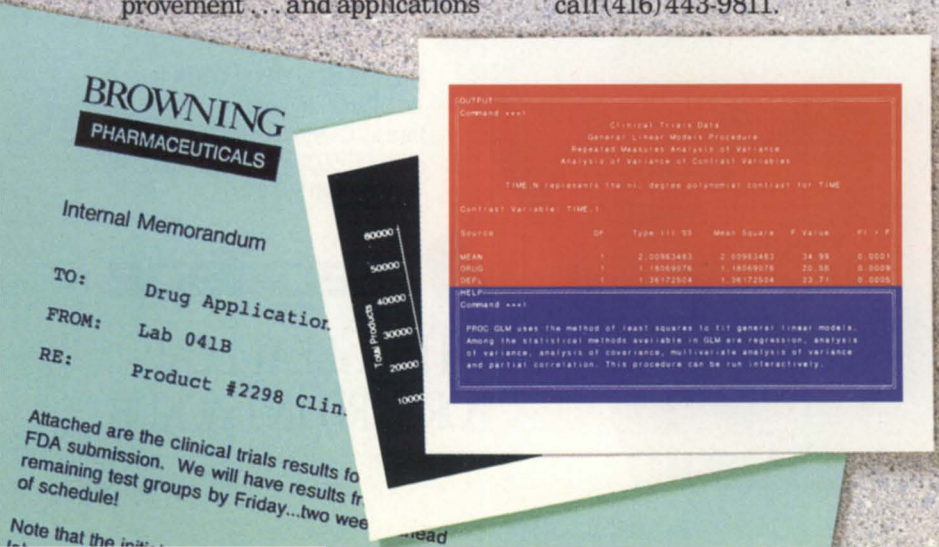
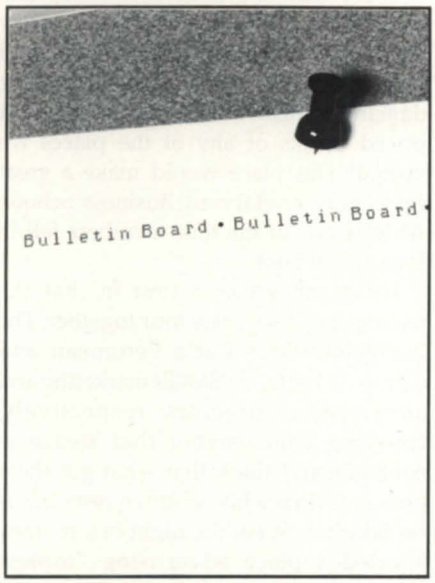


Bits and bytes from the bulletin board



Request for a disk jockey
From: Kevin Danzig

This is probably simple. We have been getting soft disk errors on a system disk for the past few days, and they have been increasing in frequency. They are always in the same spot. I would like to map them out, but need to know what file I will be killing. How do you find out, based on a cyl, head, sector address? I have cyl=33, head=5, sector=002. Same error codes: DIC=140001, CB=000001. Any disk experts out there?

From: John Meyer

The formula for computing the number of "blocks" a given drive "contains" is heads x cylinders x sectors. You could figure it out from that. If it's an Argus-type drive use the formatter program to extract the data, flag the bad sector, and reassign it. I have done this several times without a hitch. Lastly, a FIXUP will tell you if you flag the bad sector using DFMTR and then run FIXUP using a verbosity of three. (Having a good backup on hand goes without saying.)

Make a systape before you remap the block and remap it if you need to. The utility that the FEs use is called PMI (it's menu-driven and easy to use). It's the same one that checks and installs the Argus microcode. If this is on an MV with RAC, DG may just fix it for you via RAC modem from the support center.

From: Doug Rady

Run report on :error_log with the /DX/DE switches and you should get more complete information on the errors. Be warned that this also reports tape errors, which can be numerous. It's best to send the output to a file and then look at it with an editor.

Looking for the boffins
From: Andries Holtzhausen

We are running AOS/VS 7.64 on an MV/20000 mod II (among others) with an Argus 6236 controller and four 354 MB disks. The first of these is my system disk. I also have a 6239 controller with two 354 MB disks and a RAMS system.

My problem is this: If I have more than 40 percent of the system disk in use, the performance of the whole system drops noticeably—this means 40 percent of the space, not 40 percent access time. The agents are offering me a new and separate controller as the answer to my problems. I accept that this would solve the problem, but is there something else that I could look at first? It sounds strange that a self-respecting computer company would produce a machine on which you can only use a third of its master disk. We run CEO, Document Exchange, and a lot of process control stuff, mainly written in C or F77. Where are the boffins?

From: Doug Rady

1. The Argus drives are *very* slow!

2. The throughput on an Argus controller starts dropping off at a good rate once you get beyond two drives.

3. If CEO, Document Exchange, and what all are coming off the system disk and your :PAGE and :SWAP are on the same disk, then you are creating problems. VS demands fairly constant access to the system disk when you have any kind of load, especially if paging is going on.

4. The controller isn't any speed demon, either. If you have lots of small size writes happening on several disks "at the same time," then this will also slow you down. Even lots of large size writes can have this effect.

Take the controller and put at least the system disk on it. You should be able to put a second drive on the controller without much problem.

From: Tim Boyer

I'm using BJ's suggestion. Get a small, cheap disk with a separate controller for the system disk (e.g., tiny Kismet). Put the system and *only* the system on it. This does wonders for your response time.

BBasic division: simply nasty
From: Joe Wesner

Does anyone know how to divide in Business Basic with regards to getting a remainder? My main concern is dividing and getting decimal points.

From: Brian Dore'

If you need to divide two numbers in Bbasic and get a remainder, it's pretty simple and pretty nasty. Multiply your numerator by the power of 10 that will yield the number of decimal places you need. Using 1/4 = 0.25 as an example: multiply one times 100 because you need two decimal places (10 squared). Then do your division and print the result with PRINT using "whatever" that will put your decimal in the right place. Remember that variables only contain whole numbers, so your variable will actually equal 25. *You* must remember where the decimal place goes for each variable. Have fun.

The sad truth about CEO 3.11
From: Jeff Campbell

I was just told by my SE that CEO 3.11 was released with some major filing system errors. They stopped distribution of it.

From: Doug Kaye

There are two patches for CEO 3.11 which *must* be applied. It's serious enough that you can get them from any DG SE. Δ

You got it!

SYNOPSIS

New Orleans yielded good food, bad sleaze, and surprising receptivity from Data General.

:MODEMS

The column on hooking up high speed compressing modems that I've been trying to emit for six months is back on the topic spike and will probably stay there for a few more months due to the flood of material from the NADGUG conference, topics related to AOS/VS II 1.20, and the other new products hitting the streets.

:NADGUG:CONFERENCE 89

If you missed this year's conference, then I've got a little bit of bad news and a lot of good news.

The bad news is that Sleaze Tour '89 was sad. In fact, sad is the perfect word to describe it. Nawlins has no shortage of sleazy places down on Bourbon Street, but they're all heavy on promises with little delivery. Every one of them touts "topless & bottomless" and has photos plastered all over the outside showing stuff that would make Al Goldstein blush.

:SLEAZE_TOUR.II

Yo ladies! Equal opportunity finally arrived at Conference '89. The first annual Sleaze Tour for Women took place in the French Quarter with five hardy women participating. The sleazatoriums were found lacking in talent, compared to the photos displayed outside, but there was a definite element of sleaze.

I'm not allowed to go into too much detail regarding the "entertainment," but I can say that a good time was had by all, and the women's tour even outlasted the men's. Although a lot more than five women said that they planned to join us, the five women who made up the group were real women; not girls who say yes and mean no.

Let's hope during the next year more girls will grow up to become women and join us on the second annual Sleaze Tour II in Seattle. See ya there.

— Carla Perumean

Inside, it's a different story. I've seen more skin at the beach, and better dancing skills at the Tiny Tots Preschool. Someone told me that the Nawlins City Fathers actually passed an ordinance redefining the terms "topless" and "bottomless" to include pasties and G-strings so that the bars could legally advertise what they obviously weren't delivering.

There was one noticeable exception, though. The place was big, clean, nicely decorated, had the most customers, and was staffed by women with amazing dancing skills. And it had the lowest priced drinks of any of the places we visited! This place would make a great case study at Harvard Business School. At least one of the tour members fell in love at that joint.

This year marks a first in that the females put a separate tour together. The instigators were Carla Perumean and Corinne Martin, :SYSMGR marketing and advertising directors respectively, (proving conclusively that sleaze is contagious). I think that what got them going was that while scouting restaurants on Bourbon Street the night before, they spotted a place advertising "topless /bottomless women & men." The report from Carla, the tour leader is on this page.

:GOOD_NEWS

The first piece of good news regarding Conference '89 is that Nawlins has the best food on the planet as far as I'm concerned. Somehow, I missed Louisiana in all my previous travels, and now I'm sorry that I stumbled across it so late in my gastronomic career. The crawfish etouffee omelette for breakfast at Mother's (on Poydras, a few blocks from the Hilton) was orgasmic. And the side orders of homemade biscuits with debris and black ham weren't bad either. At lunchtime they make a mean Po boy called a "Ferdi." And a little place called the Cajun Cabin on Bourbon Street served up the best Cochon du Lait with sweet potato pudding and black eyed beans that I've ever had. For appetizers we had some Cajun Popcorn and fried frog legs the size of turkey drumsticks. The Cajun band didn't hurt either.

One of the problems I've always had since moving to San Francisco from Chicago 18 years ago is finding decent food to eat. I'm basically a meat and potatoes creature. My favorite vegetables

are potatoes, carrots, and peas, preferably canned. What was really refreshing in Nawlins was finding that the restaurant menus didn't even list salads as an option. And the plates came piled with steaming mounds of food instead of the morsel in a puddle stuff that's become so common in California restaurants.

During the NADGUG welcome reception on the first night of the conference, I went out to sit at a table in the foyer and have a cigarette. I was joined shortly by a local DG user who asked me where I was from and we started talking about Frisco vs. Nawlins. He said, "San Francisco is my favorite city to visit, but I just can't seem to find anything to eat there." Amen.

OK, back to earth. The rest of the good news has to do with computer stuff.

This year's conference theme should have been the title of the late Roy Orbison's recent hit, "You Got it." DG has suddenly turned around on a bunch of things that we've all been requesting for as long as I can remember. Here are some examples.

You want a 32 bit CLI on both AOS/VS and AOS/VS II? You got it. At no charge? You got it. In fact, DG sent me an alpha copy and it arrived two days ago. I changed the initial program in my profile to :CLI32.PR and it's been smooth sailing ever since. I haven't begun to push all the new buttons and take it for a high-speed cruise, but you can bet that a future column will cover the features and the costs.

You want to be able to create files on AOS/VS with any element size (e.g., 1, so that all those little macro files don't take up four blocks), just like on AOS/VS II? You got it. (Estimated to be available in AOS/VS 7.67, but in the meantime see the patch in my Apr. '88 column or on the :SYSMGR BBS if you can't wait).

You want to be able to suppress TLA during backups under AOS/VS just like you can under AOS/VS II? You got it.

You want to be able to log selected items in SYSLOG, instead of having to choose between all or nothing? You got it.

You say that you're tired of having to apply BJ's RUNLC1 patch (Oct. '87 or on the :SYSMGR BBS) each time you VSGEN in order to speed up disk I/O? No problem; we'll change the AOS/VS source so that the patch is unnecessary.

You say that you're tired of your users not getting charged for system call CPU time, and also tired of programs that do excessive system calls disrupting other users? OK, we'll fix it.

Mind boggling, eh? If this keeps up I may not have anything to bitch about in future columns.

A lot of the credit for these changes goes to Larry McCoskery, who took over AOS/VS maintenance when AOS/VS II hit the streets. Somebody forgot to tell Larry that you're not supposed to make improvements in AOS/VS, even if they only involve a few lines of source code and have minimal risk. Larry doesn't call them "improvements," he calls them "closed STRs." Here's hoping that Larry stays immune from the Peter Principle for as long as possible.

:DISK_DATA_CACHING

DG announced disk data element caching for AOS/VS II as part of one of the seminars at the conference and volunteered to send me a copy of AOS /VS II 1.20 to test it. I just installed it and all I can say at this point is "Wow!" A 1 MB cache on a lightly used MV/4000 (mostly batch work) resulted in a 47 percent reduction in disk I/O on a five-drive system. Stay tuned for more on this dandy new feature in a future column.

From the cursory analysis I've performed so far, this particular carrot may be the one that finally breaks the log jam of AOS/VS users looking for an excuse to move to AOS/VS II.

:CONTESTS

BJ Inc./:SYSMGR awarded two trophies at this year's conference. The UPDATE.CLI Memorial Trophy (a brass pig on a base with plaque) was awarded to David Arnold of Strong/Corneliuson Capital Management in Menomonee Falls, Wisconsin. Dave submitted the listing of a two-line subroutine (one line if you don't count the RETURN statement!). The story about how it got removed will provide a useful lesson for all of us.

Dave was showing somebody how DG's WATCH tool worked, and picked a production program to use it on. Lo and behold, WATCH showed a huge stalactite whose position corresponded to a one-line subroutine used to clear data records by blank filling them before writing the record. Here's the one line: "REC >REC_PTR = ' ';." This single line

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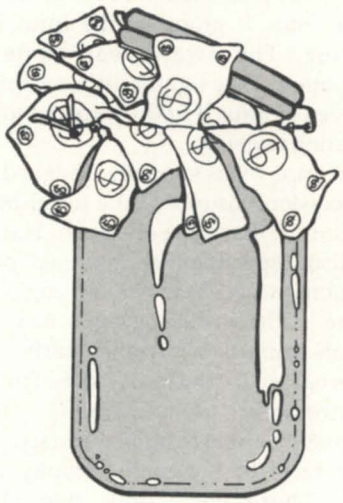

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compiled into a single WCMV instruction that accounted for 80 percent of the program's CPU time consumption. Removing redundant and superfluous calls to the subroutine improved the program's performance considerably.

The 1st Annual Software Tuning Award trophy was presented to a representative of the Infos II group at the Infos SIG meeting. The award was made in recognition of the significant acceleration achieved in Infos II 5.00, compared to the preceding revision.

The trophy was specially designed for the occasion; instead of the usual brass doodad, it has a well-worn Harley Davidson speedometer mounted on a traditional wood base with an engraved plaque. Perhaps other groups will win enough trophies with other parts over the years so that DG's Software Development Departments will eventually be able to build a Harley.

The race for the tuning trophy was close. There were only two clear contenders: Infos II 5.00 and the new XLPT. The new XLPT was also a significant leap forward in performance and capability, especially for the increasingly common situation of systems with multiple printers. I really had a lot of trouble deciding between the two products; even to the extent of considering declaring it a tie and getting a second trophy made up. But eventually I wimped out and made the decision based purely on impact; on most non CEO systems the amount of CPU saved in an average day by Infos II 5.00 significantly exceeds that saved by the new XLPT.

:SM_PANEL

I chaired the System Manager's Panel again this year, and as usual I promised to write up my notes on the discussion.

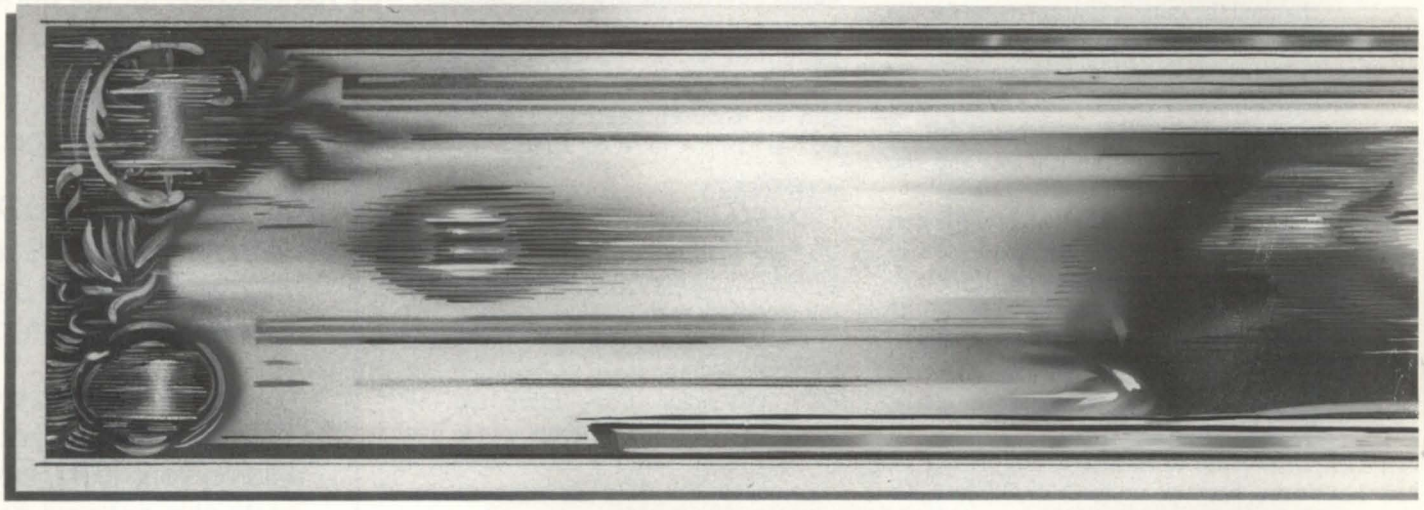
But before I get into the details, let me reiterate my thanks to the DG panelists who came to soak up some good real-time customer input, and to Ed Charbonnet of Automark Systems, who acted as the token customer panel member and provided useful insights on a couple of problems.

1. Open STRs are no longer reported in the monthly newsletter. Yep, DG indicated that they would look into this problem, but also pointed out that OIS is probably the best source for information on open STRs. DG also took this opportunity to announce that significant changes are being made to AOS/VS documentation to make it easier to use. Changes will be similar to those done for AOS/VS II documentation. There will also be a separate manual for error messages (applause occurred here).

2. A user asked how many people were using the newly introduced VT100 support. Only a handful of users indicated that they were using it, but they generally indicated that it worked OK.

3. A user complained that Atlanta was stingy in giving out patches, instead of simply supplying the entire current set. It was again pointed out by DG that the entire set could be obtained from OIS, but there was some indication that OIS doesn't seem to be kept up to date in a

THE ULTIMATE OBJECTIVE:



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timely fashion. DG acknowledged the problem and indicated that a major reimplementation of OIS on DG hardware is in the works that will make it easier to keep OIS absolutely up to date.

4. LOAD_II/DUMP_II, the perennial whipping boys, came in for another round of complaints. A significant number of users indicated that the quirk/bug level for this product is still too high.

5. More OIS discussion. DG indicated that there are less than 50 OIS users per month and wondered why. At this point, the poop hit the air conditioner when a significant number of users indicated that they had requested OIS packages and never received a response. DG promised to investigate. I'd urge anyone who had this problem to try again ASAP.

6. Yet another request for page replacements instead of corrections that have to be transcribed manually (applause!), and another indication from DG that they're trying, but that there are some technical problems trying to get typesetting software to convert beautifully formatted pages into text files that can be printed on an LPB.

7. Several users reported problems logging onto OIS at 2400 baud. The general consensus was that 2400 baud works fine in big cities, and less reliably in the boondocks.

8. The usual ridiculing of the CPU time consumption and quirks inherent in the UPDATE.CLI macro was made again, with the usual nonresponse from its author. Maybe after a few more UPDATE.CLI trophies are awarded we'll get some action on a programmed replacement for an incredibly bad collection of macros.

9. A user asked if anyone else was interested in a more sophisticated tape management system than DG's TMS product. There was little interest.

10. Some problems were cited with REPORT and a few other utilities (like FILCOM) that seem to go bonkers when reporting 16 bit octal numbers whose high order bit is set (I think a lot of this was fixed in 7.65). DG noted the request.

11. Some problems with 20/20 (the third-party spreadsheet package) being very disruptive to other users were noted. This may be related to the system call mischarging problem.

12. A request was made to impose some growth restrictions on :UTIL. DG responded positively and noted that a lot of unnecessary stuff is now put in subdirectories under :UTIL so that it can be easily deleted. Also, new revs will include lists of unnecessary/obsolete files that can be deleted to recover space (the AOS/VS II 1.20 I just received has these lists).

13. A request was made to have : and :PER removed from the default system searchlist to avoid unnecessary overhead. Amen.

14. Some kudos were offered for DUMP_II/MAXCAPACITY, but also some complaints were heard that DUMP_II is too CPU- and disk-intensive.

15. A request was made for selective SYSLOGing. As noted above, DG said "You got it."

16. Someone expressed an interest in

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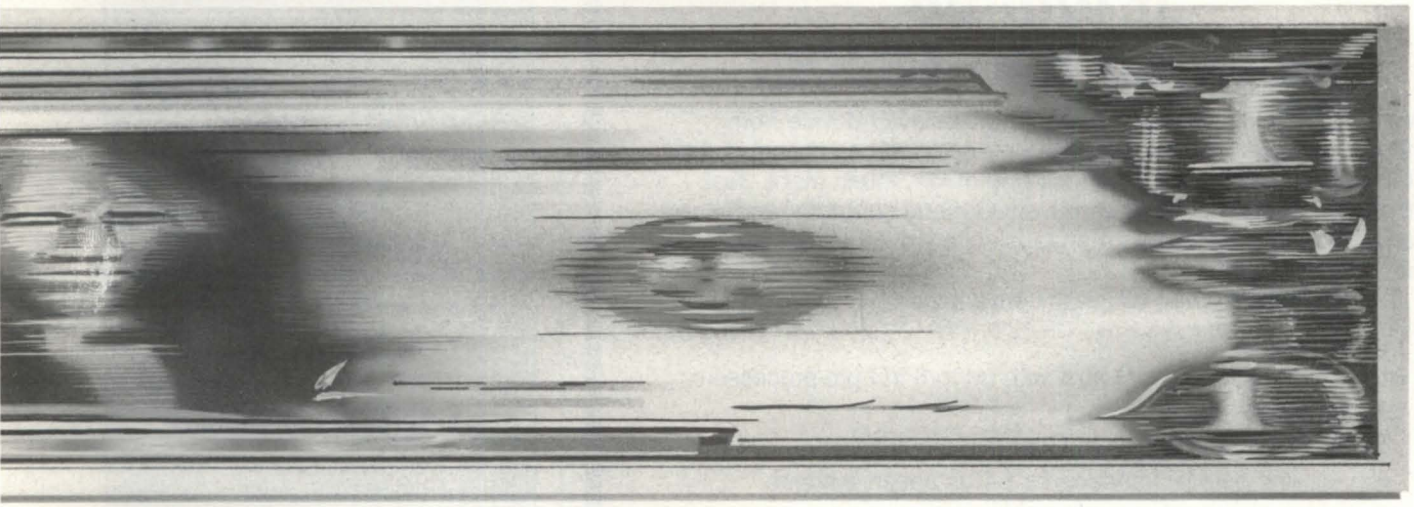

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updating RJE80 to current standards in terms of user interface. The current product was originally developed for RDOS and ported more or less intact to AOS, and then to AOS/VS. It's probably the best example of early seventies vintage user unfriendliness that I've seen; it has a tacky sysgen procedure and a clumsy command structure. To everyone's surprise, especially DG's, a show of hands indicated that over half the attendees are using RJE80, including yours truly. Since the conference, my spys have indicated that DG is actively pursuing RFE specifics from RJE80 users. If you want to get in on this, address your requests to Brian Scoggins at the Software Support Center in Norcross, Georgia.

17. A request was made for a configuration file editor as an adjunct to

Figure 1: A comparison of MV/4000 system call times. (All times are in milliseconds.)

System Call	VS I 7.65	VS II 1.00	VSII 1.20
TMSG	.059	.350	.122
KWAIT	.090	.370	.117
INTWT	.096	.370	.145
GSHPT	.112	.390	.171
LOGEV	.116	.640	.273
SUPRO	.139	.420	.224
ITIME	.139	.420	.204
GTOD	.143	.430	.211
SINFO	.143	.380	.208
MEM	.149	.590	.213
DVSTT	.151	.460	.219
SYSPR	.158	.430	.388
SUSER	.174	.520	.371
VALAD	.182	.460	.401
OPREC	.200	.480	.255
VCUST	.270	.540	.333
DADID	.272	.550	.360
GDAY	.274	.420	.204
WDELA	.299	.560	.350
SGNL	.326	.700	.500
PIDS	.387	.670	.472
UNWIR	.428	.630	.557
RUNTM	.429	.710	.562
DCON	.431	.670	.445
PNAME	.486	.860	.559
CON	.548	.840	.647
TABT	.552	.590	.403
IREC	.563	1.131	1.051
MEMI	.680	.950	.883
RPAGE	.736	.980	.758
PMTPF	.743	.850	.661
XPSTA	.758	1.150	.948
FUNLO	.934	1.350	1.107
KHIST	1.370	1.620	1.448
MBFU	1.491	1.830	1.695
PSTAT	1.508	1.780	1.574
MBFC	1.803	2.320	2.124
MBTC	1.807	2.410	2.120
GPID	1.970	2.000	1.800
FLOCK	2.021	1.510	1.361
IS.R	2.671	3.400	3.010
ISEND	2.917	3.660	3.335
MPHIS	3.026	3.230	3.001
OPRS	3.606	3.880	3.597
OPSEN	4.100	4.470	4.349
SSHPT	6.403	4.810	4.341
GLIST	33.643	6.830	5.356

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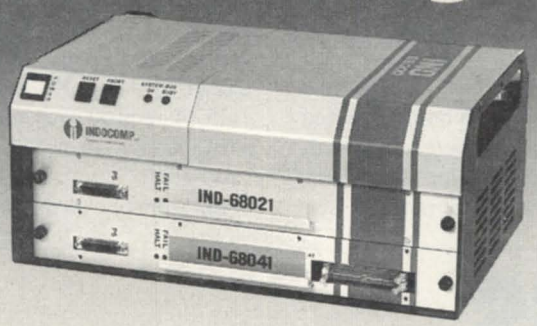

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NETGEN for the network software products. DG acknowledged that this request was reasonable, probably because maintaining its own huge network is such a chore. As a result, we may see some action on this.

18. Lots of requests for MV-to-MV server support. It seems that the current situation in the standards-based networking world is that the only system that can't be a server to an MV is another MV. Strange, but true. And obviously under some scrutiny by DG.

:UPDATE:AT_WHAT_COST?

In September and October I published some comparative system call timings for AOS/VS vs. AOS/VS II that showed that AOS/VS II system calls took significantly more CPU time than the corresponding AOS/VS calls.

Since the first column was published, I've reviewed the figures with DG several times and they have pointed out the following:

The initial rev of AOS/VS II (1.00) that I used to perform the tests had significant general overhead in system call processing that was reduced somewhat in revs 1.11 and 1.12, and significantly reduced in rev 1.20. To demonstrate this, DG has kindly shipped me a trial copy of 1.20 to rerun the tests. The new figures are shown in Figure 1, and the results are gratifying.

The timings for disk-related system calls on AOS/VS II will never be as low as those on AOS/VS for two reasons: AOS/VS II does a much better job of charging CPU activity by the file system to the system call that caused the activity (hooray), and the overhead of the New File System will get streamlined, but will never go away completely due to both high level language coding and the extra physical I/Os necessary to achieve a fixupless file structure. As a result, I have eliminated all disk-related system calls from the comparison shown in Figure 1.

Improvements to AOS/VS II disk I/O are on the way on several fronts; disk data caching will, in many cases, reduce overall physical I/O to levels below those of AOS/VS, in spite of the net increase in system I/O, and some work is underway to identify and eliminate some unnecessary system I/O. A good example of unnecessary system I/O is the activity identified in my September column with respect to DELETEing entire directories.

I'd like to take some credit for all of this, but I'm afraid the truth is that I just stumbled across some short-term inefficiencies that had already been spotted and were under scrutiny by the AOS/VS II developers. Oh well. Δ

BJ is the President of B.J. Inc., a San Francisco based consultancy specializing in system auditing, system management, and performance analysis. :SYSMGR is a division of B.J. Inc. BJ can be reached at 109 Minna St., Suite 215, San Francisco, CA 94105, 415/550-1444. The :SYSMGR bulletin board number is 415/391-6531 (300/1200/2400 with optional MNP class 4, CHAR/605X/CHARLEN=8/PARITY=NONE/AUTO-BAUD) or 415/550-1454 (voice).

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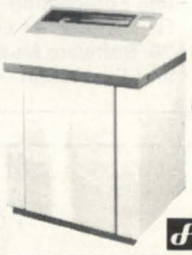

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1. Keynote Address—Patricia Seybold, President and CEO, The Office Computing Group

Technical sessions

3. Generic Peripheral Cache Systems—Clyde Sparks/Delphi Data

4. Industry-Standard Benchmark for an Industry-Standard World: Comparing Performance of Unix Systems—Tom Morgan/Data General

5. A Survey of File and Document Compression Utilities of AOS and AOS/VS—Brian Johnson/B.J., Inc.

6. 3-Dimension Performance Solutions—Allen Hopper/Data General

7. Porting to DG/UX—Donna Boyce/Data General

8. X.25 and Data General—Robert Machlin/AMNET, Inc.

9. Writing Portable C Code—Diane Olson

10. Implementing X.400 in Multi-Organizational Networks—Miles Morimoto /Telenet

11. CLI32—Douglas Bilton /Data General

12. Systems Analysis Prerequisites for CASE—Michael Grottola/Vantage Software

13. DG/UX Rev 4 Performance Monitoring and Tuning—Walter Fraser/Data General

14. Comparative Network Performance X.25 vs OSI vs TCP /IP—Scott Hinckley/Data General

15. Operational Database in the Centralized Forecast System—John Huddleston/USDA Soil Conservation Service

16. CEO Light, A Technical Comparison with CEO—Casey Sayre/Data General

17. Text Searches under AOS /VS—Tom Bishop/Concept Automation

18. Mini-to-Mini Transfer Using the SOFTRAN Protocol—Thomas Doyle/Fremont Water Conservation District

19. Programming with the CEO Toolkit—Russell Cordner /Concept Automation

20. X Windows and Graphics on the 88000—Durward Rogers/Data General

21. Using the MRC under AOS/VS—Philip Schwartz and Mark Wilding/Data General

22. Troubleshooting and Monitoring Extended Heterogeneous Local Area Networks: An OIS-Based Strategy—Gerard Puoplo and Geoffrey Mamlet/Data General

23. Relational Directions for Data General—John Farnsworth/Data General

24. Solving Applications Performance Problems—Four Steps in Tuning an Applications System—Andy Wilkes /Data General

25. ICobol 1.50: An Ambitious Step Forward—Gerry Manning /Gerry Manning Associates

27. Bridging AOS/VS and DG /UX—Thomas McMillan and Ivan Liss/Radford University, and Lawrence Laramay/Data General

28. ICobol: Increased Markets and Profitability—Bruce Ray and Linda Vendryes/Wild Hare

Management sessions

29. Developing an Access Security System for AOS/VS Installation—Peter Walsall/Data-Lynx

30. DG/INGRESS Phase II—Kathleen Springer/Data General

31. System Administration in a Diskless Environment—Stephen Stukenborg/Data General

32. Worms, Viruses, and Time Bombs: Coping with Current Trends in Computer Hacking—Tom Gutnick/Data General.

33. Disaster in the Nineties—Stewart Peretz and Joe Cannata

34. Software Development Contracts: Cutting up the Copyright Pie—John Land /Spensley, Horn, Jubas, and Lubitz

35. Case Study: Two Years of Performance Monitoring/Usage Forecasting—Kenneth Ramme/Rochester Gas Electric

36. Software Measurement and Evaluation—David Kephart/Illinois State University

37. Data General's High Availability Strategy—John Morrell/Data General

38. If Artificial Intelligence is the Answer, What is the Question?—Yehudah Freundlich /Data General

39. What's New in PC Integration—Douglas Kaye and Peter Wiggins/Rational Data Systems

End user sessions

41. Unleash the Power of the Workstation—Chris Zannetos /Data General

42. Desktop Publishing on the PC and MV—Guy Pribyl and Tracy Power/Wordperfect

43. Training Using In-House Staff—Carl Switzer and Gail Crawford/Northern Illinois University

44. IBM SNA Communications on DG/UX—Bruce Stovall/Data General

46. Data base Publishing—Soto Flouris/Intercon Associates

48. Advanced User Interface and Office Systems—Bruce Evans/Data General

49. Using Wordperfect with CEO—Guy Pribyl and Tracy Powell/Wordperfect

50. A SAS Based Information Subsystem—Richard Soj

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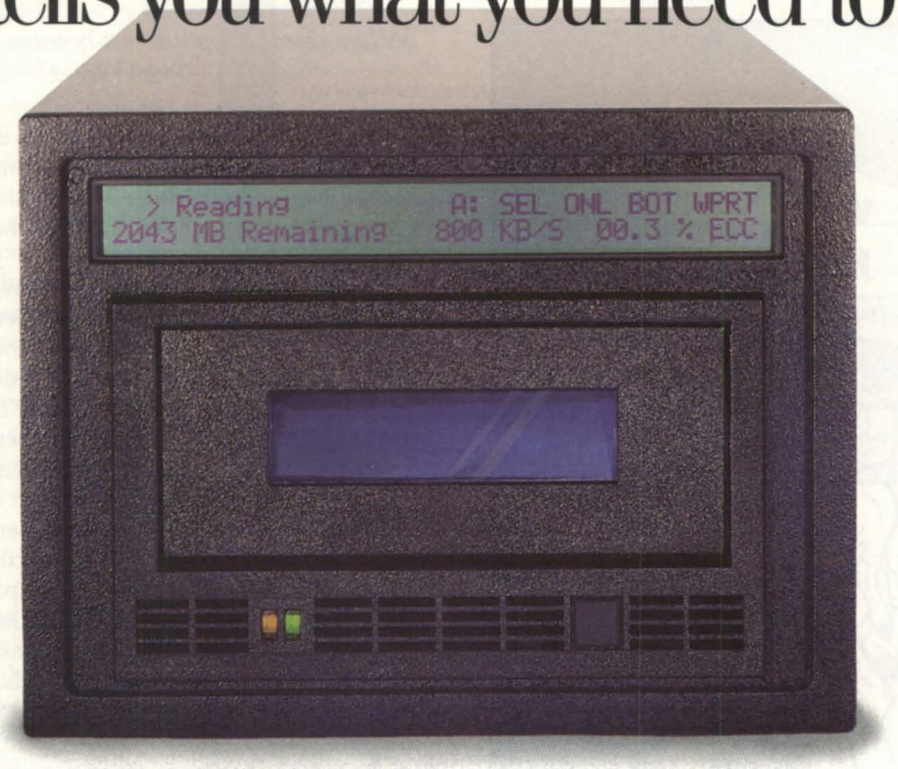

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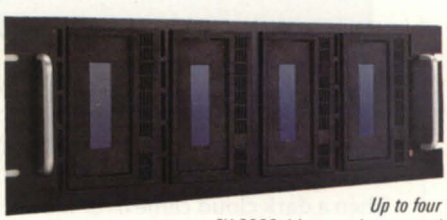

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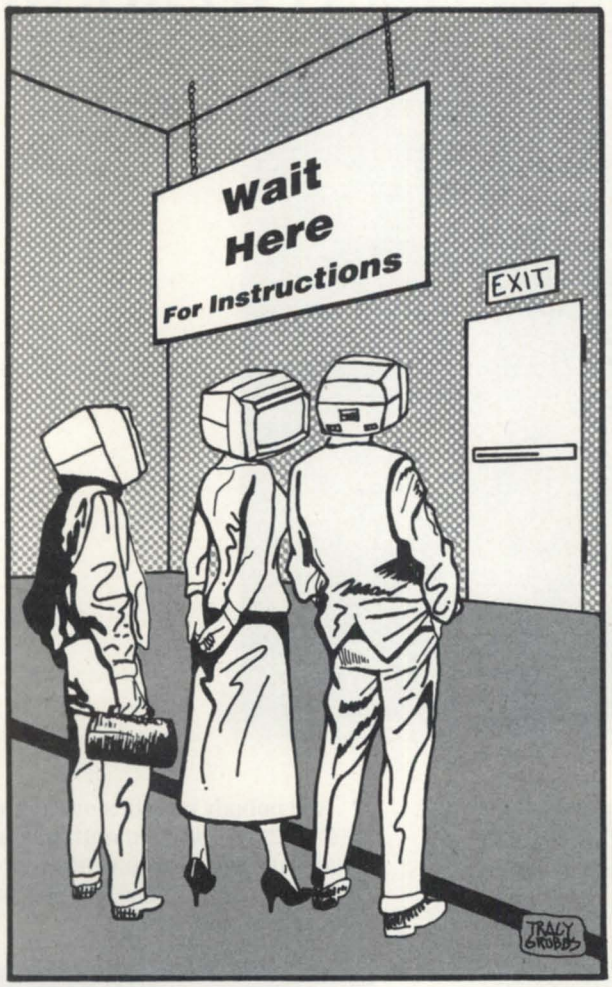
Wait here for instructions

SYNOPSIS

When certain applications became too time-consuming, special purpose instruction sets were invented.



In the beginning, there was the Nova instruction set. People bought computers, wrote real-time programs, and all was well. More people wanted to buy faster computers, so Data General's Nova begat the Eclipse instruction set. And all was well.

Then a dark cloud came over the industry, raining pleas for 32 bits. Thus, the Eclipse MV family instruction set was developed, which came in time to disperse the clouds, and satisfied the masses of users throughout the lands. A quiet peace existed for many nanoseconds, and all was well. (Until the people said "Enough! You have done well, but you are besieging us with too many instructions." And so RISC was born, but that is another story.)

Understanding the instruction set

From the opener, you can see that there are several classes of instruction sets, and from history and advertising, you have learned that Data General instruction sets are "upwardly compatible." This month's questions are: what are instructions? what are sets? what do they mean? how do they work? can I have one? etc. To help resolve the confusion of the funny mnemonics (and to set the groundwork for future articles), I decided to journey through memory lane and discuss the meaning of some of the sign posts.

In the years B.C. (before computers), work was done regarding number theory, logic, and number systems. This work was of great value when it came time to think about how to design a computer, or at least, what was needed to get one to do some useful work. It was discovered, for instance, that a computer needed to be able to add two numbers, halve them, shift them right and/or left, set them, clear them, get their complements, and admire them from afar.

Because the people of the time were doing things "the hard way" (writing programs with pencils, compiling the instructions by hand into the proper bit patterns, and toggling the instructions directly into memory), they were not too interested in long forms for the names for the instructions. This resulted in mnemonics such as COM, ADC, NEG, JMP, LDA, etc., for COMplement, ADd the Complement, NEGate, JuMP, and LoaD Accumulator.

By today's standards, these instructions are simple, and most computers had relatively similar instruction sets (the mnemonics were changed to protect the innocent and the guilty). When certain applications found that doing things the "normal" way was too time consuming, special purpose instructions were developed, such as the Extended Instruction Set (EIS), Commercial Instruction Set (CIS), and of more recent fame, Floating Point Instructions, and the Graphics Instruction Set.

In the good old days, you could order a Nova or Eclipse computer with the instruction sets of your choice, and even had the opportunity to develop the microcode for your very own instructions. The purpose behind all of these instruction sets was to reduce the number of instructions required to perform various functions. Without a floating point instruction set, manipulating floating point numbers required a large number of integer operations. Commercial instructions were added to allow for increased packaging density of decimal numbers (for Cobol programmers).

The original Nova instruction set consisted, for the most part, of single 16 bit words. This distinction implies that the addressing range was a little restricted compared to today's standard, but when the average computer had 16 K bytes of total memory, it was not much of a problem. When the need to address greater ranges increased, the EIS came to be. To obtain upward compatibility (so that newer processors could run all of the older code), the instruction set was increased. This increase resulted in new mnemonics, most of which involved prefixing the old ones with

the letter E. (Creating new instructions like EJSR from JSR (Jump to SubRoutine) resulted in an addressing range increase from 8 to 15 bits. For now, let us ignore indexed and indirect addressing.)

When the world was reshaped into 32 bits, something had to be done so that 16 bit values could co-exist with 32 bit ones. The solution was to add even more prefixes to instructions to specify a type of data. W is used to refer to "wide" 32 bit values, while the N refers to the "narrow" 16 bit values. By the same token, X adds addressing capabilities beyond previous ranges, and L makes the addressing range even longer.

For the purists, I should add that E and X both have 15 bit displacements, but E is confined to an effective address within the first 64 K, while X is confined to an effective address within the current segment (ring). L's effective address range is 4 G. If you are still confused, I recommend that you refer to the "principles of operation" and "functional characteristics" manuals for your computer. You might also want to look at the instruction set dictionary for the encyclopedic definitions of the instructions.

Having answered this month's questions, and having laid the ground-work for next month's article, all that is left to add this month is that a previously undocumented instruction was discovered, and it has been found that a few programs are achieving incredible results by using it. The repercussions have already been felt in the realms of game theory, consultants' billing hours, and STRs. It appears that the new instruction was either developed by people working on software copy protection, or games writers looking for better random number generators. The instruction is used to modify random addresses, where the new value is the result of a polynomial that begins at the location described by the value of the immediate portion of the instruction. An example of the use of the eXtended Modify Address Somewhere is: XMAS 1989. Δ

Michael Dupras is senior consultant for the Software Products and Services Division of DG Canada. He may be reached at Data General, 1827 Woodward Dr., Ottawa, Ontario, Canada K2C 0P9.

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Forget kindergarten

SYNOPSIS

Wordperfect Notebook actively encourages "cheating."

by Kent Finkle
Special to Focus

You may have had the experience of hearing a teacher tell students to keep their eyes on their own papers. "Don't look at anyone else's notebook," we were told. "Do your own work." But to get a quick start with Wordperfect Office, copying notebooks is far from forbidden. It's actively encouraged.

Wordperfect's Notebook comes with the new Wordperfect Office, an assortment of programs superseding the old Wordperfect Library.

Wordperfect's Notebook program is a "text-oriented, flat file" data base. This means that it focuses on the storage and retrieval of words rather than numbers, and works with only one file at a time. If you need to do arithmetic, or require a complex scheme of links among your files, this is not the program for you.

Many applications require only text, and are simple enough to make do with one file. Here in North Andover, for example, Notebook helps the Health Department track its scrutiny of local restaurants. The Department uses Notebook to schedule inspections, record comments, and generate form letters. As you might expect, the generation of form letters by the mail merge feature is powerful, given the close family ties between Notebook and Wordperfect's popular word processor.

However, even if you know how to use Wordperfect's word processor, getting started with Notebook can be slower than learning how to use the other programs in Wordperfect Office. The reason is simple. There is more effort required to set up a Notebook application. Users often lack the time to devote to it, and as a result, the Notebook is underused.

What if there were a quick and easy solution? If we could create a Notebook application in half an hour, instead of half a day, the obstacle to Notebook would be gone. In fact, Wordperfect has given us means to a nearly "instant" notebook file, one that can be put to work in just a few minutes.

Imagine a fast-paced account manager named Stephanie Typea who wants to track information about the 150 companies she calls on, including:

Firm name
Owner's name
Address
Date of last visit
Telephone number
Date of last call
Product.

She has about an hour until her next sales call. Can she have her Notebook application ready by then? Yes, if she "cheats." Wordperfect gives us a sample Notebook application called ART.NB. She can:

1. Copy ART.NB
2. Delete all the records
3. Replace the field names with her own
4. Change the prompts to match the field names
5. Modify the List Display, and
6. Save.

Her application will be finished and ready for data input in less than 30 minutes.

Stephanie logs on and copies ART.NB, changing its name to NOTEBOOK.NB, the Notebook default file. At CLI, she types:

COPY/V NOTEBOOK.NB :WPOFFICE:WPOETC:ART.NB (NEWLINE)

The operating system responds with

:WPOFFICE:WPOETC:ART.NB

To run Notebook, she types:

Figure 1: Using the Arts Notebook provided by Wordperfect as a starting point (left), you may easily create a customized screen like the one on the right.

ARTS COUNCIL MEMBERS	
Name: NAME	Salutation: SALUTATION
Address: ADDRESS	Home Phone: HOME PHONE
	Work Phone: WORK PHONE
Birthday: BIRTHDAY	
Notes: NOTES	

CUSTOMER CONTACT LIST	
Firm: Materialists Anon	Owner: I. Want Itall
Address: 1 Trump Tower New York, NY	Phone: 555-MORE
	Last Call: 12/24
Last Visit: 12/25	Product: N/A
Notes: Members include Ivan Boesky, Leona Helmsley, and several former televangelists.	

NB(NEWLINE)

Since no other file was specified, Notebook automatically loads the file, NOTEBOOK.NB. At the top of the screen, she sees a listing of the old records from ART.NB., and at the bottom of the screen, a menu:

F2 Search; F3 Help; Shift F8 Setup; Ctrl F9 Sort; Record 1

Stephanie doesn't want the old records, so she marks all the records in the file:

(HOME)
*

When Notebook finishes marking, all the records have an asterisk next to them, and the menu at the bottom of the screen looks like this:

F2 Search; F3 Help; Shift F8 Setup; Ctrl F9 Sort; Marks 29 Record 1*

The old records are now marked for deletion. Stephanie hits:

DEL

Notebook says:

"Remove all marked records from list? (Y/N) N"

Stephanie confirms: "Y" and Notebook deletes the old records.

To modify the record display screen:

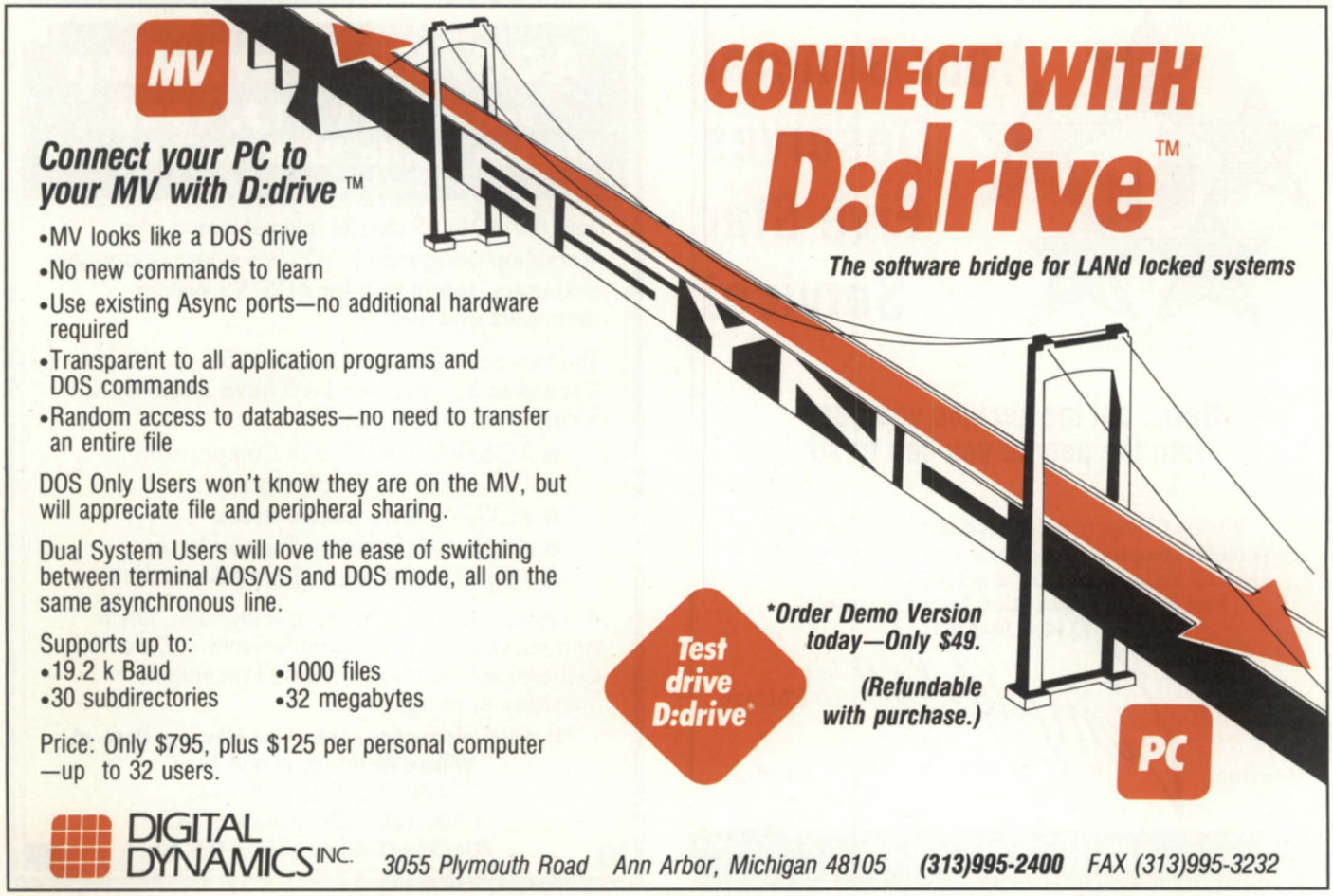
SETUP (Shift-F8)
RECORD DISPLAY (2)

Using the arrow keys, Stephanie moves to the "A" in "Arts" and switches to typeover mode. She then types "Customer Contact List" in its place (See Figure 1).

All this activity has knocked a vertical bar out of position. To replace it, she moves to the right of the "T" in "LIST" and uses the space bar to push it back over to the right. Then she moves to the left of the "C" in "CUSTOMER" and uses the space bar to push the title into the center of the screen.

The input form is divided into fields, where the data is entered, and prompts, which indicate which field is which. Each prompt is to the left of the corresponding field. The prompts are just reminders, so she will type over them:

Old prompt	New prompt
NAME	FIRM NAME
SALUTATION	OWNER'S NAME
ADDRESS	ADDRESS
HOME PHONE	PHONE
WORK PHONE	LAST CALL
BIRTHDAY	LAST VISIT
NOTES	NOTES
N/A	PRODUCT



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Stephanie types over all the old prompts, and replaces them with her new prompts. Next, she renames the fields.

Old field	New field
NAME	FIRM NAME
SALUTATION	OWNER'S NAME
ADDRESS	ADDRESS
HOME PHONE	PHONE
WORK PHONE	LAST CALL
BIRTHDAY	LAST VISIT
NOTES	NOTES

For example, to replace the field called "NAME" with a field called "FIRM," Stephanie uses the right arrow to move the cursor to the "N" in "NAME" and presses:

```
EDIT FIELD (SHIFT-F8)
NAME (3)
FIRM (NEWLINE)
EXIT (F7)
```

She repeats the process for "SALUTATION" and the other five fields, changing the old field names to the new ones.

What happened to the field called "PRODUCT?" Stephanie's application has eight fields, but ART.NB has only seven. Now that she has replaced all the old fields, to include "PRODUCT" she must add a field, and give "PRODUCT" a prompt. There is a spot for it on the right in the empty box. Stephanie moves the cursor to the empty box and types the prompt "PRODUCT:" and presses:

```
EDIT FIELD (SHIFT-F8)
INSERT (4)
```

Notebook does not create the new field where she placed the cursor. Instead, it places it at the bottom of the screen. She types:

```
NAME (3)
"PRODUCT"
POSITION (2)
```

and uses the arrow keys to drag the "PRODUCT" field to the box next to its prompt. When the new field is at last in position, she presses:

```
EXIT (F7)
```

which restores the List Display. Stephanie has finished with her Record Display.

All that remains is to adjust the List Display, and the Notebook application will be finished. Stephanie presses:

```
SETUP (SHIFT-F8)
LIST DISPLAY (1)
```

In LIST DISPLAY SETUP, the arrow keys do the work.

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If you need outstanding
enter one of the fol

KEY	ACTION
UP ARROW	CHANGE FIELD
DOWN ARROW	CHANGE FIELD
RIGHT ARROW	MAKE FIELD WIDER
LEFT ARROW	MAKE FIELD NARROWER
SHIFT-RIGHT ARROW	MOVE RIGHT
SHIFT-LEFT ARROW	MOVE LEFT

She then presses the up and down arrows to scroll through the choices for the first column of list display. The choice of the field to occupy the first column is important, because Notebook sorts by that field. Stephanie chooses LAST CALL, because a list of accounts sorted by the last time they received a call will help her decide which firm to call next.

With LAST CALL selected, she moves to the next field by pressing SHIFT-RIGHT ARROW twice. She again uses the up and down arrows to change the name of the field. When a field is too narrow, Stephanie moves to it and RIGHT ARROW widens it as needed. If a field is too wide, LEFT ARROW shrinks the field to the proper width.

When the fields appear in the order and width desired, she presses EXIT (F7), and her application is finished. It is now ready for data entry. The exit-and-save sequence is the same as in Wordperfect. You *must* replace the old file from the last session, or you lose all your work from this session. The Notebook is now ready to use, available with one keystroke from Office menu.

A warning

Notebook is new, and still has a few bugs in it. Be careful when using Help. On my system, typing

HELP (F3)
PRINT (SHIFT-F7)
CLIPBOARD (5)

to request the help associated with printing to the clipboard resulted in a hung terminal. Wordperfect suggests the following to release the terminal:

CMD-BREAK/ESC
CTRL-C CTRL-B.

Easy "A"

Copying the sample Notebook file is a rapid method of starting the Notebook. Naturally, for a complex Notebook file truly tailored to your needs, you must start with a blank screen and do all the design work yourself. However, for many simple applications created by busy people under time pressure, a peek over Wordperfect's shoulder at ART.NB is an easy "A." Δ

Kent Finkle is the computer system manager for the Town of North Andover, Massachusetts.

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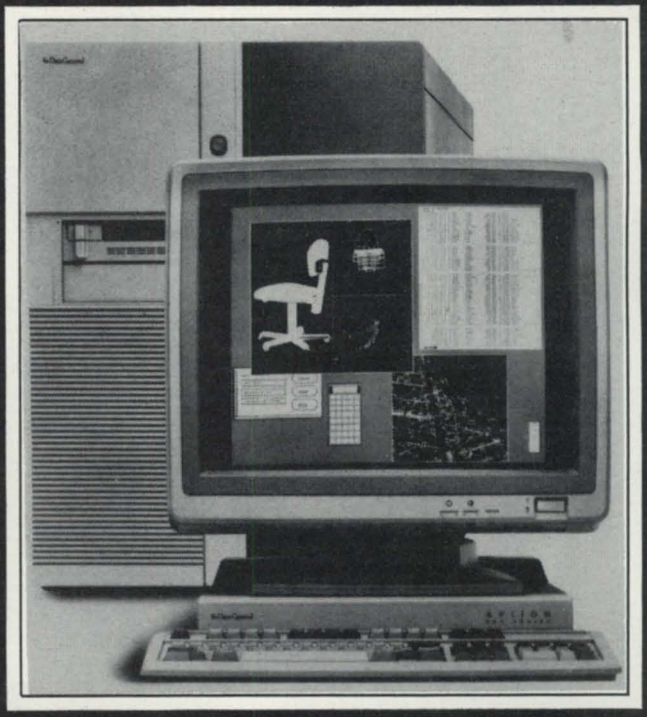

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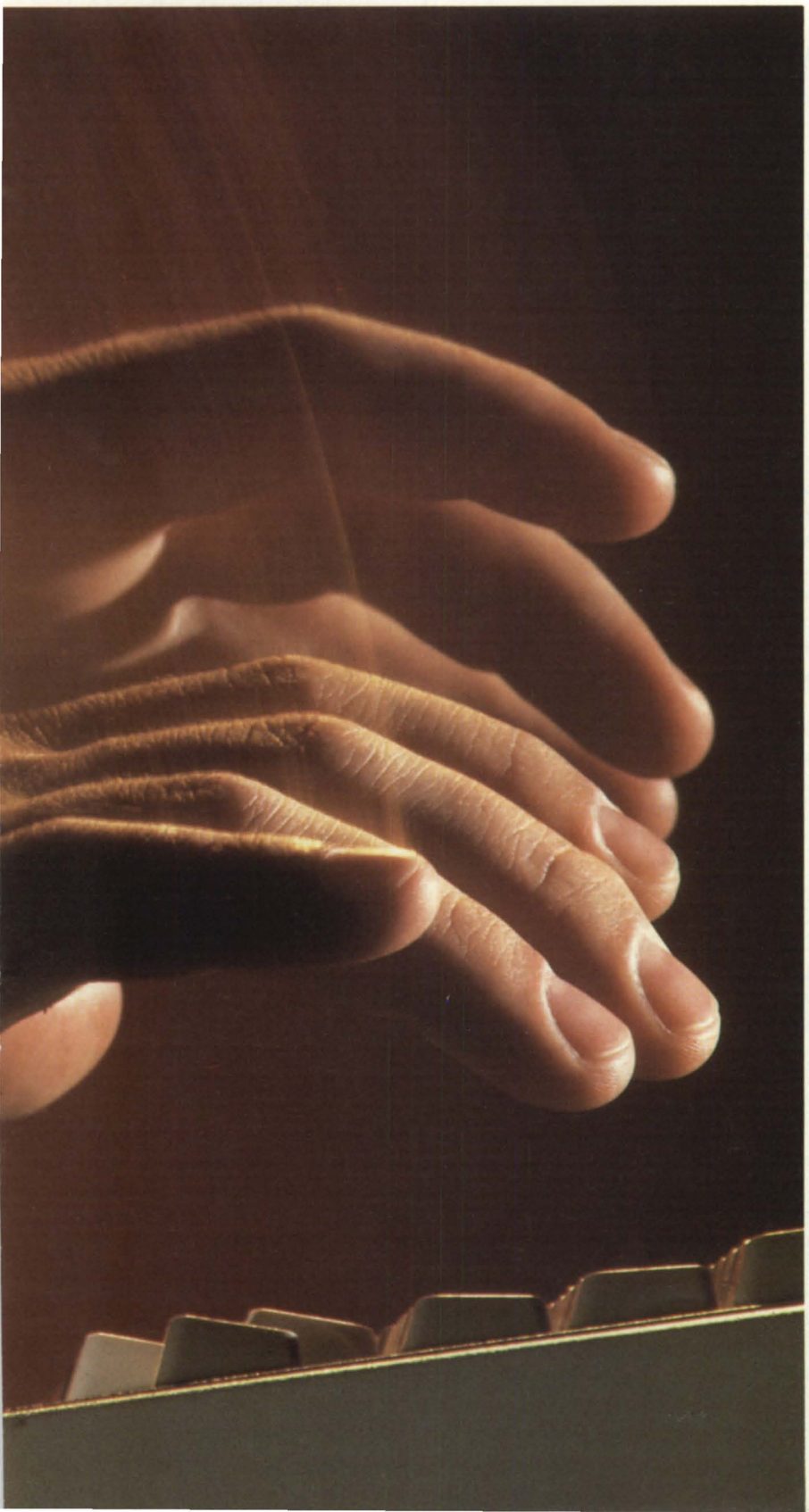

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Notes from New Orleans

SYNOPSIS

Facts: ICobol rev 1.51 for MS-DOS, updated benchmarks, the MV/2500, and RDOS for the MV/78XP and MV/15 series. But rumors of ICobol re-written in C are only half true.

I made it back from New Orleans, one day ahead of Hurricane Hugo. For the sake of the ICobol SIG, I'm glad Dennis Doyle decided not to fly into Charlotte on Thursday morning.

Everyone tells me that it was a great conference. I wouldn't know. I spent most of my time in bed, sleeping off a cold. I did, however, manage to make it to a few sessions.

The ICobol roundtable was, as usual, enlightening. Revision 1.51 for MS-DOS was announced in July. Along with the switch to the new file format, 1.51 lets the user count go to 11 and the program size to 128 KB. The new features from VS ICobol, such as ICOMPACT and ACCEPT . . . FROM ENVIRONMENT, have also been included. RDOS, AOS, and AOS /VS, on the other hand, are category C. So, unless a bunch of you VARs make some noise about having to maintain two different file structures, files will be incompatible between RDOS-AOS and MS-DOS-AOS/VS. There is nothing inherent in RDOS that makes the new file structure impossible to implement, and I'd like to urge DG to give the long suffering RDOS community one more release of ICobol, just to make all of our lives a little easier.

This year, DG passed out updated benchmarks. The last time it did that was in 1983, for ICobol 1.10. Things have changed a bit, folks.

I was impressed by the performance of the MV/2500. I had heard that it was a hot box, but according to these numbers, it darn near keeps up with the MV/15000 Model 8, and I believe there is a bit of a price differential between the two processors.

The major change, though, is the addition of the MS/ICobol numbers; 1983 was before the days of MS/ICobol. Take the following configuration: a Dasher 386 with 640 KB memory, running at 16 Mhz (not an exceptionally fast machine today). Forget tricks like disk caching. Put eight users on it, and run it against a nice, hefty MV—say, an MV/15000 with 24 MB memory. Using the AR64 benchmarks, the results turn out identical! Get a 25 Mhz 386, enable cache memory, add a couple of megabytes of expanded memory, and . . . goodbye, MV/15000. I can't say for certain what the performance is like against bigger machines. There's only one test in here with an MV/20000, and it's single user I/O stuff. The 386 blows it away, too. This helps explain why ICHOST is so fast. Apparently, ICobol on the PC platform is pretty darn fast on its own. Add a few 80186 processors, and you've got something that really flies.

Moral of the story? I thought DG was nuts to switch from a proprietary architecture to Unix. As usual, I'm wrong again. When a plain vanilla PC-AT with an 8 Mhz clock will outrun an MV/2500 (and by a healthy margin), it's time to get out of the MV/2500 business.

Speaking of which, it looks like ICobol for the Aviion and the 386, running under Unix, will be announced this quarter for an early 1990 release. It will be source, object, and file compatible with MV/ICobol, except for those of us doing nasty system and assembler calls.

The rumor going around was that ICobol was being rewritten in C. The question at the roundtable was "How slow is it?" Actually, there's good news on that front.

It seems that only the compiler and utilities are being rewritten in C. The things that we need to go fast— Minisam and the runtime unit—will remain written in assembler in DOS and VS. This is fine with me (I don't particularly care how long my compiles take. Since utilities like REORG use Minisam anyway, there shouldn't be much of a speed difference).

There's a downside to it, of course. Any new features that call for changes to Minisam or ICX will appear in the Unix world first. On second thought, though, this might be an advantage (let 'em find the bugs on that Aviion, and then port the corrected code to VS).

The next revision of ICobol (1.52) will have yet more record locks (someone out there has to be running with one heck of a lot of users), but it will be implemented a little differently. Each file will have the basic limit of 100 locks per file. After this is exceeded, ICobol will dip into a global pool of system-wide locks, maximum 12,000. So theoretically, you could have a file with 12,100 locked records. Should be sufficient . . . .

For those of you who are still a bit nervous about going to the new file structure, Gerry Manning's talk was designed to be reassuring. Gerry went over the details of the new structure. The reason that it is such a clean release is that there really weren't that many changes made. The .XD is unchanged, except that the revision is now at the front of the record. The .NX was expanded to hold more keys per block. This change enables more keys to be packed per node, and thus keeps you from running out of levels as quickly. If you take a look at the file structure, the only thing that's changed (aside from a little rearranging and a couple of new fields) are the NX block number and each key's top block; they've gone from 4 bytes to 8.

If you have large keys, this is especially good news. With a 100 byte key, you would have run out of levels at 158 records under the old scheme. Under 1.50, you'll be able to fit about two *million* records. You'll run out of disk long before you run out of index levels. But even if you have a large number of small keys, you'll notice some performance improvement—not a lot, but it's there. With fewer levels, Minisam has to do fewer reads to find a particular key. This will only show up in random reads, however, so don't expect any improvement on your batch jobs.

The new fields are the file type, number of deleted records, and key densities. Key density would be useful information to have, but Gerry stated that it's not currently being used—in fact, if you change the value from the 50 that it's now set to, the file will corrupt. File type is currently set at 0 for ISAM and 1 for relative. This is a field that I'm sure that ICobol utilities will be using in the future. Deleted records simply keeps track of the deleted record count in the file. It's the reason that ANALYZE is now so quick (and also one of the reasons that my UNDELETE program (February 1986) won't work any more). To fix UNDELETE, you'll need to put an X(2) filler at the beginning of the .XD record. You'll also have to set the deleted record count in the .NX to zero. The .NX header now looks like this:

```
01 NX-RECORD.
05 FILLER                    PIC X(38).
05 NX-DELETED-RECORDS        PIC 9(8) COMP.
05 FILLER                    PIC X(470).
```

This year, we had a third ICobol session, hosted by Bruce Ray from Wild Hare.

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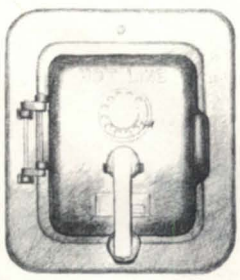

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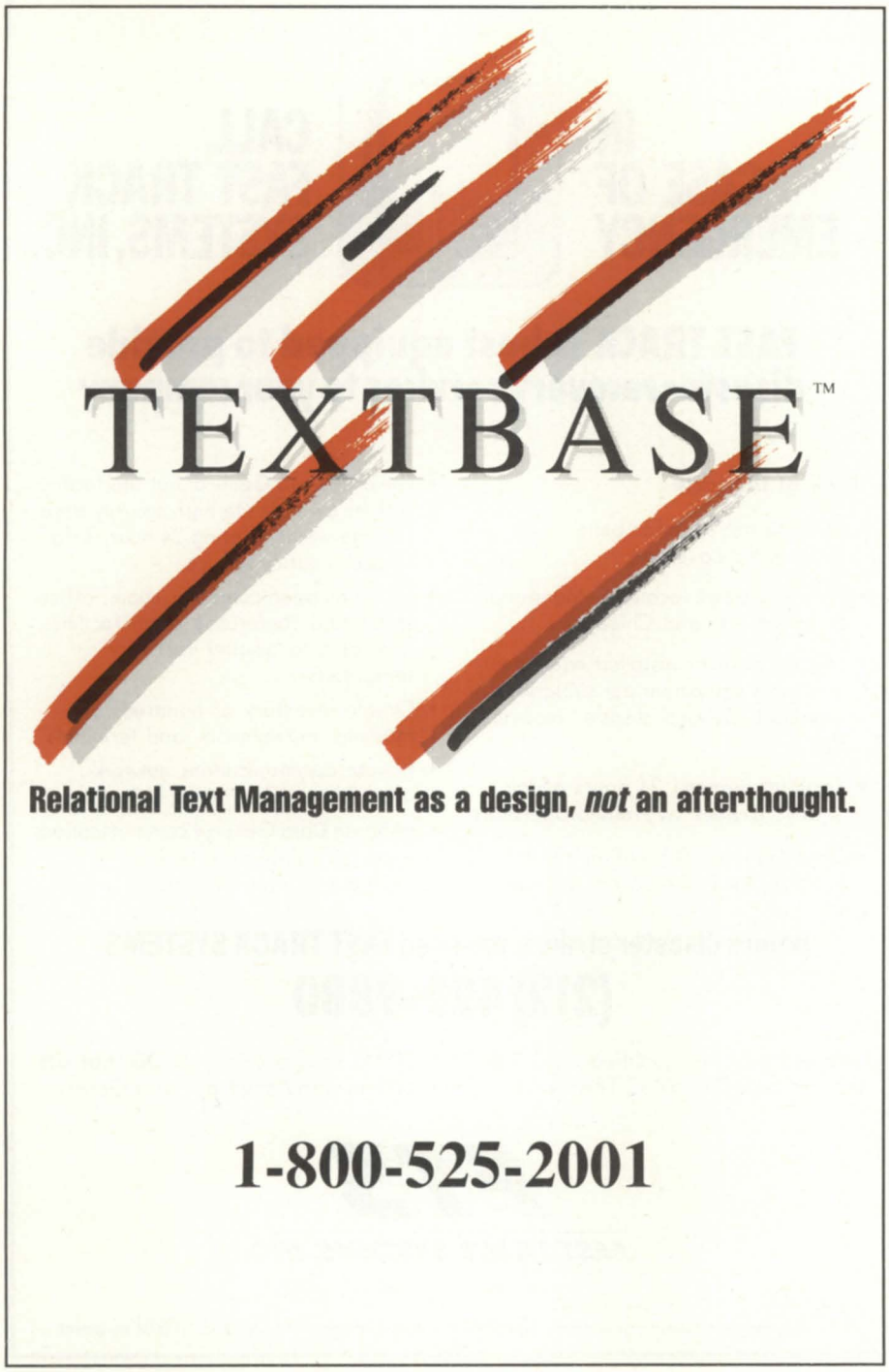
Bruce discussed some of the history of ICOS/ICobol, and how the language is being ported all over the place. It looks like you can run ICobol on darn near *anything* now.

There was a surprise addition to the schedule on Wednesday. An RDOS roundtable was scheduled at DG's request! Long time readers of this column know that I had to attend, if only for nostalgia's sake. The big news was the announcement of DG/RDOS for the MV/78XP and the MV/15 series. The DG/500 can now go to 32 QTY lines. Aside from that, not much has changed in the RDOS world (in fact, I think some of the slides used were left over from two years ago). Mapped Eclipse RDOS is now at rev. 7.60, DG/RDOS at 2.40, and everything else is category C.



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Odds and ends dept.

While in New Orleans, I was collared by the people from Rhintek, writers of EMU and EMU/470. It seems that in my review of transfer programs, I had forgotten them. Because I use EMU and I depend on their good will, allow me to make amends. Rhintek includes with EMU an Xmodem program for the PC, along with two VS assembler programs, XMREC.SR and XMSND.SR. Since these are written in assembler, they're blindingly fast—about 10 percent faster than the next fastest Xmodem program, while using less than 4 percent of the CPU.

I'm sure someone else will be writing about the 32 bit CLI, due out soon. I'd just like to get on record that DG used that certain four letter word that keeps getting them in trouble with the user community: "free." That's right, the new CLI will have lots of new features, and at no charge. Maybe marketing does pay attention, after all. On the other hand, if anyone out there hears any rumors about a product called "CLI II," give me a call—quick.

Join the ICobol special interest group! Our dues are the same as the price of an upgrade to VS rev. 8 and our newsletter comes out as often as updates to AOS/DVS, so we need *you* to make the group work. We're an informal group that forms a loose network to get our members' problems solved. ICobol is DG's top selling language, and you need to support the SIG for the same reason that you need to support NADGUG—strength in numbers. To join, contact:

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Software Alliance
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Beaverton, OR 97005
503/643-2446

or leave a note for me on any of the bulletin boards. Δ

Tim Boyer is EDP Manager at Denman Tire Corporation. He may be reached at P.O. Box 951, Warren, OH 44482, 216/898-2711 or on the NADGUG bulletin board at 415/924-3652.

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Commodity computing

SYNOPSIS

Don't let the speed of change in the workstation marketplace catch you off guard. With foresight, you can make current trends work to your advantage.

Last month, I examined some of the changes in the workstation marketplace that will affect us in the first part of the 1990s. Market consolidation and the trend towards downsizing, supported by more powerful microcomputers, will allow us to take advantage of specialized application servers on industry standard hardware and software platforms. This is not science fiction. These capabilities exist today, but many minicomputer users are still skeptical.

For you skeptics

It is a challenge to convince minicomputer users that a big machine in an air-conditioned room can't hold a candle to a little box that fits under a desk. But it's true. We now have customers who find they can move data from a mini to an 80386 PC, sort it, and move it back to the mini in less time than it takes to sort it in place.

The real reason that minicomputer vendors are in trouble is this: they just can't go on trying to convince the world to spend ten times the money for one-tenth of the performance available from microcomputer workstations. Facing reality, the mini vendors have a new challenge: to restructure their product lines without losing their valuable installed base. Finally admitting "if you can't beat 'em, join 'em," they are embracing a wide variety of industry standards such as PCs, MS-DOS, Unix, and Netware.

Homogeneous environments

The advent of Novell's Portable Netware marks the fourth generation in PC integration, for now there is no longer a strong functional distinction between servers based on minicomputers and microcomputers; they can be used interchangeably. A workstation can utilize the services of both the mini and the micro as though they were identical.

Death of the terminal

While users and managers will continue to argue the pros and cons of MS-DOS, OS/2, Windows, New Wave, and Presentation Manager, one thing is certain: the standard user interface hardware is the IBM PC clone. PCs can now access both file servers and minicomputer applications alike, but the old VDU terminals are restricted to the traditional minicomputer applications. There have been few justifications for continued purchase of VDU terminals in the recent past; now there will be almost none.

Freedom of choice

Since with these new technologies mini and micro servers are interchangeable from the workstation perspective, the decision to use one or the other is no longer based on functional differences. If you just need a fast file server, go with a cost effective solution like an 80386 box running Netware/386. On the other hand, if you have an investment in existing applications, keep the mini and add Portable Netware. This is a hardware-only choice, for the software in both cases is true Netware, and your PC users will not know the difference. Even if you go the minicomputer route, you are not locked in. When it comes time to expand, you can do so by either adding disk and processor power to your minicomputer, or installing one or more 80386 servers.

Unix systems

How about Data General's new Aviion system based on the Motorola 88000 chip technology? Portable Netware is also

being ported to this product line. It is clear that in raw MIPS, the Aviion line offers better price/performance than the MV family. This is another example of the benefits of generic computing. But how can today's MV family user plan for migration to these more cost-effective processors?

The answer again lies in the use of homogeneous environments such as Netware. If your application environment is based upon Netware, you can freely interchange file servers based upon PCs, MVs, and Unix processors. This flexibility unlocks a wider range of choices and allows you to make your decisions based upon factors other than compatibility.

Commodity computing

Consider, again, the difference in upgrade paths for minis and micros. If your applications are based on a minicomputer, your options are limited: you will typically buy a bigger and faster mini, and sell your old one for pennies on the dollar.

But suppose, instead, you buy an 80286 class machine as a file server, and six months later outgrow it? As with a minicomputer, you must buy a bigger and more powerful server, probably one based upon an 80386; but don't throw away the old one. Because it is an industry standard box, capable of running a plethora of application software, it can remain in continuous service. None of your investment goes to waste, and you can often make such an upgrade without purchasing new versions of your networking software.

I call this strategy commodity computing because all of your purchases are made with standardization in mind, knowing that as your needs increase, your well-chosen investments in hardware and software should be reusable. Commodity computing offers you a risk-free upgrade path.

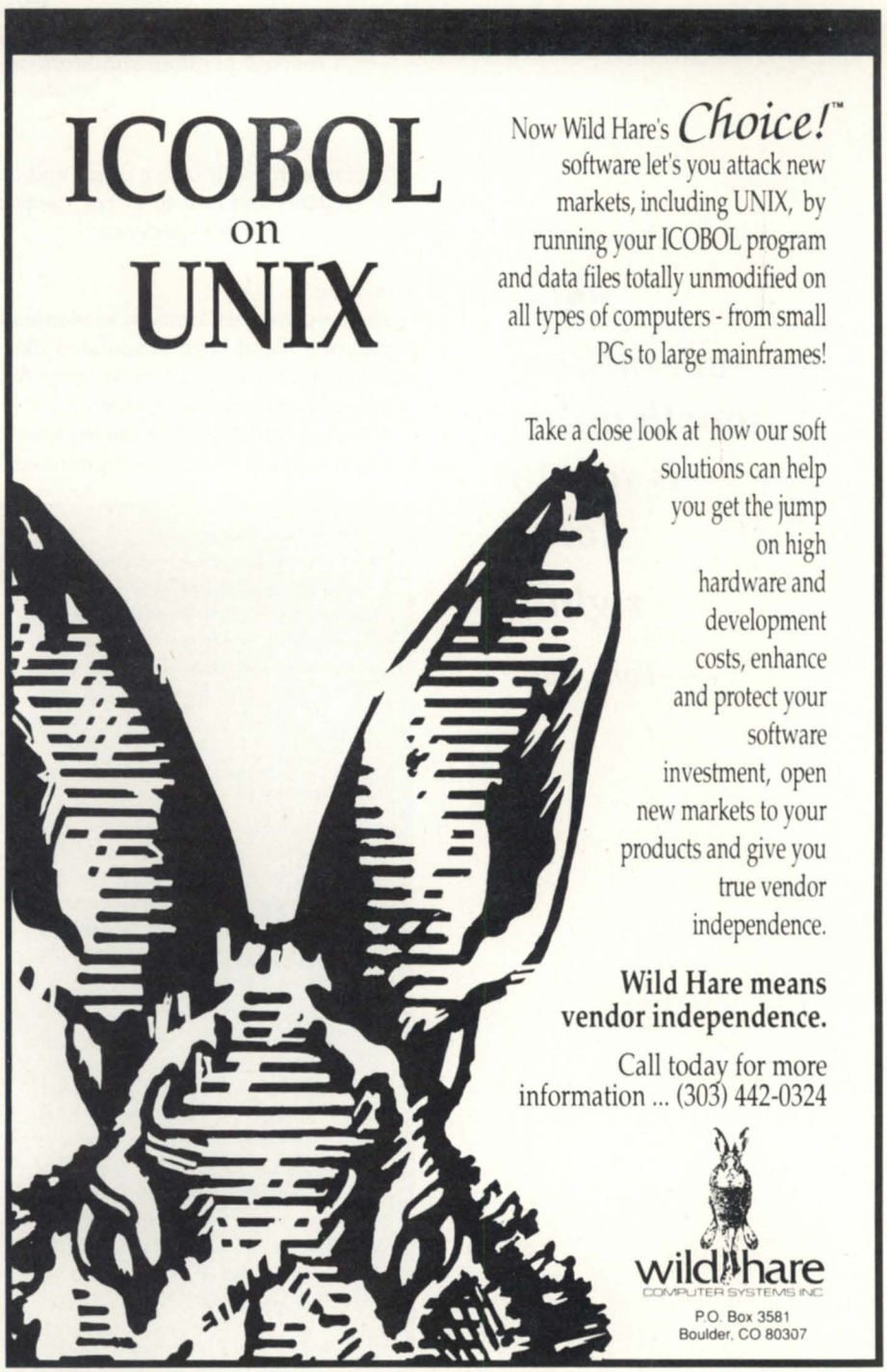
Commodity computing also means that for many components (typically PCs and clones) you can choose from a wide variety of sources, which helps keep costs down.

Recommendations

It's time to consider how you can benefit from these trends in our industry. Yes, there is an educational process involved, and you're going to have to get your feet wet. You should plan to become literate in MS-DOS, Unix, and Netware.

Overwhelming? Not really. If you don't know MS-DOS already, shame on you! Unix? It's just another operating system. Not as good as AOS/VS, but no big deal. The big *gotchas* are LANs and LAN software, and in future articles I will do my best to get you started. Δ

Doug Kaye is the chairman of Rational Data Systems. He can be reached at 1050 Northgate Drive, San Rafael, California, 94903, 415/499-3354. This article is excerpted from the "1989 Rational Data Systems Report on PC Integration." For a free copy, contact RDS at 150 South Los Robles Ave., Pasadena, CA 91101; 818/568-9991. Copyright 1989, Rational Data Systems.



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Sloppy times three

SYNOPSIS

A less than perfect sample program is revised to allow simultaneous copies under AOS/VS.

This month I will take a quick and dirty sample program (one that works but isn't very elegant) and add to it. For the purpose of the exercise, I assume that you have previous assembler experience.

"Not everything worth doing is worth doing right."

—Tom West

Triplicate

The seed for this article was planted after I saw a request for a utility to make two copies of a file at once. It sounded like a handy way to make simultaneous backups; either that, or the person making the request works for the government. After all, who *else* would want files in triplicate?

A logical way to make a file triplicator is to take a file duplicator and modify it. Data General supplies a sample program with AOS/VS (look under :UTIL) called BOOMER. It accepts arguments for the file names compatible with the CLI COPY command. The original intent of this sample program was to demonstrate the use of the ?XMT and ?REC systems calls. I thought that BOOMER could be modified to produce two output files instead of one.

BOOMER is a multi-tasked program. It has one task that reads the input file until end of file. Each block read has its address "mailed" to the second task via the ?XMT /?REC system calls. The second task waits for an address, then writes that block to the output file. The internal buffer is set at 2,048 and the file is read in blocks of this size. When the end of file is detected, the block length will be less than 2,048, although any value up to 2,047 might be found. When the final "short" block is detected, the input task kills itself. The output task returns to CLI after writing the final block, if the length is greater than zero.

The task at hand is to add a second output file to BOOMER. While we're at it, let's make two other changes: alter the command line to make the input file the first argument, and make the output files the second and third arguments. We'll also increase the internal block size to 16,384 (the maximum size on the SCSI tape units).

Ghost of Christmas past

Last year, this column featured "Jim's top 10 list of Christmas wishes that will never happen." I am pleased to say that DG has made me a liar on at least one prediction, maybe on two.

One item on the list was an auto-baud AOS/VS port. Look at what happened in AOS/VS rev 7.64 . . . the CHARACTERISTICS command has a new switch: /AUTOBAUD.

The wish I thought would really never take place was "marketing geared to make sense, not dollars." Two things that happened this year may (hopefully) prove me wrong. The first was Data General's reversal of its policy of bundling SPSA with the first AOS/VS support contract on a site. The customers let DG know—in no uncertain terms—what they wanted, and DG listened.

And as for Data General's new advertising campaign, it makes me think that DG has stepped back about 15 years to its Golden Age of Advertising. At the time, DG was more aggressive (in the advertising world) than DEC or IBM; after all, DG made the best gear and operating systems on the market. Well, DG has the best Unix box on the market (at least temporarily) and a solid version of Unix. That's just what their new ad campaign says, and it does so in a way that gets your attention. I find this new return to an old theme encouraging, amusing, and downright fantastic! It's time DG quit being an IBM and DEC marketing emulator.

Time out for a contest

I had only one problem to resolve before proceeding—deciding on a name for the new program. TRIPLICATOR and DOUBLE_COPY were too long to be convenient and DCOPY looks too much like DISK_COPY. I temporarily settled on FCOPY2, and decided to hold a "name that program" competition. The name should be short, meaningful, and easy to remember. Preference will be given to six-character names. The winning entry will receive an official NADGUG Conference '89 t-shirt. You may submit your entries on a *Focus* reader service card or send them to me directly at the address below.

Now back to work

To start, I suggest that you either QPRINT BOOMER.SR or somehow duplicate the original so that you have a copy to work from.

Step 1 is cosmetic; change every occurrence of BOOMER to FCOPY2. Step 2 is to rewrite the documentation at the beginning of the program to conform to its new functionality. Step 3 is to adjust the buffersize by changing the line that reads "BUFLENGTH = 2048" to "BUFLENGTH = 16384."

The next step is a little more complicated. The first executable line of code, ?GTMES, retrieves the second argument for the input file. It should be changed to the first argument. The change takes place in the ?GTMES packet. Find the line "GPACKET: .BLK ?GTLN." This is the memory allocation for the packet. Several lines later you see .LOC GPACKET+?GNUM followed by a 2. Change the 2 to 1. This will initialize the ?GTMES packet to get the first argument instead of the second. After the ?GTMES, there are five more commands to move the file name pointer and open the input file.

You may then modify the program so that the second argument is used for the first output filename by changing NLDAI 1,0 to NLDAI 2,0. The next seven lines are unchanged. To open the second output file, after the two lines ?OPEN OUTPUT and WBR ERROR, add the following:

```
NLDAI     3, 0
LNSTA     0, GPACKET+?GNUM
?GTMES    GPACKET
WBR       ERROR
LLEFB     0, FNAME*2
LWSTA     0, OUTPUT2+?IFNP
?OPEN     OUTPUT2
WBR       ERROR
```

Since these lines are nearly identical to the eight lines before it, one could simply duplicate the code and change the three lines that are not the same. You may have noticed a potential problem with this modification. We made two references to OUTPUT2, but OUTPUT2 has not been defined. The first output file is defined starting with the program line "OUTPUT: .BLK ?IBLT." The definition of the second output file will be nearly identical; the difference is the packet address name (OUTPUT2 instead of OUTPUT). Since we are using the same pointer for the filename and the same data buffers, we did not set up separate areas for those fields.

Now that we have opened our two files, all that is left is to make sure we write to both of them and close them. To duplicate the write, find ?WRITE OUTPUT followed by WBR ERROR. Add a line before the write that reads LNSTA 0, OUTPUT2+?IRCL and two lines after the WBR that read ?WRITE OUTPUT2 and WBR ERROR. The first line stores the actual data length to be written in the proper part of the packet, the other two lines perform the write and handle the error. Be sure to store the buffer length in all the output packets before you start writing, so that you don't have to reload the length for each file. The writes can be stacked up since no fancy error handling is involved.

That leaves us with only one modification left: closing the data base files. However, the original program didn't bother with the close. Since the ?RETURN call will close all outstanding files as part of its normal operation, we will allow ourselves this bit of sloppiness this time.

Sloppy programming?

Sure, there are several aspects of this program (both before and after our modifications) that prevent it from winning the program of the year award. If this were part of a production application system, I would address these shortcomings. In addition to the aforementioned problem with not closing files explicitly, none of the error conditions are handled by the program. Any error encountered will simply abort to CLI and count on the

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CLI to display the corresponding error message.

You cannot solve the file closing problem without at least considering the error handling problem. During the program initialization, there will be one, two, three, or no open files, depending on the nature of the error. We would need to modify our error handling routines and shutdown routines to know how many files were open. Since they are opened in a set order, we will know which ones are open by knowing how many are open.

Once the second task is started it gets a little trickier. During most of the program, all three files are open. However, once the EOF is encountered, the input file is closed. Therefore, if a fatal error occurs after the second task has been started, the error handling routine kills the other task (if it still exists) and closes one, two, or three files.

The easiest way to handle conditional file closings is to set a flag for every file that is open. Then, before doing the ?RETURN, execute a routine to check all flags and close only the open files. To simplify things, an error encountered trying to close a file would be ignored. To check on other tasks would mean keeping a list of active task IDs, having the error routine check which task entered it, and killing any other active task. All of this would be wonderful practice in dealing with assembler, but the ?RETURN verifies that it has all been done.

Let's look at the problem of error messages. As I commented before, we are simply passing the error code to the father CLI via the option in the ?RETURN system call. The father CLI does the equivalent of the MESSAGE command and displays the text. This will produce semi-useful messages. For example, if you get a file access denied error, how do you know which of the three files it is? How do you know what operation you were doing?

So, how do we get useful error messages? One answer is to write an error handling routine that sets up a small table ahead of time that tells which system call we are executing, what file is to be accessed (if any), and where to go after producing the error message. This could become a very involved routine if we were to allow flexible handling of all types of system calls. Perhaps a more practical approach would be to write more than one routine: one for input files, one for output files, and another to handle initialization problems.

Ignorance is bliss

Another source of sloppiness is in our command line processing; we don't check to see if all arguments are supplied before we start the actual processing! FCOPY2 simply grabs the first three arguments and tries to open the files. A more thorough programmer would check the number of arguments supplied and issue appropriate messages if the correct number was not present. Furthermore, the programmer would check to see what switches (if any) were on the program and the arguments. Since we don't have any switches defined, any switch found should give an error (or at least a warn-

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ing that it is being ignored). Suppose, for example, we execute FCOPY2 with the command:

```
X FCOPY2 INFILE/ELEM=128 OUTFILE+
```

There are two fatal errors and one nonfatal error on this command line. First, there is only one output filename. Second, the filename is invalid. The nonfatal error is the elementsize switch I added to the output filename. It should either terminate the program (without creating any output files) or give a message to the effect that the switch is undefined and has no effect on the program. Although it would be acceptable to give any of these errors and terminate, I would prefer to see all problems listed on the first attempt.

Back to square one

Now you know why I started this article with Tom West's quote from Tracy Kidder's "Soul of a New Machine." Although it is sloppy programming to have all errors handled by aborting, possibly leaving open files and running tasks, the ?RETURN system call diligently takes care of them. And while it is ideal for a program to leave the environment the way it found it, ?RETURN makes up for a lot of sins. Therefore, rather than spend the time writing code to handle errors and file closings cleanly, we simply let ?RETURN do its job. This little utility is so limited in scope that there aren't enough sources of error to cause one to spend a lot of time troubleshooting a problem.

Is that all there is?

There are three features I would love to see added to this little program. The first is an allowance for variable block lengths. This would only matter if your input was from tape. I think there might be a way to do this with only one additional command. (I invite any reader who accomplishes this to contact me.)

The second feature I would like to add is multiple buffers. At the moment there are only two. It would be better if there were four or more that could be used in rotation. (I ran some tests in Cobol that show that four buffer areas produce maximum disk throughput.) Then the input and output tasks could run even more efficiently. The third feature I would add is the ability to make multiple copies depending on the number of arguments present on the command line.

NAWLINS

I just returned from the conference in New Orleans and I am pleased with the overall results. I picked up ideas for future columns and other neat stuff. I'll hold off on those until next year and as a Cajun Santa Claus might say, "Heaux, Heaux, Heaux! Merry Christmas!" Δ

Jim Siegman is a contributing editor to ***Focus*** *and treasurer of the Chicago Area Data General Users Group. Send comments or questions to him c/o Datamark Corp., 3700 W. Devon, Suite E, Lincolnwood, IL 60659; 708/673-1700.*

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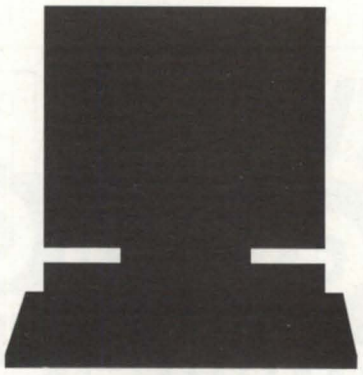

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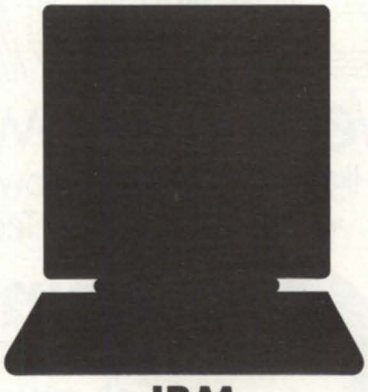

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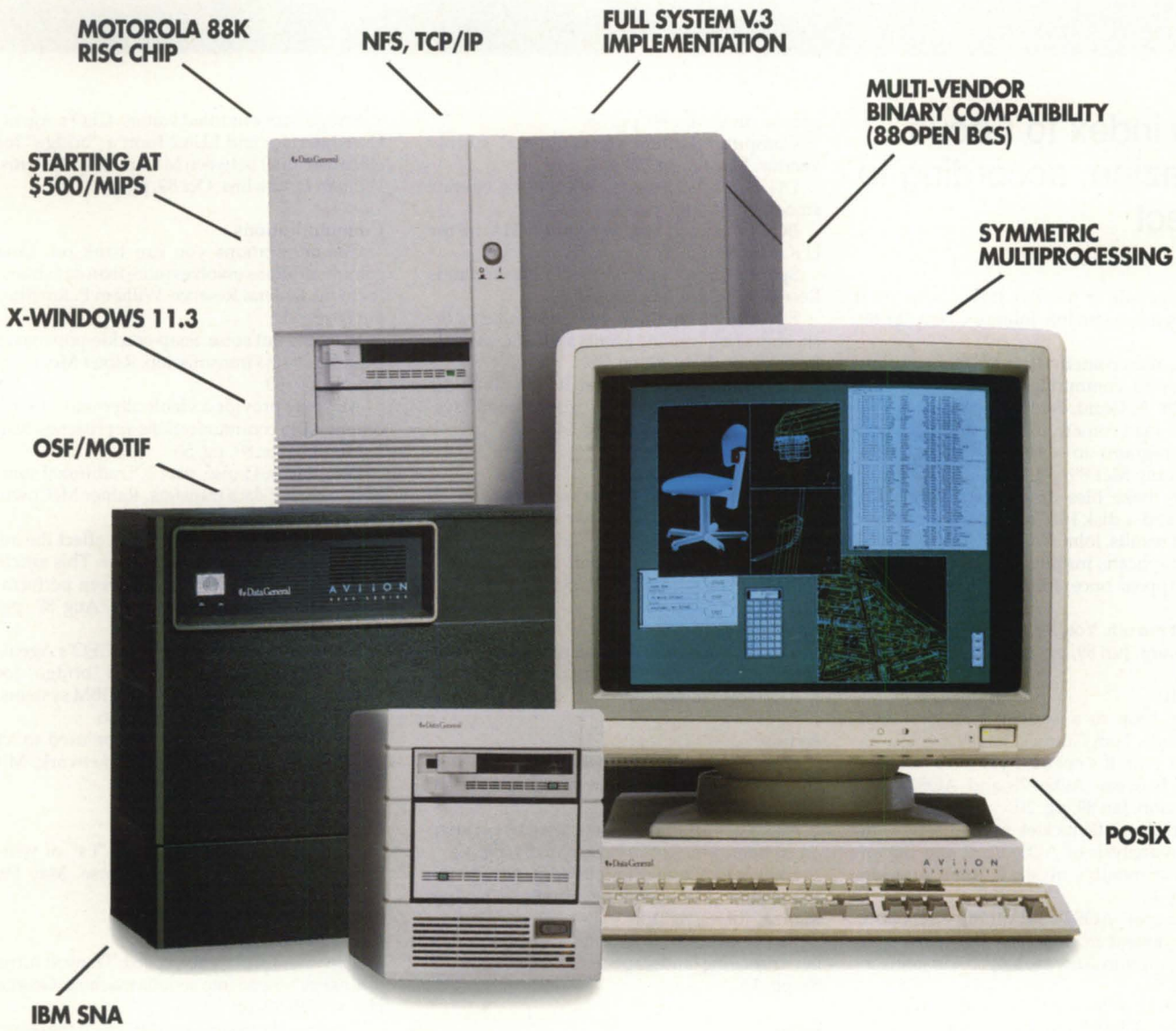

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INDEX
TO FOCUS MAGAZINE

1989 index to Focus Magazine, according to subject

AOS/VS

Rummage sale or treasure trove? Four short items from the macro bin. John A. Grant. Jan 89, pg. 62.

The IPC man cometh (Part 1). There are several routes to communication between programs. John A. Grant. Feb 89, pg. 56.

The IPC man cometh (Part 2). A simple way to code programs to wait for IPC messages. John A. Grant. Mar 89, pg. 76.

How to make files disappear. Using /APPEND to add a disk file to a tape can produce unwanted results. John A. Grant. Apr 89, pg. 72.

Don't duplicate, instantiate! Good code only needs to appear once. John A. Grant. May 89, pg. 50.

The last hurrah. You'll still have him on tape. John A. Grant. Jun 89, pg. 66.

AOS/VS II

Coming soon to a system near you. AOS/VS II debuts. Tom Gutnick. Jan 89, pg. 15.

Election year. It's not over yet. You still have to decide between AOS/VS and AOS/VS II. Brian Johnson. Jan 89, pg. 20.

Why so slow? BJ tackles several topics, including an analysis of AOS/VS II and the answer to last month's mystery. Brian Johnson. Sep 89, pg. 48.

At what cost? AOS/VS II tuning offers hope for improvement in disk I/O, but increase in CPU consumption is here to stay. Brian Johnson. Oct 89, pg. 94.

AOS/VS II: Why not? The author puts the AOS/VS or AOS/VS II question in a new light, and outlines the design goals of AOS/VS II. Tom Gutnick. Nov. 89, pg. 61.

AOS/RT32

Update on AOS/RT32 rev 5.00. Performance improvements and new features for DG's 32-bit real time operating system. Craig Presson. Jan 89, pg. 26.

Applications, MV/15000

Puerto Rican fortress guards state operations. Mar 89, pg. 26.

DG is Australia's "Initial Choice" Mar 89, pg. 32.

The art of marketing in India. Mar 89, pg. 35.

In New Zealand: Optical technology cuts response time. Mar 89, pg. 35.

Computer system steers animal supply vendor. Mar 89, pg. 37.

DG helps Belgium plastics plant operate smoothly. Mar 89, pg. 46.

BCT installing first MV/40000 HA in the U.K. Mar 89, pg. 47.

Space chatter interpreted at Netherlands Research Center. Mar 89, pg. 48.

Fine-tuning tradition. MV system helps orchestrate fund-raising events for Carnegie Hall. Betsy Zullo. May 89, pg. 38.

Software arsenal. Disaster at Pine Bluff tests the military's information management system. Seemee Ali. Oct 89, pg. 64.

Artificial Intelligence

The age of reason. In the world of artificial intelligence, there are many experts. Robin Perry. May 89, pg. 18.

Stand and deliver. Expert systems in the U.S. Forest Service. May 89, pg. 20.

Assembler

Construction work. Assembler may be a programmer's most productive tool. Al Takach Hill. Jan 89, pg. 46.

Aviion

Aviion arrives. RISC workstation, server, DG/UX 4.1 debut at Uniforum. Greg Farman. Apr 89, pg. 12.

Making the rounds. Aviion systems get jump on competition. Robin Perry. Jun 89, pg. 12.

Early lead. Comparing the AVX 300 and the DECstation 3100. Phil Lemmons and Mark Mallett. Jul 89, pg. 16.

New machines have transformed the number-crunching landscape. A.G.W. Cameron. Jul 89, pg. 16.

Bugs

Bugs in the system. Pests can invade your environment in several different ways. Bill Spitz. Mar 89, pg. 75.

A tale of woe. Backups, a bug fix, and software support. Jim Siegman, Jul 89, pg. 52.

CEO

CEO decision base evolves. New features and functionality in rev 4 point to continued support. Don Dewar. Feb 89, pg. 18.

Check it out. DG/Library retrieves text, locates "misplaced" CEO files. Charlene Kirian. Apr 89, pg. 45.

Many faces for CEO. Office/Publisher lets users create professional-looking documents. Joe Cannata. May 89, pg. 24.

Bridge over muddied waters. CEO's Agent-User-Interface and LU6.2 form a "bridge" for electronic mail between MV and IBM systems. William P. Rawlins. Oct 89, pg. 36.

Communications

Communications you can bank on. Data communications involves more than data transfer to the Federal Reserve. William P. Rawlins. Jan 89, pg. 42.

Weeding out noise. Snap-crackle-pop makes trouble for data transmission. Rainer McCown. Apr 89, pg. 53.

AUI may provide a viable alternative to traditional data communications approaches. Kim L. Medlin. Apr 89, pg. 58.

Weeding out noise, part 2. Traditional solutions to noisy data transfers. Rainer McCown. Jun 89, pg. 46.

Trade wars. Many factors can affect the accuracy and speed of data transfer. This article analyzes several trade-offs between performance and cost. Rainer McCown. Aug 89, pg. 46.

Bridge over muddied waters. CEO's Agent-User-Interface and LU6.2 form a "bridge" for electronic mail between MV and IBM systems. William P. Rawlins. Oct 89, pg. 36.

Good connections. IPCs can be used to let programs communicate over a network. Michael Dupras. Oct 89, pg. 80.

Computer Games

Adventures await. The three "I's" of writing computer games. Larry Morse. May 89, pg. 68.

Computer Languages, BBasic

UBB offers portability, speed. Transoft turns ordinary Compaq into serious machine. George Henne. Feb 89, pg. 70.

Apples, oranges and disk drives. If the speed on the 386 is any indication, the 88000 is going to be one hot computer. Mar 89, pg. 62.

If it's speed you want . . . Unix implementations provide platform for B32 on the 386. George Henne. Jul 89, pg. 64.

Computer Languages, Cobol and ICobol

Special reserve. If I had known this worked so well, I would have done it a lot sooner. Jim Siegman. Jan 89, pg. 57.

ICobol grows up. ICobol maturity benefits users, receives healthy backing from DG. Tim Boyer. Jan 89, pg. 60.

One-way ticket. When you move up to ICobol rev 1.50, don't plan on going back. Tim Boyer. Jul 89, pg. 38.

I/O, I/O It's off to work I go. Reduce Cobol/Infos I/O errors with combined in-line file status checking and a general purpose error routine. Jay Anderson. Sep 89, pg. 76.

Notes from New Orleans. The facts are: ICobol rev 1.51 for MS-DOS, updated benchmarks, and RDOS for the MV/78XP and MV/15 series. But rumors of ICobol re-written in C are only half true. Tim Boyer. Dec. 89, pg. 36.

CLI

Strong arguments. Using Fortran and Basic to accept arguments from CLI. John Huddleston. Mar 89, pg. 70.

Winning the shell game. Customize WordPerfect's shell menu for simple, error-free use of the CLI. Kent Finkle. Sep 89, pg. 22.

You'll get hooked. The art of writing CLI macros is described in a new book from Shalless Software. Jim Siegman. Sep 89, pg. 56.

Automating the program building process. Combining the flexibility of CLI macros with a small C program, Western New England College has developed a versatile tool for program building. Pete Szaban. Oct 89, pg. 88.

Data base management

Data base update. DG's strategy for data base management is highlighted in this interview with Mike Normile. Aug 89, pg. 20.

Full-service or self-service? The efficiency with which a particular server architecture manages interactions should be a key consideration of the DBMS buyer. Jojo Anonuevo. Aug 89, pg. 27.

They went data way. Reader survey reveals that data base management comes in all forms. Robin Perry. Aug 89, pg. 34.

Sonoma County traffic report. Aug 89, pg. 34.

Healthy customer list invigorating for Life Fitness. Aug 89, pg. 37.

Building blocks for design. Armed with a few basic principles and the right development system, many people can implement their own solutions for managing office information. Sue Dintelman. Aug 89, pg. 40.

Go fourth and multiply. Normalized data bases discussed in plain English. Kim L. Medlin. Nov 89, pg. 56.

Data General corporate information

Recent changes in corporate structure. Jun 89, pg. 74; Aug 89, pg. 68.

Marketing with muscle. DG's new vice president of marketing shares his views on customer satisfaction, cradle-to-grave responsibility, and DG's recent reorganization. Oct 89, pg. 46.

Data General marketing strategies

Developing computer market unifies vast territories. Mar 89, pg. 26.

Companies that succeed must do business across borders. Mar 89, pg. 37.

Peaceful coexistence. DG's choices lead to industry standards. Apr 89, pg. 24.

What's hot, what's not. Keeping up with current trends. Greg Farman. Apr 89, pg. 25.

How'm I doin'? We asked the experts what they think of DG, and here are their answers. Jul 89, pg. 12.

Which is better, Data General or DEC? It depends . . . Michael E. Marotta. Jul 89, pg. 20.

Data base update. Data General's strategy for data base management is highlighted in an interview with Mike Normile. Aug 89, pg. 20.

Marketing with muscle. DG's new vice president of marketing shares his views on customer satisfaction, cradle-to-grave responsibility, and DG's recent reorganization. Oct 89, pg. 46.

Asparagus tips, anyone? Alliance with Nippon Telegraph & Telephone has yet to produce. Robin Perry. Dec 89. pg. 14.

Field of dreams. The Open Software Foundation, a congregation of 165 computer organizations, is creating a vendor-neutral open systems architecture. Data General is among the believers. Seemee Ali. Dec 89, pg. 13.

Don't fence me in. Data General joins different Unix organizations to make sure users get the best of both worlds. Robin Perry. Dec 89, pg. 14.

Strategic loyalties. Headed by a former Data General employee, the Object Management

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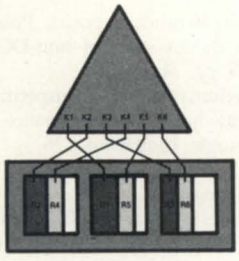

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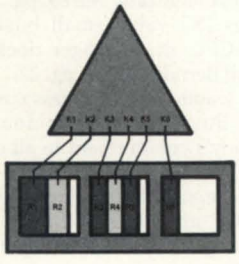

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Group coordinates an industry-wide effort to make systems and software from different companies work together efficiently. Seemee Ali. Dec 89, pg. 15.

Desktop publishing

Many faces for CEO. Office/Publisher lets users create professional-looking documents. Joe Cannata. May 89, pg. 24.

Publishing *Focus*. WordPerfect is the keystone for *Focus'* typesetting and pagination system. May 89, pg. 26.

Electronic mail

Special delivery. A comparison of three AOS/VS E-Mail options. Tom Bishop. Apr 89, pg. 30.

Bridge over muddied waters. CEO's Agent-User-Interface and LU6.2 form a "bridge" for electronic mail between MV and IBM systems. William P. Rawlins. Oct 89, pg. 36.

Fourth generation languages

Generation gap. 4GLs offer savings in programming time—but at what cost? Jim Siegman. Jun 89, pg. 60.

Graphics

The plot thickens. A case of using Trendview to Present a better image. David K. McGowan. Jul 89, pg. 33.

Laptops

Laptop microcomputers. You can take it with you. Jim Teed. Feb 89, pg. 50.

DG/One Model 2T. Improvements make this entry a contender in the laptop sweepstakes. Betsy Zullo. Feb 89, pg. 50.

Legal matters

ADEX on trial. Third party maintainers demand access to DG's diagnostic software. Robin Perry. Feb 89, pg. 74.

Round 1. Data General wins round one of ADEX software fight. Robin Perry. Mar 89, pg. 18.

Writer's cramp. Courts hold that copying the sequence and flow of a program is equivalent to paraphrasing a work of fiction. John Land. Apr 89, pg. 40.

The only constant is change. When buying custom software, be sure your rights to modify it are included in the package. Richard D. Marks. Jun 89, pg. 58.

Management

A world of differences. A Data General OEM does everything right. Michael E. Marotta. Jan 89, pg. 32.

Expert advice. Wise use of consultants is a smart move. Steve Handlos and Liz Straus. Jan 89, pg. 36.

Management's view of disaster recovery. Advice for everybody but the competition. Steve Handlos and Liz Straus. Feb 89, pg. 72.

Your skills are showing. The process of planning for data recovery can showcase your management skills. Steve Handlos and Liz Straus. Mar 89, pg. 69.

Analysis tools. SMAT analyzes user profiles, system log information, and disk space usage. David Bultman, pg. 71.

The poor performer. When an employee's work does not meet company standards, it's up to the manager to assess and eliminate the cause. Steve Handlos and Liz Straus. Oct 89, pg. 56.

Miscellaneous

Short accounts. Small discoveries on a variety of topics. Jim Siegman. May 89, pg. 61.

Networking

Communications you can bank on. Data communications involves more than data transfer to the Federal Reserve. William P. Rawlins. Jan 89, pg. 42.

PC sharing for the mini mindset. PC/Remote delivers the benefits of networking minus the space, money, wiring, and support hassles. Tim Boyer. Oct 89, pg. 70.

OIS

Streamlined. Improved menus eliminate guesswork for DG's On-Line Information Service. George Tuthill and Linda Strenck. May 89, pg. 64.

PCs

Hardware, hard choices. Your decision can limit or expand your options. Brad M. Friedlander. Jun 89, pg. 39.

Power sources

When power corrupts. Hidden effects of minor electrical disturbances can be costly. Aldo Falossi. Oct 89, pg. 76.

Product reviews

Transfer student. A close look at how BLAST, TEX, Softerm, and Smarterm handle file transfers. Tim Boyer. Apr 89, pg. 48.

Office party. New features make WordPerfect's Office a strong OA contender. May 89, pg. 36.

File transfer products. You have a choice of speed, ease-of-use, and price. Tim Boyer. May 89, pg. 42.

One-way ticket. When you move up to ICobol rev 1.50, don't plan on going back. Tim Boyer. Jul 89, pg. 38.

Emulation sensation. Softerm allows custom script writing, transfer between computers. Richard Hankins. Jul 89, pg. 42.

Less is more. The unit looks good, the front panel is efficient, and the footprint is so small that the cables weigh more than the drive. Our reviewer tests the Megatape GT-88 tape drive. Tim Boyer. Aug 89, pg. 65.

Connectivity for the rest of us. At last, Pacerlink provides DG users with terminal emulation and efficient transfer capability with the Macintosh. Greg Farman. Sep 89, pg. 26.

Yes, they do windows. Threshold's Screen Demon provides pull-down menus, pop-up windows, and a lot more. Tim Boyer. Sep 89, pg. 42.

PC sharing for the mini mindset. PC/Remote delivers the benefits of networking minus the space, money, wiring, and support hassles. Tim Boyer. Oct 89, pt. 70.

Programming techniques

PID power. The oft-maligned SMI can be very powerful—and dangerous. Jim Siegman. Feb. 89, pg. 53.

Sorta merged. Converting label data is just one example of SORT/MERGE's usefulness. Jim Siegman. March 89, pg. 51.

You'll get hooked. The art of writing CLI macros is described in a new book from Shalless Software. Jim Siegman. Sep 89, pg. 56.

Sloppy times three. A less than perfect sample program is revised to allow simultaneous copies under AOS/VS. Jim Siegman. Dec. 89, pg. 42.

RDOS

I'd rather switch than fight. From RDOS to AOS/VS: getting more mileage from your mule. Al Takach Hill. Feb 89, pg. 66.

RDOS grows old gracefully. But when it's all over, AOS/VS will join it in the software graveyard. Ira Ellenbogen. Feb 89, pg. 66.

Security

Host busters. You gotta think like 'em to stop 'em. Michael E. Marotta. Jun 89, pg. 28.

Security in the small data center. Don't wait for the coffee maker to trip a circuit (and melt down your system) before implementing some of these practical suggestions. John Coan. Jun 89, pg. 32.

It could happen. A fire in your data center would spoil an otherwise perfect Saturday. John Coan. Jul 89, pg. 29.

Entrance exam. A director of computing services is instructed to provide modem access for faculty members. How does he keep students from beating the system? Charles L. Busch. Oct 89, pg. 42.

Service and support

Almost too good to be true. Only a fool wouldn't love these new policies for software support. Jim Siegman. Apr 89, pg. 65.

At your service. Survey shows most are pleased with maintenance and repair. June 89, pg. 19

When it rains, it pours. Policy turnabout results in coverage of non-DG peripherals. June 89, pg. 24.

Freedom of choice. Competition from independents has improved service for all. David McMonigle. June 89, pg. 26.

Small business

Soft sell. Lansing's small businesses like DG performance but where are the salesmen? Michael E. Marotta. Feb 89, pg. 22.

Does DG value small businesses? One single-CPU site manager doesn't think so. Randall Berndt. Feb 89, pg. 27.

DG wants small business customers. Software Business Unit manager affirms company's commitment to all of its customers. Feb 89, pg. 30.

Get the small things right. Developing software for small business takes care. Kim L. Medlin and Doleen Wilbur. Feb 89, pg. 34.

Storage devices

In New Zealand: Optical technology cuts response time. Mar 89, pg. 35.

A tale of woe. Backups, a bug fix, and software support. Jim Siegman, Jul 89, pg. 52.

Some tape is reel attractive—even magnetic. The author continues a discussion on backups by looking at various off-line storage devices available for use with DG systems. Jim Siegman. Aug 89, pg. 61.

System concepts

One buffer leads to another. With this advice, you'll soon be multi-buffering. Michael Dupras. Jun 89, pg. 62.

Life with the buffers. Queuing up for a great performance. Michael Dupras. Jul 89, pg. 56.

Do you speak my language? Secret decoder rings, encryption engines, or plain data transformation: there are ways to streamline the process of translating character sets. Michael Dupras. Aug 89, pg. 54.

Beauty is more than screen deep. What happens inside a program can affect a user's perception. Michael Dupras. Sep 89, pg. 62.

Good connections. IPCs can be used to let programs communicate over a network. Michael Dupras. Oct 89, pg. 80.

Communicating with FTA. How to send a file from one computer to another using DG's Xodiac network. Michael Dupras. Nov 89, pg. 66.

Wait here for instructions. When certain applications became too time-consuming, special purpose instruction sets were invented. Michael Dupras. Dec. '89, pg. 28.

System management

Election year. It's not over yet. You still have to decide between AOS/VS and AOS/VS II. Brian Johnson. Jan 89, pg. 20.

XLPT revisited. New version, same old wrap. Brian Johnson. Feb 89, pg. 60.

Help. Interpreting the arcane switches for the CHARACTERISTICS command. Brian Johnson. Mar 89, pg. 56.

Cooking school. A pinch of this and a handful of that. Brian Johnson. Apr 89, pg. 68.

If it ain't broke, don't fix it. Diagnosing SEPAC's priority scheme. Brian Johnson. May 89, pg. 52.

SPEED freak. Cosmic macros await. Brian Johnson. Jun 89, pg. 50.

How to spot a good engineer. And how to keep one once you find one. Brian Johnson. Jul 89, pg. 44.

A good mystery for summer reading. An MV/10000 running benchmarks gets "turned on" at certain speeds. If you like to play detective, see if you can figure out why. Brian Johnson. Aug 89, pg. 56.

Why so slow? BJ tackles several topics, including an analysis of AOS/VS II and the answer to last month's mystery. Brian Johnson. Sep 89, pg. 48.

At what cost? AOS/VS II tuning offers hope for improvement in disk I/O, but increase in CPU consumption is here to stay. Brian Johnson. Oct 89, pg. 94.

How big is enough? Conflicting goals make it difficult to choose the optimal element size. Brian Johnson. Nov 89, pg. 36.

You got it! New Orleans yielded good food, bad sleaze, and surprising receptivity from Data General. Brian Johnson. Dec '89, pg. 20.

System management interface

PID power. The oft-maligned SMI can be very powerful—and very dangerous. Jim Siegman. Feb 89, pg. 53.

Unix

Scoring DG's Unix strategy. Industry analyst gives "thumbs up" to DG/UX. Judith S. Hurwitz. Feb 89, pg. 40.

Creating an environment. How to customize directories for new Unix users. John Huddleston. Feb 89, pg. 46.

Aviion arrives. RISC workstation, server, DG/UX 4.1 debut at Uniforum. Greg Farman. Apr 89, pg. 12.

Unix-to-Unix. Understanding system administration for UUCP. John Huddleston. Apr 89, pg. 38.

Uniforum reveals DG's commitment to Unix and industry standards. May 89, pg. 8.

The view from San Diego. USENIX conference helped show DG's place in the Unix picture. Don Dewar. May 89, pg. 12.

Making the rounds. Aviion systems get jump on competition. Robin Perry. Jun 89, pg. 12.

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Gen and jive. UUCP allows machines running Unix to communicate. John Huddleston. Jul 89, pg. 27.

Text formatting shortcuts. Nroff tool creates attractive output in Unix. John Huddleston. Sep 89, pg. 32.

Warming up to Unix. If you've been giving Unix the cold shoulder, consider the following redeeming qualities. Don Dewar. Oct 89, pg. 32.

Odd couple. Under MV/UX, AOS/VS is the constraining factor in all Unix system calls. John Huddleston. Nov 89, pg. 44.

Unix products hardly uniform. Uniforum exhibits show that beyond common standards and software, Unix implementations have healthy differences. Don Dewar. Dec. 89, pg. 8.

User group news—conferences

New Orleans preview. Getting ready for Conference '89; RIG/SIG committee to offer workshop. Cathlene Gentry. May 89, pg. 8.

See you in September. Fill out your reports, make your reservations—Conference '89 is just around the corner. Cathlene Gentry. Aug 89, pg. 8.

Conference '89—it was a very good year. Nov 89, pg. 6.

News from New Orleans. DG responds to user concerns. Jones, Perry assume office. Patricia Seybold on open systems. Tom West on MIPS. Nov 89, pg. 46.

User group news—NADGUG activities

News from NADGUG and its affiliates. Cathlene Gentry. Jan 89, pg. 11; Feb 89, pg. 6.

I have my reasons. We know at least 31 reasons to join NADGUG—can you help us name more? Cathlene Gentry. Apr 89, pg. 4.

Speakers bureau, newsletter exchange. NADGUG offers new ways to spread information about RIGs, SIGs, and Data General. Cathlene Gentry. Jul 89, pg. 8.

User group news—RIGs, SIGs, and other groups

News from NADGUG and its affiliates. Cathlene Gentry. Jan 89, pg. 11; Feb 89, pg. 6.

Use *Focus* to improve your image. Cathlene Gentry. Mar 89, pg. 6.

U.K. group reaches out to smaller users, other European countries. Mar 89, pg. 49.

Start up down under. Australian users attempt formal organization. Cathlene Gentry. Apr 89, pg. 4.

New Orleans preview. Getting ready for Conference '89; RIG/SIG committee to offer workshop. Cathlene Gentry. May 89, pg. 8.

In Indiana and Texas. Two new RIGs get going. Cathlene Gentry. Jun 89, pg. 8.

Speakers bureau, newsletter exchange. NADGUG offers new ways to spread information about RIGs, SIGs, and Data General. Cathlene Gentry. Jul 89, pg. 8.

Learn the RIG/SIG secrets. Conference workshop will benefit your organization—and it's free. Cathlene Gentry. Sep 89, pg. 6.

I speak, therefore . . . . Recruitment drive reaps new speakers for interest groups. Cathlene Gentry. Oct 89, pg. 12.

Staying alive. A survival kit for RIGs and SIGs. Cathlene Gentry. Nov 89, pg. 8.

RIG/SIG Committee plans national tour. Membership drive begins. Cathlene Gentry. Dec. 89, pg. 6.

User interface

Radical enhancements to computing. New user interfaces rely on sound and graphics. Michael E. Marotta. Apr 89, pg. 19.

User-centered computing. DAA is the umbrella concept Data General is using as it works toward the goal of giving users utility-like access to computing power. This article gives a high-level overview of the approach and its benefits. Chris Stone and Michael Cromer. Aug 89, pg. 12.

Object management and user interface. DG rushes to catch up with the current wave of technology by improving the look of the screen and tuning up the software. Sep 89, pg. 8.

Getting the most out of user interface. User interface programs vary in their degrees of functionality, flexibility, and ease of use. The author explains what to look for in a user-

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friendly system. Daryl Hunt. Sep 89, pg. 16.

Winning the shell game. Customize WordPerfect's shell menu for simple, error-free use of the CLI. Kent Finkle. Sep 89, pg. 22.

Value added resellers

Leaps and bounds. An interview with Tyce McIntosh, president of the VAR Council. Nov 89, pg. 24.

A marriage made in Westboro. Nov 89, pg. 28.

Data General keeps moving ahead. (Reprinted from *VARBusiness*) Elaine Kingoff. Nov 89, pg. 30.

The rise of the VAR. The software revolution has made VARs indispensable to both the hardware vendors and their clients. Jim Siegman. Nov 89, pg. 32.

VARs in space? Cooperative Marketing status lets VAR reach new territory. Seemee Ali. Nov 89, pg. 35.

Wordperfect

A chip off the Wordperfect block. Educated use of this valuable tool increases productivity. Steven L. Weitzeil. Feb 89, pg. 38.

Macro-Aid for Wordperfect. New editor simplifies revision of even the most monstrous macro. Thane Perkins. Mar 89, pg. 66.

Publishing *Focus*. Wordperfect is the keystone for *Focus*' typesetting and pagination system. May 89, pg. 26.

Office party. New features make Wordperfect's Office a strong OA contender. May 89, pg. 36

Under Wordperfect's Spell. Spell-check ensures accuracy of documents—and make crossword puzzles a breeze. Guy Pribyl. May 89, pg. 66.

Winning the shell game. Customize Wordperfect's shell menu for simple, error-free use of the CLI. Kent Finkle. Sep 89, pg. 22.

Workstations

Platform scale. LAN products for DG workstations weigh heavily in users' favor. Doug Kaye. Jan 89, pg. 50.

Network Operating Systems. Specialized control programs provide file service for PC clients. Doug Kaye. Feb 89, pg. 48.

Off the charts. Optimum use of workstations requires file distribution strategy. Doug Kaye. Mar 89, pg. 72.

Hot links. Termserver, ITC tame terminal connection nightmares. Doug Kaye. May 89, pg. 44.

Testing the waters. New products, new choices, new terminology confront workstation users. Brad M. Friedlander. May 89, pg. 28.

Under the ethernet. ITCs bring DG terminal connection to the state of the art. Doug Kaye. Jun 89, pg. 55.

The secret's out. Combining forces, Rational Data Systems, Novell, and Data General introduce a LAN operating system that can be ported to various host environments. Doug Kaye. Oct 89, pg. 60.

Minis vs. micros. An uneasy truce exists in the battle between PCs and minicomputers. Doug Kaye. Nov 89, pg. 63.

Moving to the homogeneous environment. Don't be overwhelmed by the speed of change in the workstation marketplace. With foresight, you can make current trends work to your advantage. Doug Kaye. Dec. 89, pg. 40.

1989 index to Focus Magazine, products and services

Advanced Medical Data Systems

AMDS announces Unix-based medical practice software. Nov 89, pg. 78.

Applied Computer Solutions

Applied Computer Solutions brings Sneakernet to DG. Aug 89, pg. 73.

Applied Concepts, Inc.

Fiber optic modem available for SCSI users. Dec 89, pg. 64.

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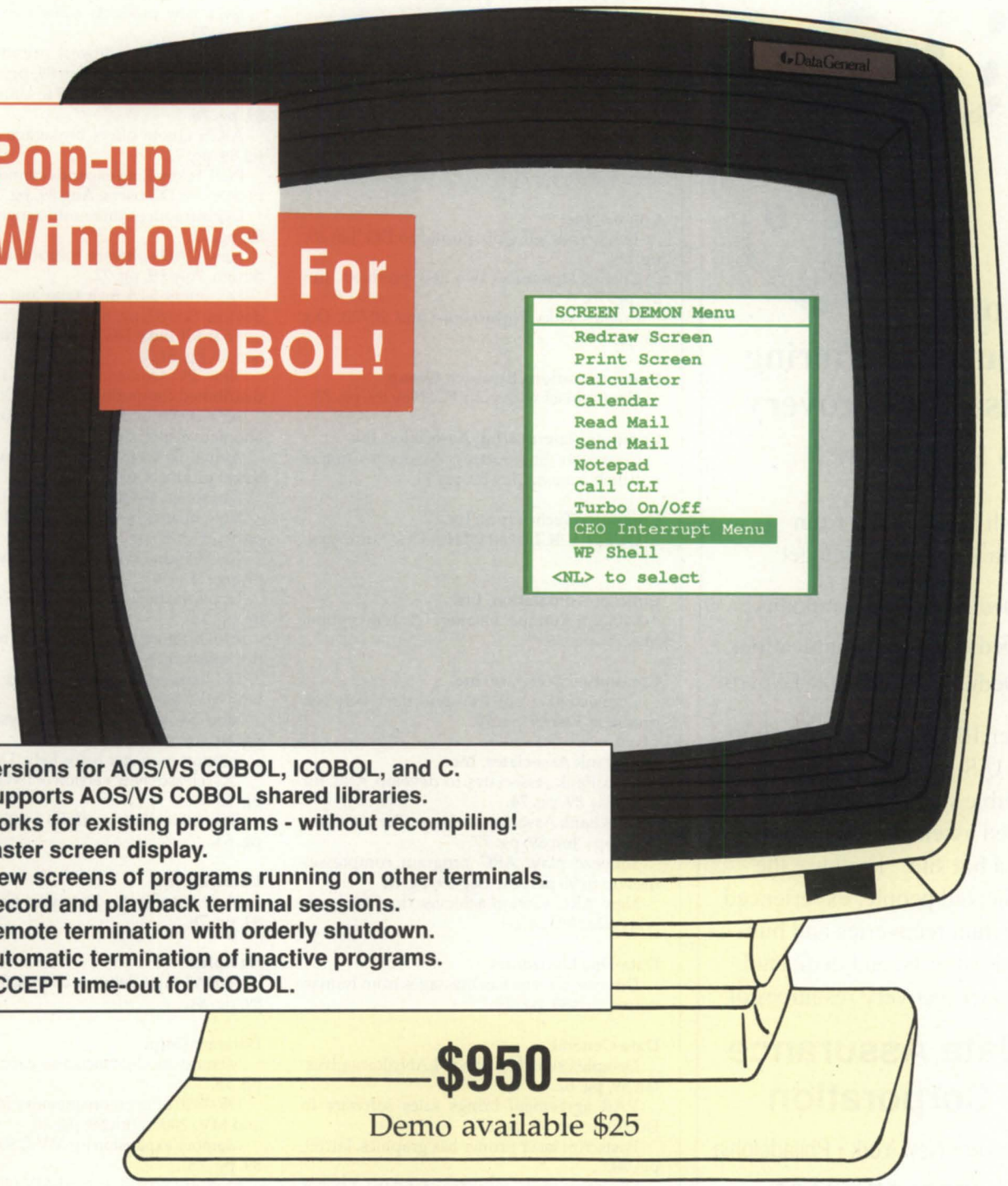

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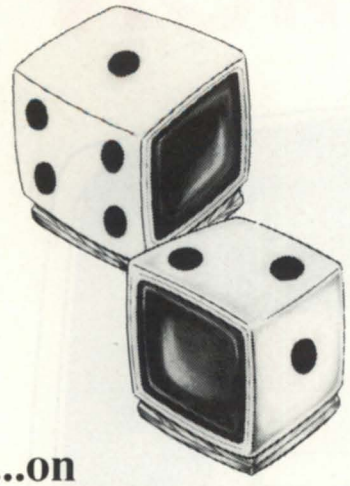

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1989 INDEX

Bac-Tech Systems, Inc.
Borroware for lenders. Nov 89, pg. 76.
Dressy software. Nov 89, pg. 77.
Bac-Tech updates personnel management software. Dec 89, pg. 64.

BDMP Statistical Software
CA and 5V present new methods for data analysis. Sep 89, pg. 82.

Best Power Technology
Sensaphone alarms users of computer problems. Jan 89, pg. 71.

Cognos, Inc.
Teach Yourself Quiz ported to DG. Jan 89, pg. 68.
Cognos announces two new products. Jun 89, pg. 76.
Cognos links Powerhouse and 20/20. Oct 89, pg. 104.

Communications Research Group
Have a blast with your PC. Nov 89, pg. 78.

Computer Engineering Associates, Inc.
Computer Engineering Associates enters hotsite business. May 89, pg. 71.

Computer Techniques, Inc.
QUEO_V 4GL available for DG. Aug 89, pg. 75.

Concept Automation, Inc.
Concept Automation offers CEO encryption. May 89, pg. 76.

Conceptual Software, Inc.
Connectivity tool transfers data between products. Feb 89, pg. 79.

Data Bank Associates, Inc.
Data Bank Associates to develop ARC for DG. May 89, pg. 74.
Data Bank Associates releases Turbotran for Desktops. Jun 89, pg. 77.
Squeeze play. ARC program compresses files up to 90 percent. Sep 89, pg. 84.
New ARC version achieves dual compatibility. Dec 89, pg. 65.

Data-Doc Electronics
Director screens Fax messages from human voices. Feb 89, pg. 79.

Data General
Dataplex switch expands LAN alternatives. Jan 89, pg. 67.
VAR agreement brings sales software to DG/One. Jan 89, pg. 67.
Postscript laser printer has graphics. Jan 89, pg. 70.
DG introduces industry-standard Dasher /386 Unix. Mar 89, pg. 83.
DG offers 727 MB Winchester subsystem. Mar 89, pg. 83.
DG and TLD Systems offer Ada/1750A. Mar 89, pg. 86.
New DG/OSI products part of strategic triad. Apr 89, pg. 78.
DG announces ESP analysis tool. Apr 89, pg. 79
Two new terminal server products expand options. May 89, pg. 71.
High availability uninterruptible power supplies new from DG. May 89, pg. 78.
DG's new products allow easy access. Jun 89, pg. 75.
MV/1000 DC is lowest priced member of MV family computers. Jun 89, pg. 81.
DG adds Dasher/386-25 to Unix family. Jun 89, pg. 76.
ARTS Quote offers brokerage automation. Jul 89, pg. 72.
PC*I Token Ring expands connection opportunities for DG users. Aug 89, pg. 71.
DG introduces three mid-range minis. Aug 89, pg. 71.
New CAD software solution aids highway design. Aug 89, pg. 72.
DG offers 5.25 inch tape and disk storage devices. Sep 89, pg. 81.
Tool Kit links DG with Motorola and Intel. Sep 89, pg. 81.
New PC workstations from DG promote distributed computing strategy. Oct 89, pg. 101.
AVX-30 X-Window display station marks the alternative spot. Oct 89, pg. 102.
Aviion Software Services to support RISC-based products. Oct 89, pg. 103.
Revisions, revisions . . . . Oct 89, pg. 104.
New boards double MV/7800 memory capacity. Oct 89, pg. 107.
CEO Object Office launches new wave. Nov 89, pg. 74.
Hypermedia hangs ten on DG's wave. Nov 89, pg. 76.
AMDS announces Unix-based medical practice software. Nov 89, pg. 78.
DG looks to Eclipse mid-range competition with MV/1800. Dec 89, pg. 60.
More for less on RAMS subsystem. Dec 89, pg. 60.
Support manager helps help. Dec 89, pg. 63.
DG releases new version of INGRES. Dec 89, pg. 65
DG networking portfolio available. Dec 89, pg. 63.

Datalynx, Inc.
More security for Datalynx' Guardian. Apr 89, pg. 78

Dataplus
5600AS tape delivers compact storage. Sep 89, pg. 84.

Dataram Corp.
Memory module increases capacity. May 89, pg. 75.
DR-1420 offers more memory for MV/1400s and MV/2000s. Jun 89, pg. 80.
Memory expansion for MV/7800 series. Aug 89, pg. 75.
Memory boards extend MV/4000 life. Nov 89, pg. 79.

Delphi Data
Delphi Data announces generic SCSI disk cache controller. May 89, pg. 78.

Digital Dynamics, Inc.
D:drive allows MVs to drive PCs. Aug 89, pg. 72.

DMS Systems, Inc.
NIDS/Genisys Connection to aid users of NIDSPORT management system. Jul 89, pg. 75.

Eagle Software, Inc.
Eagle Software releases Disk View. Jul 89, pg. 72.
Eagle SW launches PCOPY_PAL. Aug 89, pg. 73.

Fast Track Systems, Inc.
Fast Track announces electronic vaulting service for LANs, PCs. Feb 89, pg. 76.
Fast Track Systems named DG/hot site. Feb 89, pg. 78.
Fast Track acquires Sysgen contracts. May 89, pg. 78.

Flying Point Software
@Con/PC provides terminal emulation, file transfer on IBM and compatibles. Jul 89, pg. 68.
DG terminal emulation available for OS/2. Nov 89, pg. 78.

Indocomp Systems, Inc.
IS-4210 storage subsystem increases disk capacity. May 89, pg. 74.

Infodex
Infodex has Resource ICobol decompiler. Apr 89, pg. 80.

Innovative Computer Tools, Inc.
Patented screwdriver won't slip. Mar 89, pg. 86.

Integrated Applications, Inc.
Instant Replay trains DG users. Jan 89, pg. 68.

Intercon Associates, Inc.
Fonts cheaper by the dozen. Dec 89, pg. 64.

Interface Electronics, Inc.
Interface releases Prism multiplexor. Aug. 89, pg. 75.

Ironwood Computer
Ironwood offers ZIM conversion utility. Jul 89, pg. 72.

Logical Solutions, Inc.
Logical Solutions introduces HVAC business management. Feb 89, pg. 79.

Mainstreet Software, Inc.
Mainstreet offers full-text DBMS. Aug 89, pg. 72.

Memory Makers
Memory Makers' panic button for tense situations. Feb 89, pg. 80.

Micro Focus, Inc.
Micro Focus Cobol/2 compatible with DG ICobol. Jan 89, pg. 68.

Nanosecond Systems, Inc.
REM-RDOS emulator available for IBM-PCs and compatibles. Oct 89, pg. 107.

National Investor Data Services
Multi-currency accounting system offered by DG VAR. Jan 89, pg. 71.

Oracle Corp.
Oracle releases additional products for AOS/VS. Nov 89, pg. 77.

Pacer Software, Inc.
Pacer Software links DG to Macintosh. Feb 89, pg. 76.
Pacer provides connectivity for DG/Macintosh users. Jul 89, pg. 75.

Penta Systems International
Penta's Textmaster based on PCs. Jan 89, pg. 72.

Persoft, Inc.
Smarterm 470 emulates DG graphics and

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terminals on PCs. Sep 89, pg. 83.

Rational Data Systems
Rational Data Systems signs NE distributor. Apr 89, pg. 80.
RDS adds to its PC integration products. May 89, pg. 71
RDS to implement Netware on AOS/VS. Jul 89, pg. 68.

Rhintek, Inc.
EMU/470 provides color graphics emulation. May 89, pg. 75

Ryan-McFarland Corp.
Ryan McFarland's RM/Cobol-85 enhancements offer DG compatibility. Jul 89, pg. 74.

SAS Institute, Inc.
SAS releases SAS/Assist software. Jan 89, pg. 73.
SAS announces new releases for DG. Jun 89, pg. 81

S & T Depot Express
Service depot for DG opens in Colorado. Feb 89, pg. 78.

SCIP
SCIP announces XTCB distribution box. Jun 89, pg. 78.

Signal Computer Products, Inc.
Signal offers DG/500 tape subsystems. May 89, pg. 76.
Signal offers removable disk storage system. Sep 89, pg. 83.

Software Management
Compiler creates DG-compatible programs. Jun 89, pg. 78.

SYSTAT, Inc.
SYSTAT, Inc. available on DG minicomputers. Jun 89, pg. 79.

The Technology and Services Group, Inc.
Grass for the Aviion. Nov 89, pg. 79.

3CI, Inc.
3CI, Inc. releases new version for InFoCen management system. Jul 89, pg. 74.
New software provides legal data base. Sep 89, pg. 81.
3CI releases new version of InFoCen. Sep 89, pg. 82.

Threshold
Threshold announces Screen Demon 2.0. Apr 89, pg. 79.
Threshold product simplifies conversion to ICobol 1.50. Jul 89, pg. 75.
WHO_LOCKED_IT? (The burning question answered). Oct 89, pg. 107.

TLC Systems
TLC Express links PCs to mainframes. Jan 89, pg. 70.

Touchbase Systems, Inc.
Portable fax/modem fits in pocket. May 89, pg. 79.

Western Automation
Western Automation buys Spectra Logic. Mar 89, pg. 83.

Western DataCom
Datacom makes V.32 modems at under $1,000. Feb 89, pg. 80.

Wild Hare Computer Systems, Inc.
DG Dasher/386 gets full ICobol abilities. May 89, pg. 82.
Wild Hare and ICobol jump to Aviion. Dec 89, pg. 60.

Wordperfect Corp.
Wordperfect Office 2.0 replaces Wordperfect Library 1.1. Sep 89, pg. 83.

Zetaco
New tape storage products from Zetaco. Sep 89, pg. 81.
Zetaco releases "screaming" new disk/tape subsystems. Nov 89, pg. 78. Δ

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A complete listing of the NADGUG software library

ACK • ACK is a terminal emulator/file transfer program for both AOS/VS and AOS machines. 432 blocks.

Big Brother • Automatic log-off program written in Fortran 77. Donated by the U.S. Forest Service. 181 blocks.

B.J.'s BBS contributions • This addition to the library consists of about 20 items, including various programs, documentation, and macros. Some of the more interesting items include the :SYSMGR benchmark suite, a continuous incremental backup, a clean-up file maintenance program, a program to find strings in files, and a type-backward program. 5,749 blocks.

Black Jack • Kim Medlin of Data General presented this at the Las Vegas conference. 15,079 blocks.

CRTEDIT • This is the old RDOS screen editor ported over to VS. 51 blocks.

DBCHECK • This program checks the open status of an Infos file and examines the checkpointing status of a file. 230 blocks.

DUMPLOAD • DUMPLOAD is a Macintosh program to dump and load AOS/VS-compatible dumps on a Macintosh. 140 blocks.

ERP • A process-termination program developed by NASA and modified by Manville. In Fortran 77. 338 blocks.

FCOPY2 • Submitted by Jim Siegman, this utility makes two copies of a file at once.

FILEMNGR • With this new version, you can move, copy, delete, view, and perform several other options faster. This is distributed as shareware. If you try it and continue to use it, you are requested to pay a registration fee. From Kim Geiger. 459 blocks.

FTNCVT • This is a Fortran 5 to Fortran 77 translator. 287 blocks.

Games • Games is a collection from various places. A new version of Conquest has been added as of April '89. 19,516 blocks.

Glossary • Glossary is a program from John Grant that builds a list of words used in a document and shows where they are used. 416 blocks.

IMSLUTIL • This is a collection of CLI macros, Cobol routines, and assembly routines callable from Cobol. By IMSL of Houston. 6,154 blocks.

JAG_UTIL • JAG_UTIL consists of several programs: Filecount, Userspace, Scan, and Laminate. 1,501 blocks.

Kermit • Kermit is a file-transfer protocol developed at Columbia University. Uses 9,328 blocks.

Logout • Another auto log-out system. 246 blocks.

Look • Look is used to view text files. It allows you to move forward and backward in a file. This program was donated by Data General. 438 blocks.

Macros • This is a collection of macros from various sources. 452 blocks.

MENUDIR • This is an initial user menu that can chain to other applications. Itfeatures a password-control system. From the Fed SIG. 492 blocks.

Misc Kerm • An expanded version of AOS Kerm, this now includes other versions of Kermit including DG/One Kermit. 6,298 blocks.

Notify and Prior • Two contributions from Concept Automation. Notify tells you when a process has terminated. Prior lists the priorities of processes. 273 blocks.

QHelp • QHelp is a tree-structured help facility. 2,277 blocks.

RDOS Kermit • Now available. You must request the Kermit tape (rather than the library tape) to get RDOS Kermit.

SKLSCRN • This is the Cobol standard entry screen featured in George Burns' article that appeared in the April 1988 issue of *Focus*. 385 blocks.

Softrans • This is a file-transfer protocol written in Fortran 77. It's used to communicate with proprietary PC communications packages. 496 blocks.

Spell • Can check the spelling of a word or spell-check a document. Submitted by Richard Kouzes. 5,163 blocks.

SWITCHES • This is the GET.SWITCHES routine from John Grant's column in *Focus*. 1,297 blocks.

TEX • Version 2.26a is now available. TEX (Terminal Emulator with Xmodem) is a terminal-emulation program written by David Down. He has revised the TEX software to include a command language. TEX is being distributed as shareware. At the end of 30 days, either remove it from your system or send the author a $45 fee. 495 blocks.

VT100KER • VT100KER is the VT100 emulator from John Grant. 1,135 blocks.

Xfer • Xfer is a tape-conversion utility. 653 blocks. Δ

All NADGUG members interested in receiving the NADGUG software collection should send a 1,200-foot tape to:
Randy Berndt, Building 4, Suite 321, 5300 North Braeswood, Houston, Texas 77096

MV/2000 and MV/1400 users should send one formatted, error-free tape cartridge. Software contributions should be sent to the same address. Be sure to include your membership number. Allow 4-6 weeks for delivery.

People with AOS/VS rev 6 should send a 2,400-foot tape and specifically request DUMP_II instead of the usual compressed version. The decompression program is rev 7 specific.

Please include a self-addressed envelope with sufficient return postage. In compliance with postal regulations, do not date the postage. Either disable the date printing completely, or set the date to "--" or zeros.

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DG looks to eclipse mid-range competition with MV/18000

The MV/18000 is the latest addition to the Eclipse MV family.

Westboro—The Eclipse MV/18000 series has been introduced as a mid-range competitor to IBM's AS/400, AS/400 B50, and Digital's VAX 6000 models 310 and 410.

Competitive pricing (the MV/18000 Model 1 markets for less than three quarters of the comparable VAX model) and aggressive performance are the features DG hopes will appeal to its VARs and end users who have been requesting multi-processing capabilities at more affordable prices.

The MV/18000 Model 1 presents a cost-per-MIPS reduction of up to 36 percent over the MV/15000S Model 10, according to DG's Vice President of Corporate Marketing Stephen Baxter.

The series is compatible with the rest of the MV family, and supports from 8 to 64 MB of memory in 8, 16, or 32 MB increments. The single-processor MV/18000 Model 1 and the dual-processor Model 2 offer commercial-application (Dhrystone) performance of 4.4 MIPS and 8.5 MIPS, respectively. A single-processor system, the MV/18000 SX, configured with a floating point unit achieves Whetstone performance of 4.6 MIPS.

Cost ranges from $73,000 for the Model 1 base system, comprised of the CPU, 8 MB of memory, I/O controller, memory control unit, chassis, and power supply, to $139,000 for the Model 2 base system (including the same components as Model 1, with 16 MB of memory and an additional processor board). All three Eclipse MV/18000 systems are available immediately from Data General.

Data General Corporation, 3400 Computer Drive, Westboro, MA 01580; 508/898-4074. Δ

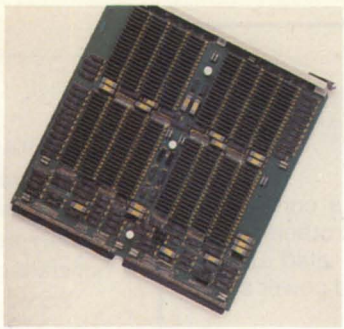
Circle 69 on reader service card.

More for less on RAMS subsystem

Westboro—Complementing its announcement of a new MV family series, Data General introduced a 1.2 GB Rapid Access Mass Storage (RAMS) disk subsystem that increases storage capacity for mid-range and high-end MV family computers at a cost of $23 per megabyte. In addition to its lower cost, this new model offers over twice the storage capacity of DG's existing Model 6581 RAMS subsystem and operates with fewer drives.

Model 6621 provides error checking and correcting storage, scalable in 1.2 GB increments to 9.6 GB. Eight drives can be configured into a meter-high cabinet that

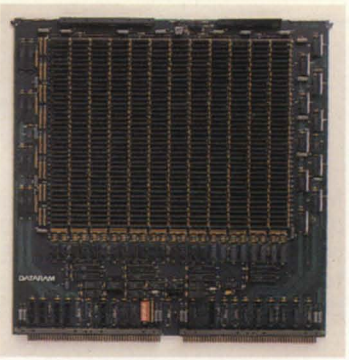
Memory Boards for MV/15000, MV/20000 Computers



Dataram DR-1520 memory comes in 8, 16 or 32MB board capacities. The add-in memory uses 1Mb RAM technology to upgrade processor performance, and does not affect DG service arrangements. Boards are user installable, have Enable/Disable switch and LED indicators. **Dataram Corp. Phone 1-800-822-0071 (NJ 609-799-0071).**

Circle 61 on reader service card.

Now up to 16MB Total Memory for MV/6000, MV/8000, MV/8000 II



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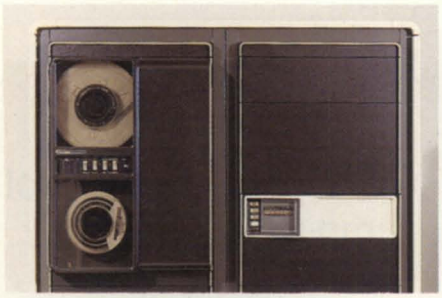

Main Memory Upgrade for MV/4000 and MV/10000

DR-280 series memory offers a choice of 2, 4 or 8 MB of main memory per board. The DR-280 operates with highest reliability DRAM technology and can be installed in minutes — without hardware or software changes. **Dataram Corp. Phone 1-800-822-0071 (NJ 609-799-0071).**

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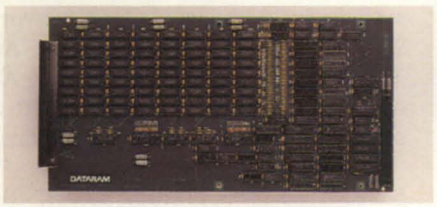

Lifetime Warranty on Memory for MV/1400, MV/2000, DS/7500

High-reliability 1Mb DRAM technology on 4MB and 8MB boards brings low-cost boost to processor performance. Dataram DR-1420 memories plug directly into all three processors, do not affect DG service arrangements. **Dataram Corp. Phone 1-800-822-0071 (NJ 609-799-0071).**

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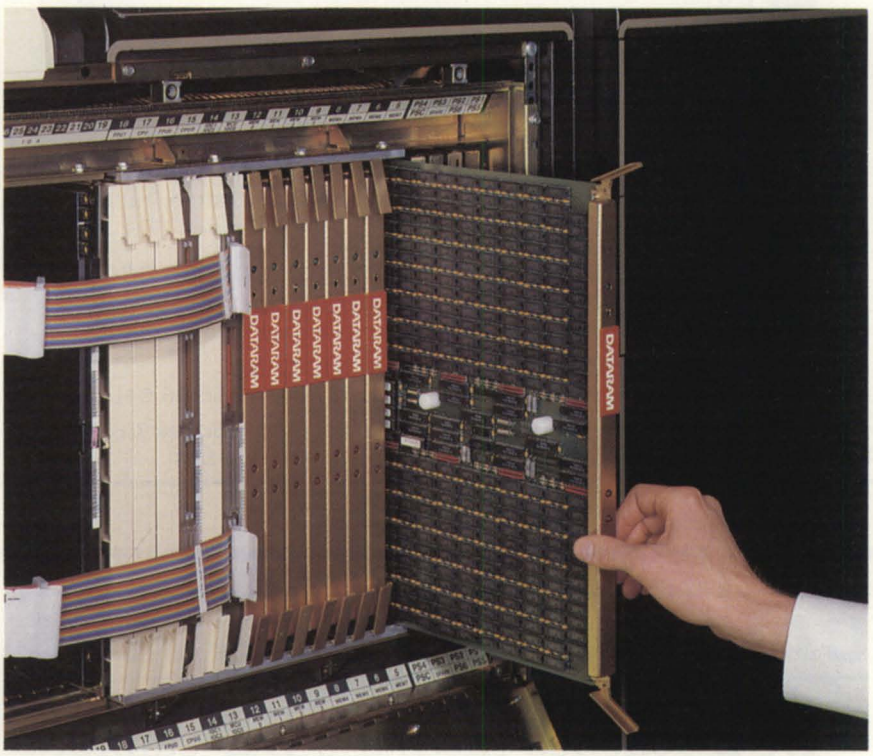
Up to 16MB Extra Main Memory for MV/2500 Series

Dataram's DR-2500 memory boards, available in 8MB and 16MB capacities to improve processor speed and power, are fully compatible with hardware and software for DG's MV/2500. The plug-in memory needs no maintenance, has a lifetime warranty, and is available on a 30-day trial basis. **Dataram Corp. Phone 1-800-822-0071 (NJ 609-799-0071).**

Circle 64 on reader service card.



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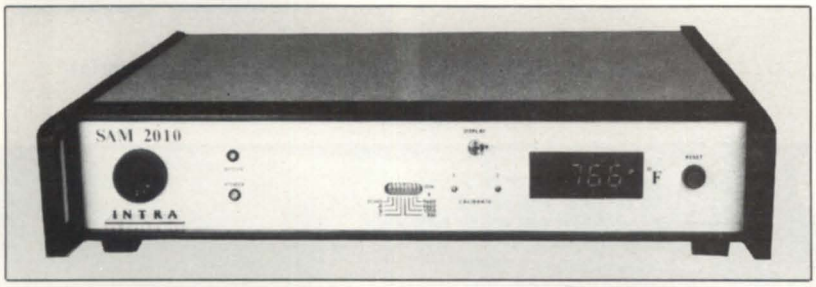

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offers 9.6 GB of high-density storage. "Hot repair" capabilities allow the disk drive to be removed and replaced while the MV family system and other drives are still operating.

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Data General Corporation, 3400 Computer Drive, Westboro, MA 01580; 508/898-4074. Δ

Circle 70 on reader service card.

Wild Hare and ICobol jump to Aviion

Boulder, CO—Wild Hare announced that its Axis Cobol compiler and Choice! Cobol run-time now support DG's Aviion and other Motorola 88000 RISC-based systems, as well as AOS/VS, making it the first company to deliver full ICobol development and run-time capabilities to the Aviion platform, according to Bruce Ray, Wild Hare's president.

Choice! directly runs ICobol programs on computers using a variety of operating systems, including DOS, OS/2, networks, Unix, Xenix, AIX, VAX/VMS, and AOS/VS. Complementing Choice!, the Axis compiler provides these systems with the capability to develop ICobol programs.

Wild Hare Computer Systems, Inc. P.O. Box 3581, Boulder, CO 80307; 303/442-0324, FAX 303/440-7916. Δ

Circle 75 on reader service card.

Support Manager helps help

Westboro—Data General introduced Support Manager, a diagnostic service that provides centralized help desk capabilities. The new software receives and tracks user requests for support, services, and information, and automatically routes service calls from local and remote computer systems to a central location.

VARs and medium- to large-sized organizations are the target market for DG's new product, which is being touted as a

way for organizations to improve service and increase productivity. Users can tailor Support Manager according to the help-desk capabilities they need most to diagnose recurrent problems and improve service response time.

CEO and CEO Light provide the base from which the software sends and acknowledges user requests, and users are automatically notified when a call has been resolved. If calls have not been resolved, Support Manager gives up-to-date information and status reports.

Data General offers Support Manager on a monthly lease basis (60 days after receipt of order), in networked or standalone versions. The standalone version leases for $690 per month; the networked version for $1,150. Phone support and consulting services are also available through DG.

Data General Corporation, 3400 Computer Drive, Westboro MA, 01580; 508/898-4183.

Δ

Circle 71 on reader service card.

DG networking portfolio available

Westboro—Data General customers may now assess their networking needs with the company's new Customnet release, a portfolio of professional networking services and third-party products.

CustomNet's networking functions include support for planning, designing, installing, integrating, and maintenance of networks, and it lists communication products such as bridges, routers, gateways, and modems available through third-party manufacturers. The products listed are tested in a component qualification program to ensure that they are operational on DG equipment.

The five programs that comprise Customnet are available as custom-quote or as consulting services billed on a time-and-expense basis. The first of these, Network Planning and Design Service, takes into consideration factors such as geographic scope, type of building, projected traffic volume, reliability, anticipated growth, security, return on investment, and budget issues.

Cableplant Installation Management Service coordinates and manages site preparation and cable installation. Network Integration Management Service manages the implementation of a local or wide area network, and supervises the integration of all Data General and third-party hardware and software in the network. Third Party Component Qualification Program tests all non-DG network components in a simulated Data General network environment, and then makes them available for sale to Customnet users. Network Maintenance Program contains on-site repair information, telephone software support, and service to approved third-party hardware components.

Data General Corporation, 3400 Computer Drive, Westboro, MA 01580; 508/898-4083.

Δ

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Circle 26 on reader service card.

Fonts cheaper by the dozen

Rochester, NY—Combining all the fonts currently supported by CEO Word Processing and CEOWrite in a single cartridge, the Interfont cartridge from Intercon Associates, Inc., offers budget-conscious CEO users a significant package deal. The cartridge is designed specifically for Data General CEO users, with all the fonts available on the Hewlett Packard D, E, G, H, J, L, and N model cartridges, plus the fonts available on the Canon Elite 12N, Elite 12R, Lineprinter N/R, Garland 10N, and Garland 10R models.

InterFont eliminates the need for cartridge swapping, and works with all Hewlett Packard Laserjet, Canon LBP-I and LBP-II, DG 4557, 4558, 6454, and 6456 model laser printers. The introductory price is $390.

Intercon Associates, Inc. 1 Cambridge Place, 1850 Winton Rd. South, P.O. Box 18099, Rochester, NY 14618; 716/244-1250. Δ

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Circle 23 on reader service card.

Bac-Tech updates personnel management software

New York—Bac-Tech Systems has a new release of its CPMS (Comprehensive Personnel Management System) software running under AOS/VS. Designed for non-technical personnel, CPMS operates in on-line, real-time, multi-user environments and accommodates a range of administrative functions. The software is organized on a modular level (broken into categories of time and attendance, performance rating and evaluation, salary administration and benefits administration) with transactional history resulting as a by-product of data entry.

Bac-Tech Systems, Inc. 270 Lafayette St., New York, NY 10012; 212/334-8288. Δ

Circle 67 on reader service card.

Fiber optic modem available for SCSI interface users

San Diego—A fiber optic modem for machines using Small Computer System Interface (SCSI) is now available through Applied Concepts, Inc. The new product, SCSI Lazer Link II, allows host to host and host to peripheral networking, with a fully defined communications protocol for two to eight nodes.

SCSI Lazer Link II connects directly to standard SCSI interface adapters via the SCSI bus system already in place in most systems. The modem is transparent to the user, and supports 5 MB per second

data transfers over a link distance of 2,000 feet. Fiber optic serial data conforms to the ANSI X3T9.5 coding scheme that is specified in FDDI (Fiber Distributed Data Interface) local area networks.

Each Lazer Link II node costs $795; delivery is stock to 30 days.

Applied Concepts, Inc. 10975 Torreyana Rd., Suite 201, San Diego CA 92121; 619/453-0090. Δ

Circle 66 on reader service card.

New ARC version achieves dual compatibility

Germantown, Md.—Data Bank Associates announced that version 1.30 of ARC now supports unique DG-specific file information while remaining fully compatible with ARC 6.xx on the PC. The new release will automatically produce a corresponding filename for the PC, while supporting both archiving and restoring of Infos data bases.

Further enhancements include printing capabilities directly from the ARC library, indirect input from a file list, and the ability to redirect displayed output to another device or print queue. The new version, ranging from $850 per single CPU system and $1,500 for MV/40000 systems, will be shipped without charge to first-year license holders or those who maintain software support. Quantity discounts are also available.

Data Bank Associates, 20010 Century Blvd., Suite 104, Germantown, MD 20874-1118; 301/540-5562. Δ

Circle 68 on reader service card.

Relational Technology's DG/INGRES Rev 6.20 available

Westboro—Revision 6.20 of DG/INGRES, a fourth generation language tool, is now available through DG and Relational Technology, Inc. Extensive enhancements have been made to the applications-by-forms (ABF) interface, the forms system, and 4GL capabilities, and a 4GL Interpreter has been added as a new feature. The latest revision works with fourth generation language components of Relational Technology's INGRES RDBMS/4GL products, and uses DG/SQL as its underlying relational data base management system.

Rev 6.20 is available 60 days after receipt of order. With DG/SQL, prices range from $8,300 to $97,000 for the development version, and from $2,500 to $30,000 for the runtime version, depending on the MV family platform.

Data General Corporation, 3400 Computer Drive, Westboro, MA 01580; 508/898-4283. Δ

Circle 73 on reader service card.

Circle 10 on reader service card.

AD INDEX

Company	PG#	RS#
Alliance Systems	7	1
Ames Sciences, Inc.	7	2
AOS/VS Workshop	32	59
Bac-Tech Systems Inc.	29	3
Baer	67	-
BASIX Development Group	52	4
BL Associates	1	5
Claflin & Clayton, Inc.	15	6
Coastal Computer Services 58	7	
Compuplan International, Inc.	32	8
Computek Ltd.	63	9
Computer Engineering Associates, Inc.	65	10
Computer Products & Repair, Inc.	C3	11
Computer Systems Remarketing Corp.	60	12
Contemporary Cybernetics Group	27	13
Cybertek Software, Inc.	C2	14
Data Assurance Corporation	56	15
Data Bank Associates, Inc.	7	16
Data Bank Associates, Inc.	43	17
Data General Corporation	46 & 47	-
Data Investors Corporation	53	18
DataPlus	10	19
Dataram Corporation	61	20
Dataram Corporation	61	61
Dataram Corporation	61	62
Dataram Corporation	61	63
Dataram Corporation	61	64
Dataram Corporation	61	65
Delphi Data	57	21
Digital Computer Consulting	67	-
Digital Dynamics, Inc.	31	22
DMS Systems, Inc.	64	23
Eagle Software, Inc.	49	24
Essex Computer Service, Inc.	22 & 23	60
Fast Track Systems, Inc.	37	25
Flying Point Software	63	26
Hanson Data Systems, Inc.	58	27
Indocomp Systems, Inc.	24	28
Infodex	13	29
International Computing Systems	44	30
International Computing Systems	51	31
Interscience Computer Corporation	25	32
MAXON Computer Systems Inc.	5	33
MAXON Computer Systems Inc.	7	34
MegaTape Corporation	17	35
Micro-Mini Company	67	-
Minitab Statistical Software	67	-
NADGUG Bulletin Board	67	-
NPA Systems, Inc.	34 & 35	37
Oracle Corporation	3	38
RAVE Computer Association, Inc.	39	39
Rhintek, Inc.	45	40
Robson & Deakin Ltd.	62	41
Sabra Systems, Inc.	15	42
SAS Institute, Inc.	18	-
SCIP	21	43
Security Computer Sales	54	44
Spectra Logic	9	46
Synergistic Software Company Ltd.	43	47
Sysgen Data Ltd.	29	48
:SYSMGR Bulletin Board	67	-
:SYSMGR, a division of B.J. Inc.	60	49
:SYSMGR, a division of B.J. Inc.	52	50
Technology & Services Group	33	51
3CI	38	52
Threshold, Inc.	55	53
US&T	13	54
Vantage Software, Inc.	62	55
Wild Hare Computer Systems Inc.	41	56
WordPerfect Corporation	11	57
Zetaco	C4	58

PRODUCTS AND SERVICES INDEX

Company	PG#	RS#
Applied Concepts, Inc.	64	66
Bac-Tech Systems Inc.	64	67
Data Bank Associates	65	68
Data General Corporation	60	69
Data General Corporation	60	70
Data General Corporation	62	71
Data General Corporation	63	72
Data General Corporation	65	73
Intercon Associates, Inc.	64	74
Wild Hare Computer Systems	62	75

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(300 or 1200 baud modem)
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OIS (to get an OIS ID and password, contact a DG field engineering telemarketing representative).....**800/325-3065**
In Massachusetts.....**800/952-4300**
In Canada.....**416/823-7830**

NADGUG membership, address changes
Jennifer Foye.....**800/877-4787**
(Outside the U.S.).....**512/345-5316**

Information on RIGs or SIGs
Cathlene Gentry.....**800/877-4787**
(Outside the U.S.).....**512/345-5316**

Editorial questions, comments, article suggestions
Robin Perry
(please send product announcement to the address listed below).....**512/345-5316**

Information about advertising in FOCUS
Sharon Dennis.....**512/345-5316**

Back issues of FOCUS
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Austin, TX 78759

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c/o Turnkey Publishing Inc.
Stillhouse Canyon Office Park
4807 Spicewood Springs Road
Suite 3150
Austin, TX 78759

SMUDGE

No, it's not a typo or a dirty word—it's NADGUG's newest regional interest group, the **S**mokey **M**ountain **U**sers of **D**ata **G**eneral **E**quipment. SMUDGE membership is open to all DG users in Western North Carolina, Upper South Carolina, Eastern Tennessee and surrounding areas.

The group will provide its members with up-to-date information concerning Data General and the issues that confront users of Data General products. SMUDGE meetings will be the ideal place to meet other DG users in the area, and build the sort of support base that can be so helpful when you have a question or problem.

Meetings will be held every other month, and the location will rotate from one state to the next in consideration of the distance some members may have to travel. SMUDGE's next meeting will take place on December 12, 1989 in Asheville, North Carolina.

For more information about
SMUDGE
and its activities, please contact the group's president,
Danny Shook
who can be reached at
Wilcox Travel Agency, Inc.,
704/254-0746.

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In what is some of the best news heard from Westboro in a long time, Data General Executive Vice President **Ron Skates** anticipated "record revenues" for the fourth quarter based on a strong demand for MV/40000 computer systems and initial Aviion shipments. Financial statements for the fourth quarter were not available at deadline for *Focus* publication, but the company predicted revenues of $355 million, with an overall loss of $2.75 a share.

❄

Data General announced in October a company-wide consolidation that could result in the loss of 2,200 jobs. In addition to the laying off of 700 employees, DG is either closing or selling four manufacturing plants. The company will record a related one-time restructuring charge of approximately $80 million.

According to Skates, automation in technology and an increasing use of industry-standard components resulted in less need for plants and people.

Plants to be sold outright are in Portsmouth and Durham, New Hampshire. The Portsmouth MV manufacturing operations are being moved to DG's facility in Apex, North Carolina. The Durham plant will be sold as an on-going research and development operation for computer peripherals.

Employee/management buy out negotiations are underway at a printed circuit board manufacturing plant in Clayton, North Carolina, and at Westbrook, Maine, site of metal fabrication operations.

Wall Street types view the restructuring as a long-term positive. The consolidation will eliminate approximately $95 million in annual costs.

❄

After the selling of four manufacturing sites in the United States, all Data General computers will be manufactured at one of two sites: Apex, North Carolina, and Manila, the Philippines. PCs and portables are manufactured at the Manila plant.

❄

Data General employment at the close of the third quarter was 14,200.

❄

The first publishing and presentation graphics application for Aviion computer systems is under development. **Frame Technology, Inc.,** announced plans to deliver during the first quarter of 1990 its Framemaker publishing package to DG's line of 88000-based workstations. Framemaker on the Aviion will comply with X Window specifications and probably use the OSF/Motif interface.

❄

A marketing spokesperson for Data General reported "pretty good" response to the company's new advertising campaign, which features a bullish attack on competitors' Unix machines. The ads pulled over 550 inquiries during the first five weeks of the campaign, said **Bill Bingham,** advertising assistant. "They're getting attention, and that's what we want."

❄

Unlike most of the machines in DG's MV family of computers that support both AOS/VS and DG/UX operating systems, the new MV/18000 will not support DG /UX. Data General officials are anticipating that Unix customers wanting midrange systems will buy an Aviion system instead.

❄

Ada software developers **Telesoft, Inc.,** of San Diego, and **Software Systems Design** of Claremont, California, have signed independent software vendor (ISV) agreements to port their products to the Aviion family of Data General computers. Ada is the programming language mandated for use by the Department of Defense and defense contractors.

❄

Trinity Computing Systems of Houston will offer three healthcare software solutions on Data General systems under a new ISV agreement. The three products offer nurse scheduling and management, systems integration, and data management for patient reports. The software programs will initially be offered on MV family computers. The systems integration package will be ported to the Aviion family. Data General systems are installed in over 800 hospitals. Δ

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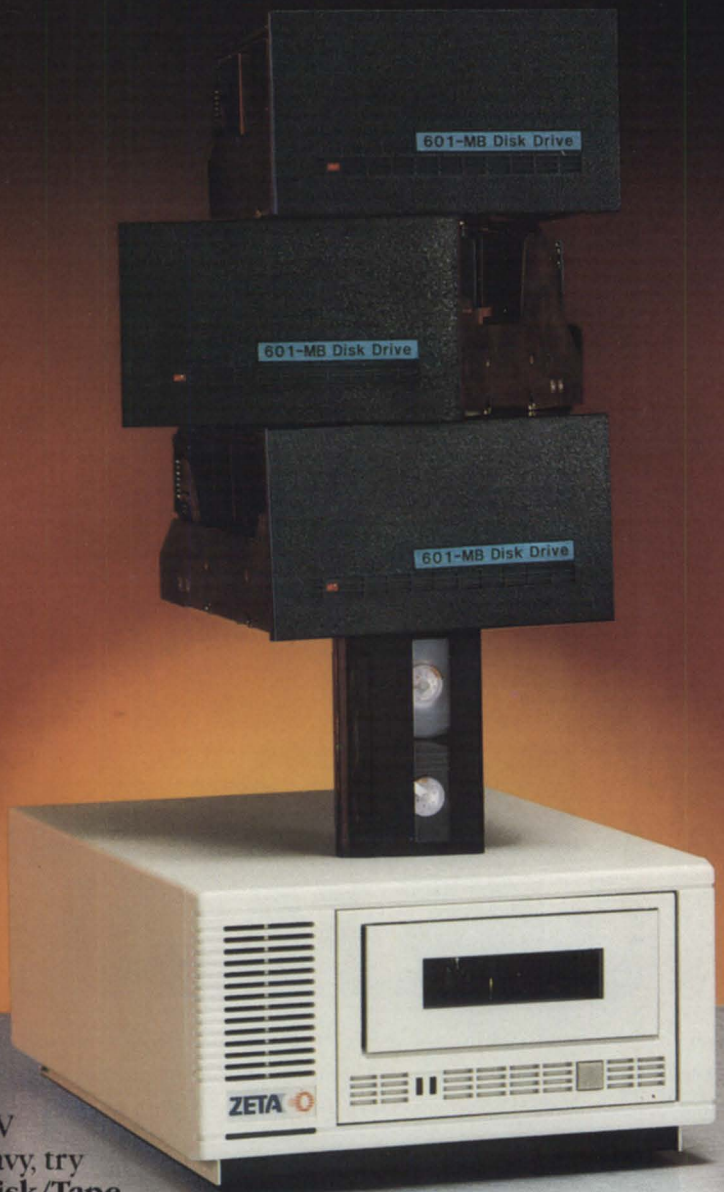

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*In lab tests on an MV/7800, SKM tape sustained streaming performance at 246 *KB/sec* data transfer rate, backing up a 100-MB sequential file from SKM high-performance disks in just 7.5 minutes.

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