

May 1992

FOCUS

The Magazine of the North American Data General Users Group

In Focus

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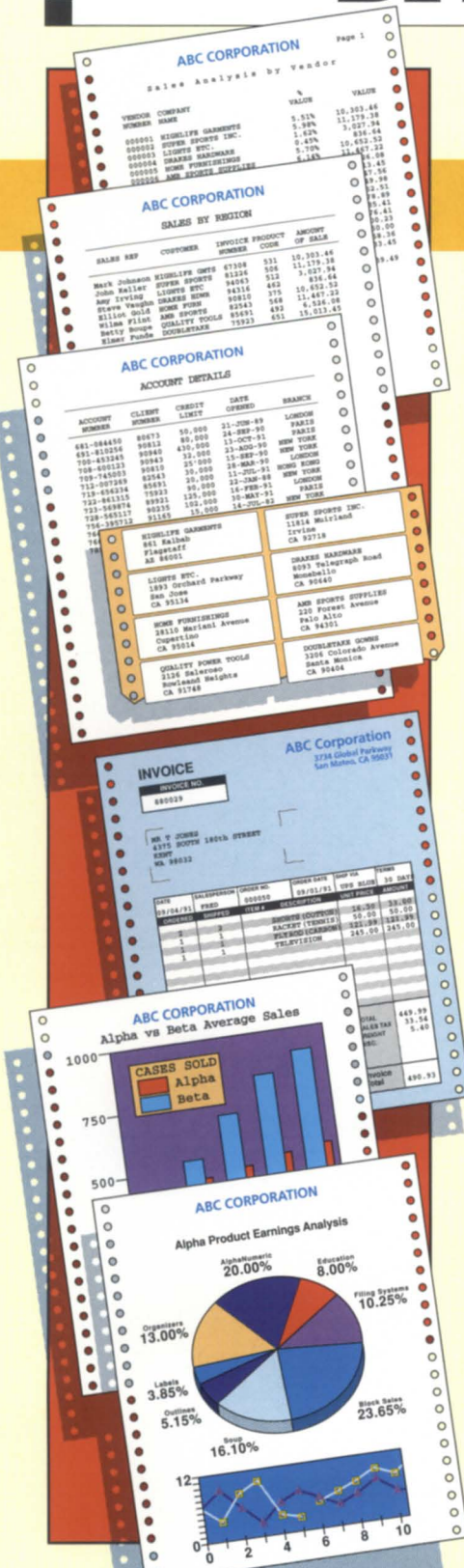
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NORTH AMERICAN
DATA GENERAL
USERS GROUP

Moving right along

by Frank Perry
Planning Committee Chairman

There are quite a few exciting developments going on in NADGUG right now.

Recently, President Dennis Doyle and I were in the England at the annual meeting of the United Kingdom Data General Users Group. It was an exciting gathering reflecting the growth and interest being experienced there by Data General.

The UK conference was held in Birmingham, England, March 5-6. The NADGUG president and past president are invited to attend as part of an ongoing exchange program with the UK Users Group. Two of their members attend our annual meeting. UK President Nigel Ockenden and his group have put together what promises to be an exciting agenda, and Dennis will be telling you more about it in next month's Executive Message.

We are promoting our own NADGUG conference, encouraging everyone to attend NADGUG 92 this October in Kansas City. It promises to be a very exciting time for us. The plans are going well, with more than 70 exhibitors already committed, well ahead of last year. The exhibit will be our largest ever, and as you know, the NADGUG conference hosts the largest exhibit of DG equipment and DG-related hardware, software, and services in the world. Several UK members have indicated their plans to join us in Kansas City, so I encourage you to look them up and make them feel welcome.

Speaking of Kansas City, several weeks ago I took part in the program planning meeting, selecting and scheduling papers for the conference. What a job! We had so many excellent papers to choose from that we were able to fill six concurrent tracks.

The committee is composed of a mix of new and veteran members, and I was impressed by how well it was orga-

nized while considering the concerns and ideas of each of the participants. It includes Brad Friedlander, Ron Branham, Calvin Durden, David Novy, Debra Bedrosian and Gerri Rebello of DG, and Michelle Dube of our NADGUG staff. Of course, Conference Chairperson Jan Grossman sits in to ensure that we all have a general sense of stability and direction.

We are busy preparing for the Spring '92 Board of Governors Meeting (April 3-4), which will be over by the time you read this. The annual budget will be up for approval at that time, and we hope to be able to add more member services to benefit you.

We have made substantial changes to our financial structure during the past year, and the new budget will be the first one developed completely under our new organization. The new fiscal year now requires that we adopt our operating budget during our spring meeting, rather than at the fall meeting. The fiscal year now starts on July 1. *Focus* magazine is now a separate cost center, as are the conference and membership management services, enabling us to better track each of them. This will improve our ability to bring increased membership services in the coming year, including more promotion of and assistance to regional interest groups (RIGs). We also will be trying to offer more support to the various special interest groups (SIGs), particularly in their new efforts to work with DG in improving software products by becoming involved in the request for enhancement (RFE) process. This is one of the most exciting advances we have made during the past year, and we want to keep it moving, as it serves you—our members—as a user group should.

I hope to see all of you in Kansas City this fall! Δ

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Roundtable Roundup

SYNOPSIS

With Data General putting the job of prioritizing requests for enhancements in the hands of users, the ICobol roundtable at NADGUG's annual conference becomes more important than ever. Get involved and have your say.

by Dennis Doyle
NADGUG President

The ICobol roundtable at Denver was held on Tuesday, November 19. As usual for me, it was one of the high spots of the conference. Only here do I get to meet the people who develop and market tools that I use every day to make my living. This is the forum I use to let these developers know what kind of a job I think they are doing, and to submit my suggestions.

We were privileged to have on the panel Cecelia Chen, development manager of the ICobol product family. To begin with, she recapped the past year's accomplishments. ICobol 1.60 for MS-DOS and AOS/VS were released in March 1991; 1.70 for Unix in August; and 1.70 for AOS/VS should be out in the middle of 1992. ICobol 1.70 will include new verbs, such as STRING, UNSTRING, and SEARCH, color and intensity support, READ with TIME-OUT, and new START constructs. The START verb, especially, will fulfill some longstanding wish lists. You will be able to START <, <=, NOT >, FIRST, and LAST.

This reflects the mission of the ICobol group at Research Triangle Park. Their stated goals are to incorporate new features, fix problems promptly, scale ICobol to new hardware, and bring out regular new releases—approximately one per year.

The next revision, ICobol 1.80, is truly an ambitious project. To begin with,

1.80 is scheduled for simultaneous release on all current ICobol platforms. This is in stark contrast to the current practice of releasing on the Aviiion first, followed by AOS/VS a couple of months later, and finally finishing with the MS-DOS release. The simultaneous release is made possible by Data General's commitment to rewriting the code in C.

The big news is that ICobol 1.80 will be ANSI '85 intermediate level compliant. Instead of the odd duck product that we ICobol people have loved and nurtured through the years, we will have an industry standard, open systems product that will run on all of the popular platforms.

The whole line will have pop-up windows and hot key functionality. In addition, there will be a Windows version for 1.80. This will be a single-user version only, with the runtime rewritten as a Window application, and the utilities running under DOS.

By far, the most interesting development promised for 1.80 is for the Unix world. The Distributed ICobol Minisam Server will allow complete, transparent access to the ICobol file server at the application and utility level. A Unix machine would view another Unix machine as a file system to be mounted, and could access any ICobol file across the machines as if it were local. The system would require TCP/IP and NFS, and would be completely transparent to existing applications. All ICobol applications and tools will be able to use the

Continued on page 35

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Downsizing to PC LANs

SYNOPSIS
Why downsize? It's really quite simple: to get a better return on your computing investment. The key is to plan short-term tactical changes as techniques to realize your long-term strategy.

by Doug Kaye
Special to Focus

Sizology

Just to set the record straight, *downsizing* was really last year's buzzword, but the idea that "good things come in small packages" caused such anxiety in the board rooms of most minicomputer companies, they've managed to convince the press to refer to *rightsizing*, a truly horrible word that I promise not to use again in this article.

Back in August of 1990, *Focus* magazine's feature topic was "Upgrades," but as early as 1985 we saw the trend toward smaller, distributed systems for DG users, so my "Workstation" column in that August 1990 *Focus* was entitled, "Downsizing." Now, many *Focus* readers are following this alternative path, and downsizing has earned the right to an issue all its own.

A lot has changed in the past two years, and we've had the opportunity to help many clients develop a *downsizing strategy*. The ability to formalize such a strategy may be the biggest difference in how we approach downsizing today, as compared to two years ago. Let's review some of those recommendations of 1990 in the light of today's technologies and trends.

Why downsize?

The obvious question is, "Why?"

Why should you consider downsizing as a strategy? There's really only one reason: to get a better return on your computing investment. In techno terms, to get more bang for the buck. Computers and desktop devices are replaced every five years or so, and when it comes time to replace your equipment, you need to take a look at what will bring you the best return on that investment.

If you've been running on traditional minicomputers or mainframes for the past five years, you've got some serious evaluating to do. Traditional computers using proprietary architectures offer fewer MIPS per dollar—less bang for the buck—than many alternatives such as PC LANs (local area networks) and Unix-based (so-called "open") systems.

Why PCs?

Although there are other downsizing opportunities, such as Unix workstations and Macintoshes, we're going to concentrate on PCs connected by local area networks as a replacement strategy for minicomputer systems. Consider the economics. We just bought some 80486 motherboards for under \$1,000 each. By the time you read this, that will already be old news. While we were shopping, we found 80286 motherboards for \$98. That's cheaper than the case and power supply. It's unreal. If you want bang for your buck, you won't find anything else that even comes close to PC-based solutions.

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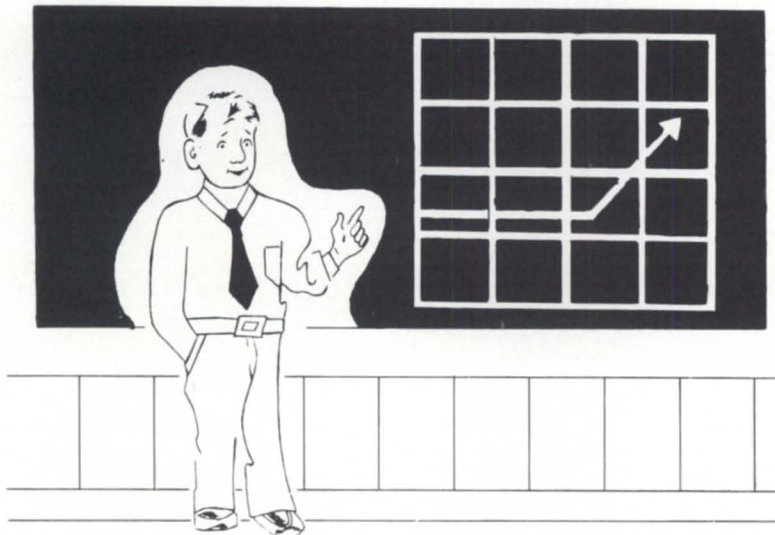
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is, if you're reading this column, you've got a substantial investment in both data and existing software. While it might seem attractive to throw out your minicomputer on one day and restart the business using PCs on the next, you just can't get away with that. The larger your department or company, the more difficult such a move becomes.

The key is to plan short-term tactical

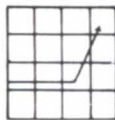
changes as techniques to realize your long-term strategy, and the best example of this is known as *PC integration*: that is, not suddenly switching from one platform to another, but starting by introducing PCs into your minicomputer environment, then building them up while decreasing your dependency on the mini, and finally eliminating the minicomputer altogether.

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Strategy in a nutshell

Here's a quick outline of the five strategic steps taken by some of our downsizing clients:

Install a LAN. A local area network is the key to integrating your desktops and your centralized system. It is the cornerstone of most successful downsizing strategies.

Migrate users to PCs. Initially, those PCs can be used as simple replacements for CRTs. There is virtually no retraining required, and it gives you time to catch your breath after installation of the LAN.

Migrate applications. One by one, you should move your generic (horizontal) applications from the centralized system to the desktop. Word processing will be the first to go, followed by spreadsheets and electronic mail.

Migrate data. Next move your data and those critical vertical applications to LAN-based file and data base servers. By this time, you will be comfortable with LANs and PCs, and this step won't be nearly as frightening as it may seem today.

Shut down the old system. There's nothing left to do. Put it out of its misery.

The LAN

LANs offer you the best framework within which to develop a truly distributed computing environment—one in which you really can assign each computing task to the platform offering the best mix of computational power and cost. You'll need a LAN in order to move your word processing to PCs, for example, for only then can you continue sharing documents among your users as you do today.

The key to selecting LAN products is standardization. You need products and technologies that are consistent with your strategy. You'll still be making small investments in your older systems, and you'll be asking a lot of your employees during the transition. It's your job to ensure that the transition is as painless as possible, and that it doesn't require anyone to back up or take a turn in yet another direction.

The biggest obstacle to moving to a more cost-effective computing environment is your investment in software and data. If you've got hundreds of

employees already trained in CEO or Wordperfect, the cost of moving your employees to PCs could be greater than the cost of moving the applications themselves. This isn't hype; do the arithmetic yourself. Don't forget to include the cost of lost productivity.

Here are a few specific suggestions:

Word processing. If you do nothing else in your next planning cycle, get word processing off your minicomputer. No matter what word processing software you select, make sure it's LAN-based. Users can migrate to PCs one-by-one while still accessing the existing documents stored on your centralized system. Many users have found that simply moving word processing off the minicomputer breathes life into their old systems, and they have been able to postpone upgrades for years.

Electronic mail. E-mail gateways offer similar advantages. Connecting the worlds of CEO and one of the many PC-based e-mail packages allows you to migrate users from terminals to PCs at a comfortable rate, while maintaining the integrity of an organization-wide mail system. Eventually, everyone will be moved to the PC-based system, and you just shut down the e-mail gateway.

Netware. There's no question that Netware is now *the* standard for PC connectivity, and Netware for AOS/VS is an excellent transition product. It allows you to add PCs and Macs running Netware-based software to an existing MV family environment. You can then add more PC-based, Netware-specific services, and eventually phase out the minicomputer altogether.

Your downsizing strategy

To squeeze this discussion into 1,500 words or less, I've obviously omitted a number of important details. While the

principles given here should be enough to get you started, development of a successful downsizing strategy takes a few months of hard work.

If I could get only one point across in this column, it would be that in order to be successful at downsizing, you need to start by developing a formal strategy. If I could get a second point across, it would be to team up with a consultant

with extensive downsizing experience. Okay, maybe that sounds like too much horn-tooting, but don't take my word for it. Get on the phone and call some other NADGUG members in your area. Find out where they've succeeded and failed in their downsizing activities. Ask which ones brought in an outside consultant, and which ones wish they had. △

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The 4GL option

SYNOPSIS

This article examines using a fourth-generation language (4GL) as a choice for implementing your computer system's downsizing strategy and migrating to open systems.

by Billy S. Hollis
Special to Focus

Have you had that dreaded visit from your CEO yet? You know, the one where you're shown an article on downsizing and open systems clipped from an airline magazine. If it hasn't happened to you yet, count on it. The only sure way to prevent that unpleasant experience is to proactively create your own downsizing strategy.

There may be perfectly good reasons for not downsizing your installation, in which case you merely need to present those reasons. But such installations will be in the minority. The economics of downsizing can be compelling. Especially if your platform is an older, proprietary computer, a downsized replacement may be cheaper than what you pay for one year's maintenance.

However, deciding on a good strategy for downsizing can be much tougher than making the original decision to downsize. The toughest element of all is how to move the software on which your organization depends. Should you rewrite it from scratch? In what language? Is code translation the answer? How can the changeover be made? A poorly planned transition to open systems can cost your company far more than the up-front expenses.

Migrating existing code

The first solution that occurs to many MIS managers is to move existing soft-

ware over with as little change as possible. There are points to favor this strategy. It preserves investment in existing code, for example. Too often, though, this solution is chosen simply because of inertia. Most people feel more comfortable with what they have now.

Most installations rejecting this strategy point to their continuing maintenance problems as the reason. Existing programs may be 10 years old and patched by dozens of different programmers. If the current code is a hopeless mess, the migrated version won't be any better. Most shops spend around three-fourths of their time doing maintenance—more if the code is very old. Migrating existing code is also tougher than it may appear. Cobol compilers vary just enough to make this task a real challenge. For example, the Cobol on MV systems has proprietary CALLS to support the Infos file system. There are no exact equivalents in other Cobol implementations.

Rewriting from scratch

The obvious alternative to migration of existing code is to rewrite the software from scratch. But what language should be used? The choices usually narrow down to three: the installation's current language (typically Cobol), C, and a fourth-generation language.

Rewriting in C often is considered because of its high visibility in the Unix environment. However, it's almost always the worst choice for a corporate

MIS shop, and using C is usually a poor choice for a vertical market software developer.

For the programmer, C is one of the least productive of all common languages. Good C programmers are expensive and hard to find. And C is notoriously hard to maintain, which is perhaps the biggest strike against it for business use.

Proponents of C argue on behalf of its portability and performance. It does possess a slight speed advantage (usually 10 to 25 percent) over most business-oriented languages. C source code is also reasonably portable, certainly more so than Cobol. But for most business applications, the marginal portability and speed increase do not make up for C's disadvantages.

Rewriting in Cobol or Business Basic often is appealing because the programmers are already available to do the job. This choice is not as bad as rewriting in C, but there are drawbacks. A complex system can take a long time to create. The resulting code is not very portable or particularly easy to maintain. There's also the temptation at every stage to get out that old spaghetti code "because we know it works," which leads back to even worse maintenance problems.

The 4GL solution

Using a fourth-generation language is the remaining option for rewriting software. There is no industry stan-

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standard definition of a 4GL, but here are some characteristics:

- Program sizes about one-tenth of an equivalent program written in Cobol
- Built-in data base capabilities
- Data dictionary used to hold all data structures
- An integrated debugger
- A lot of built-in intelligence; makes default assumptions about what the programmer wants, wherever possible
- Application generators allowing file maintenance and report programs to be written in 5 to 10 minutes
- Subset of the language can be taught to nonprogrammers in a two-day training course.

Most 4GLs are also quite portable, some all the way down to the level of the compiled code. That allows, for example, exactly the same software to be run on an MV AOS[/VS] system as on a brand-new Aviiion.

From a MIS manager's point of view,

the above characteristics translate into three primary advantages to using a 4GL for downsizing: quick development, easy maintenance of the resulting code, and portability to a new open systems platform.

So what's the catch?

This is an impressive set of benefits. However, 4GLs have been around awhile and they have not achieved overwhelming acceptance. The main areas of dissatisfaction for most 4GL users have been poor performance, lack of flexibility, and steep learning curves.

It is not unusual for a fourth-generation language to require 5 to 10 times the resources used by Cobol for an equivalent application. This translates to a much higher cost requirement for the replacement open system, and continued higher prices for later expansion.

The flexibility problem stems from a high-level approach taken by most 4GLs. It's easy to write data-entry applications and reports, but the lan-

guages may lack the constructs necessary for doing lower-level programming. That means a second language (usually Cobol or C) is required for such work. Programmers then must be trained on both languages, and the resulting multiple-language software is more difficult to maintain.

Steep learning curves are a consequence of the academic orientation of many 4GLs. Ignoring current software conventions, the syntax of some 4GLs is obscure and difficult to understand. Together with the conceptual leap of programming in a 4GL, some installations have reported uncomfortably long ramp-up times.

The good news is that modern 4GLs address these problems. Some 4GLs offer performance equivalent to Cobol. And many 4GLs are now so flexible that their utilities are written in the language itself. Now available are 4GLs that dramatically shorten the learning curve by providing syntax more intuitive to Cobol programmers. MOVE

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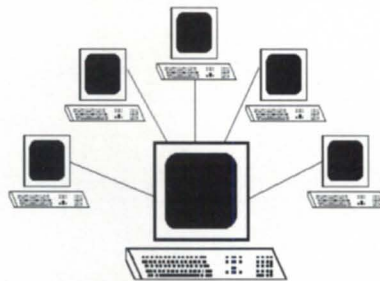
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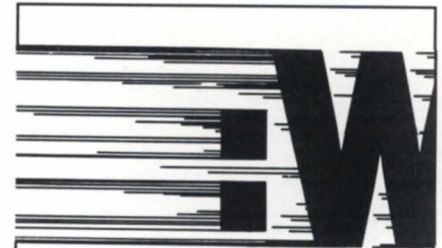
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statements and IF statements, for example, do not necessarily have to look any different in a 4GL than they do in Cobol. While there is always a "hump" to get past in understanding the philosophy of a 4GL, the right choice can make that hump much smaller.

More on detailed strategies

There are several ways to implement a downsizing strategy using a 4GL. One of the first questions you must answer is whether or not you intend to incorporate significant changes in the rewritten software. The specifications for the old system are typically used as a starting point. You may choose from a range of options, from making little or no changes in the specs, all the way up to adding lots of additional capability. In general, there is a trade-off. It is easier to make changes now, but the more changes and enhancements that are made, the more difficult the rewrite will be and the longer it will take.

Another question is less obvious: What platform should be used for the development? The simplest approach is to acquire the new, downsized platform along with the 4GL to be used, and just turn the programmers loose on it. There's nothing wrong with this, but another alternative is worth considering. If the 4GL you choose is portable to your old platform, it may be more practical to do the rewrite there. This allows you to put off the purchase of the new hardware until the software development is done, and relieves the programmers of adapting simultaneously to new hardware *and* new software. It may also make it easier to test your new system in parallel with the old one.

Some 4GLs offer migration and conversion tools that may affect your strategy. At the simplest level, tools are available to build the 4GL's data dictionary from file definitions already present in your source code. This can save lots of manual work *and* make the new files more consistent with the old ones. Depending on the 4GL, you may even be able to have new programs read and write to the same files used by your existing software.

Some conversion tools take code in your present language and convert it to 4GL code. This offers you the prospect of getting your migration done more

quickly, but there are tradeoffs.

Another surprising factor is that a rewrite may be faster for many of your programs. Since 4GLs offer easy creation of file maintenance programs and reports using application generators, converting those programs is usually not the best choice.

But for complex programs that do not need enhancements, conversion can be

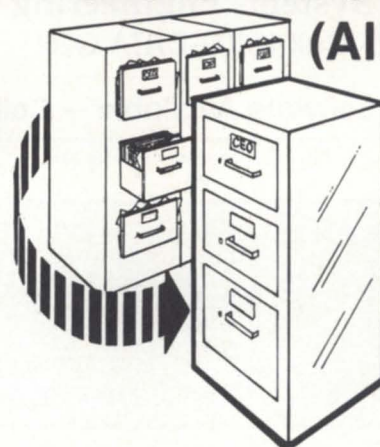
much better than a rewrite. A complex posting program, for example, may be easier to convert than to write from scratch.

Some 4GLs allow a hybrid approach by supporting Cobol syntax "in line." If the 4GL you choose allows this, you may be able to extract complicated logic from an old program, and simply copy it into the appropriate place in the new

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program. This offers another way to preserve some of the investment in your current code.

The typical strategy for using 4GL conversion tools goes something like this: Rewrite file maintenance programs and reports (60 to 70 percent of typical systems) using applications generators. Then convert most of the rest. Any processing programs that are particularly compute-intensive and used a lot can be rewritten for efficiency.

The end result of a 4GL migration can be quite impressive. Many installations report complete, successful migrations in as little as three to four months.

You should also be aware that a few 4GL companies offer migration and conversion services. This gives you access to personnel trained in the new language and the migration tools. Usually, migration services are custom-designed to fit your situation. You can choose from any level of services. At the low end, you might want one or two vendor personnel to stay on-site through the migration to assist your people. At the high end, you could contract for a full turnkey migration to be performed completely by the vendor.

Summary

Using a 4GL as part of your downsizing strategy is much more practical than many MIS managers realize. The reputation of 4GLs, based on early implementations, says that they are resource hogs, limited in flexibility, and difficult to learn. While some 4GLs still have one or more of these characteristics, a careful choice can get you a 4GL that avoids these drawbacks while maintaining the high programmer productivity and software portability you need to accomplish a successful migration. Δ

Billy Hollis has been involved with software development for 20 years, and is director of communications for Zortec, Inc., maker of the System Z fourth-generation language. Hollis is author of several software systems, is a regular speaker at industry conferences, and has written numerous articles on computers and telecommunications. He may be reached at 1321 Murfreesboro Road, Nashville, TN, 37217; 615/361-7000.



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Resizing for the 90s

by Michael H. Drucker
Special to Focus

SYNOPSIS

You need a downsizing strategy, a methodology for making sure you consider those elusive details.

As corporations enter the 1990s, they are evaluating the need to resize their information services. This can take the form of downsizing from mainframes to PC local area networks (LANs), or centralizing to gain better control of mission-critical applications. Resizing involves all aspects of an enterprise, from manual procedures to using new technology to facilitate a downsizing process. Important questions must be answered to make your resizing effort a profitable venture.

Hidden costs of downsizing

Most technological solutions, from LANs to new data base concepts, have hidden costs—from downtime to retraining. It's a lot harder than you might think to quantify the cost savings of downsizing, especially in the first three to five years of the change. The costs of new equipment and software, increased manpower, and intensive training to move functions from the mainframe can be a shock for the unprepared. LAN environments are more complex than what appears on the surface. Remember to add this new network support to your client-server project. It takes one person to support 200 terminal users on a mainframe. It will take four to support the same number on a LAN. Start slow, run in parallel, and take special care to minimize the impact on stressed employees during an already difficult period.

Money saving centralizing

While centralization is not for everyone, the right amount *can* save you money. New LAN services—such as print, fax, modem, and backup—means less equipment with less maintenance.

With the cost of communication equipment, centralizing your mission-critical applications means better control with fewer personnel. After your data have been centralized, you can deliver them to your clients through your new downsized LANs.

Peaceful coexistence

For some corporations, "rightsizing" needs to take place one application at a time. Using a variety of platforms is possible when a company has a decentralized management approach that allows each division to determine which system is best for its operation but also maintains the necessary interfaces to tie it all together for the corporate view.

Here at Global Computer Supplies, we have become a worldwide company in a short time. Our rightsizing adventure has begun by re-engineering our system with a new fourth-generation language (4GL) using an open system architecture.

As part of this project, we will add support for four foreign languages. Using an applications migration decision matrix designed to provide a clear and concise picture for developing an application migration strategy, and an open system rightsizing methodology describing the steps in performing the project, handed out during the NADGUG meeting in Denver last fall, I hope to make the right decisions to bring my company through the turbulent times of the 90s. Δ

Michael H. Drucker is the MIS director of Global Computer Supplies of Port Washington, New York, a mail-order company that includes catalogs for computer supplies and other equipment. He's been involved in the computer industry for 30 years.

Open systems downsizing methodology

This appendix presents the individual steps composing the open systems downsizing methodology. These steps accurately describe the work involved in performing a medium to large scale downsizing project. The emphasis centers on analyzing individual business units and arriving at a sound application migration decision matrix. This methodology also supports smaller projects where the need for a specific set of new applications is required.

Downsizing committee

- Organize downsizing committee
- Review business plan goals
- Perform open systems benefit analysis
- Establish downsizing goals

Client interviews

(Business unit interviews by business unit)

- Review business unit goals
- Analyze application requirements
- Evaluate:
 - application transaction volumes
 - application security requirements
 - application functional requirements
 - application scope
 - application availability requirements
 - application integration issues
 - response time requirements
- Analyze:
 - automation status
 - facility requirements
 - computer proficiency levels
 - personnel requirements
- Prepare business unit summary

Review MIS operations

- MIS expenditures
- Computer systems status
- Security standards
- DBMS standards
- Application development standards
- Network configuration
- Support & maintenance agreements
- Backup/recovery standards
- Disaster recovery plan
- Personnel requirements
- Network availability requirements
- Connectivity/traffic analysis
- LAN implementation & operations criteria
- Prepare MIS operations summary

Applications migration plan

- Application migration mix
- Evaluate & select software vendors
- Application package recommendations
- Application development recommendations
- Application migration plan

Network plan

- Review software migration plan
- Distributed network strategy
- Connectivity & traffic model
- Evaluate & select equipment vendors
- Network configuration & wiring diagrams

- Prepare network plan includes:
 - present network configuration
 - network requirements definition
 - network & computer facility design
 - implementation guidelines
 - personnel support requirements
 - support & maintenance requirements
 - cost schedules & risk management profile

Downsizing implementation plan

- Computer & network equipment schedules
- System & application cost schedules
- Facility cost schedules
- MIS restructuring plan
- Personnel requirements & cost schedules
- Cost/benefit analysis & risk assessment
- Phased implementation schedule
- Downsizing committee review & approval

Network installation

- Order equipment & services
- Execute support & maintenance agreements
- Prepare computer facilities
- Install:
 - communication cables
 - communication services
 - client/server network
 - NOS environment

Network security & administration

- Set up:
 - logical resource assignments
 - network directory services
 - user desktop environment
- Implement:
 - global network security standards
 - global DBMS standards
 - backup/recovery procedures

Application conversions (by application)

- Prepare application conversion plan
- Install:
 - application software, data base and security
- Update backup/recovery procedures
- Integrate application into desktops
- Test application environment
- Train users on application usage
- Grant user access

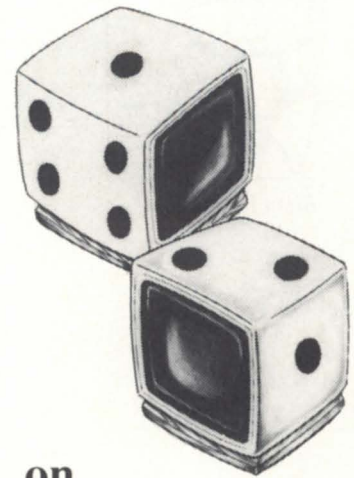
Application development (by application)

- Application prototyping
- Prepare application specifications
- Prepare application design
- Prepare data base design
- Generate application software
- Test application software
- Application performance tuning
- Prepare application documentation

Personnel training

- Prepare desktop training course
- Prepare office automation training course
- Train users on desktop environment
- Prepare application training courses

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Brian Johnson

SYNOPSIS

Turning to the computer trade press this month, BJ pulls together a cacophony of voices for your perusal.

The clipping file

:HUH?

I'm back. Last month the inevitable happened: I wrote the first of what was intended to be a two-part column on how to use the new SYSLOG features to implement a security monitoring scheme, and it turned out that someone else wrote a column on the exact same topic. Had to happen eventually.

:RAG_PICKINGS

Several months ago I started including a new section citing quotations from the computer trade press that I found humorous, ironic, or downright sad. This month I'm going to purge the bulging clipping file. Before I get to my clips, here's one that was submitted by Kurt Meyer of the State of Wisconsin. Kurt sent me a clipping from *Network World*, Feb 3. It's a column by James Herman, a principal with Northeast Consulting Resources, Inc. The column is entitled, "The Future of Networking".

The thrust of Mr. Herman's argument is that we need to discard all existing mainframe applications and redesign both the business processes *and* the business organization to more closely match the new object oriented technology. An excerpt:

"Objects can easily be distributed across high-powered workstations and servers, creating a scalable architecture that can provide far more computing power than dinosaur mainframes running structured Cobol."

From me, on March 3, after reading the above column: "Twenty years from today, there will still be ads in the San Francisco newspaper for Cobol, RPG, and programmers. There won't be any ads for OOPS programmers. OOPS systems will have died years earlier after everyone realizes that the quest for

reusable software was, at best, naive and, at worst, incredibly inefficient."

To buttress the preceding, consider this from *System & Network Integration*, March 2, regarding IBM's release of CICS for the AS/400 and its planned release of CICS for the RS/6000 (an OS/2 version was announced earlier):

"This step will widen CICS' horizon from its position as a 25-year-old technology designed for use with dumb terminals to a true client/server, multivendor transaction processing system."

From *Information Week's* February 17 cover story, "The Case Against CASE":

"Put simply, CASE has never lived up to its promise. First, the pre-release hype was so great that the technology was doomed to forever trail it."

Kinda reminds you of AI, voice recognition, and OOPS, eh?

From *Smithsonian* magazine, sometime during 1991 (sorry), an article entitled, "Techno-Angst," by Richard Wolkomir:

"I finally tried using our car's radio, which is embarrassing, since we bought the car more than two years ago. But this radio is one of those modern techno-things, like digital watches and microwave ovens, that seem to be designed with a secret agenda, which is to mortify us and break our spirits. It has 12 knobs, switches, buttons, and push bars, and some of the knobs double as buttons, while some of the buttons double as knobs. Explaining how all that works takes up five pages of the owner's manual, with diagrams."

From the December 9, 1991, *Unix*

Today! (renamed on March 2 to *Open Systems Today* in February '92), a blurb entitled, "Proprietary Vendors Turn About, Go POSIX":

"This year also saw the addition of a weird wrinkle to the already complex open systems world: All the major hardware vendors promised their proprietary operating systems would be 'open,' leading a pithy observer to coin the term 'open proprietary systems'."

From *Information Week*, January 13, a column by Glenn R. Rutz entitled, "Final Word," on the deal between IBM and Apple:

"To top it off, you have two of the most proprietary computer firms on the face of the earth declaring that they will develop the next 'standard' and make it open to all. Get real. If you think Messrs. Akers and Sculley put industry advancement ahead of their own profitability then you haven't been reading

Information Week."

From a *Business Week*, January 20, article about Robert E. Allen, AT&T's chairman and CEO:

"By making AT&T's equipment businesses more efficient and buying NCR Corp. to fix his computer division (!!! emphasis mine), he is putting the company on track to reach its ambitious goals at last."

From *Bay Area Computer Currents*, January 13, a column entitled, "GiggleBytes," by Lincoln Spector, subsection titled, "Betrayal of the Year":

"After years of writing nothing but snide comments about graphic interfaces, in 1991 I switched over to Windows—and fell in love. But what brought me around? Was it the innate simplicity of double-clicking on icons? The full-powered professionalism of the applications? The multitasking? Not

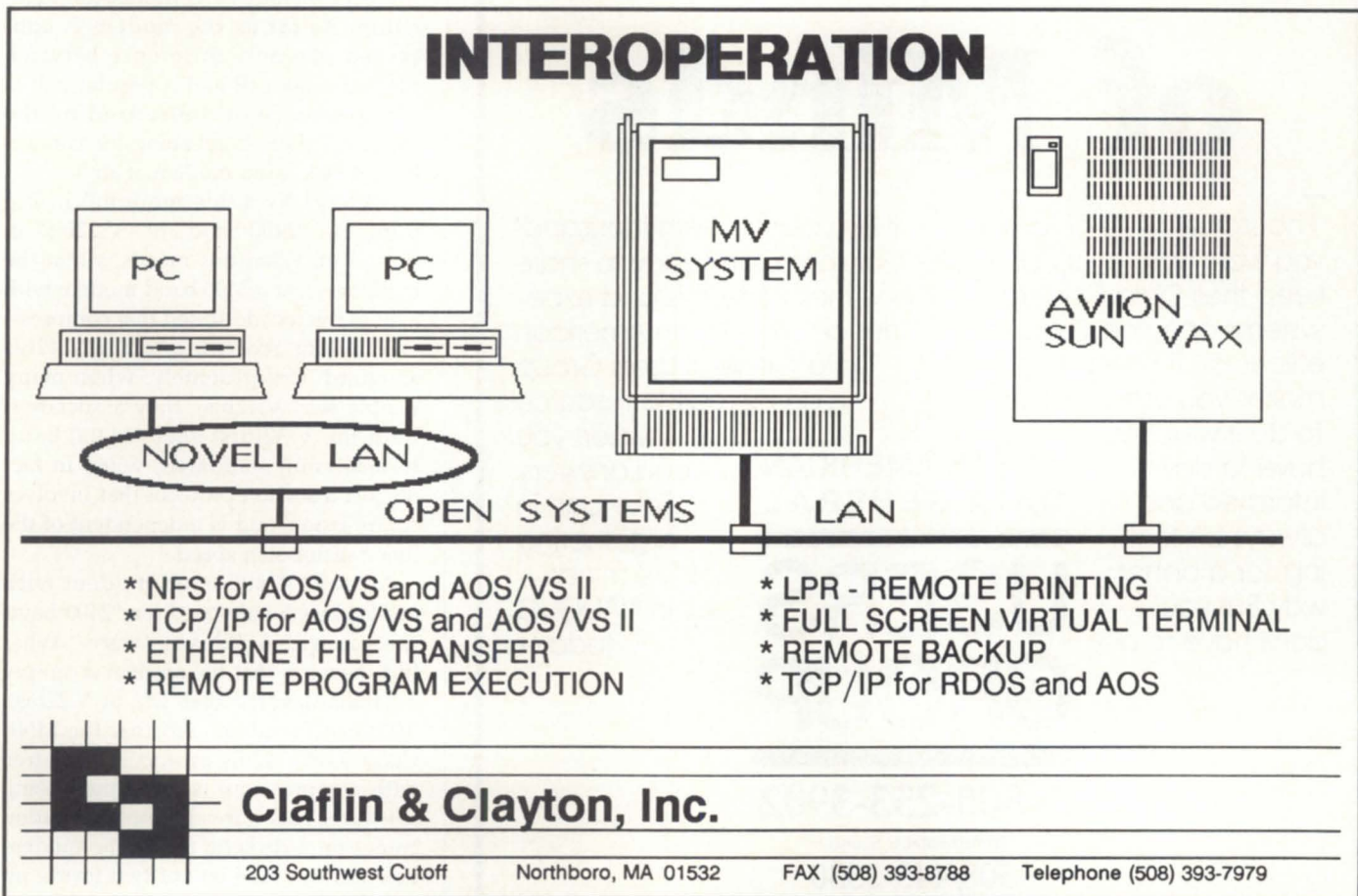
really. Icons are only useful if you can figure out what they mean, Windows apps require more hard disk space than the Army, and Microsoft's idea of multitasking is scanning the mouse and keyboard at the same time. What brought me to the wonderful world of GUIs were fish-tank screen-savers and Bugs Bunny wallpaper."

From *Business Week*, March 2, page 96, an article by Evan Schwartz and James Treece entitled, "Smart Programs Go To Work":

"Overhyped artificial intelligence systems are being replaced by more useful 'applied intelligence' software, which doesn't 'think' but 'knows.' Applications include predicting stock performance, detecting tax fraud, and pinpointing underground oil and gas deposits."

Ge, isn't "applied intelligence" a synonym for good old "algorithmic"?

INTEROPERATION



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A recent survey by a company called INPUT "revealed that less than half of users believe Unix represents open systems." And according to the survey results, more respondents agree that, "Operating Systems Supported by Multiple Vendors, e.g., MS-DOS" (45 percent) represent Open Systems than agree that 'Unix' does (40 percent). Gee, I thought that Microsoft was the only

vendor that supported MS-DOS. Who did they survey, Martians? Duh.

From *Information Week's* Executive Summary of January 20:

"No one likes to talk about it in the computer industry, but there has been no measurable increase in white-collar productivity over the last two decades for all of the investment that's been

made in information systems."—John Sculley, CEO of Apple Computer.

Finally, I tried to find some clippings exposing the latest two fads: "downsizing" (or "rightsizing," for you politically correct types) and "outsourcing," but I came up dry. Maybe it's a bit too soon for the horror stories to surface.

:MODEMS:CAVEAT

Several months ago I described the setup for using the newest V.32bis/V.42bis high-speed modems with AOS/VS [III]. Since that time, the number of downright misleading modem advertisements I've seen has risen from noise level to a deafening roar. Here are some translations of the misleading phrases:

Ad says, "9600 baud FAX modem," or "9600/2400 baud modem with FAX capability." What it really means is that the modem operates at 2400 baud, but when sending or receiving faxes it has a net throughput of about 9600 baud by virtue of the fact that Group III fax data protocol includes a compression algorithm. As far as the modem is concerned, the only difference between placing a fax call and a regular call is the frequency of tones used by the modems when establishing the connection. A 9600 baud modem, it ain't.

Ad says "V.42bis modem" in big print, but "2400 baud" or "V.22bis" in tiny print. What this means is that the modem is just a 2400 baud modem with a bit of microcode added that compresses the data according to the V.42bis standard. Unfortunately, when many people see "V.42bis" they associate it with the V.32[bis] 9600/14400 baud transmission standards, when in fact it's just a session protocol that involves compression, and is independent of the line transmission speed.

Ad says "2400 baud modem with MNP Class 5 software," or "2400 baud modem with V.42bis software." What this means is that the modem is simply a vanilla-flavored (Bell 212 or V.22bis), 2400 baud modem, and that the MNP Class 5 or V.42bis protocol (error-free with compression) is performed using software. This software implementation comes on a diskette inside the modem box and can take one of two forms: an arcane third-party terminal emulator

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and file transfer program, or a TSR program that intercepts serial port traffic and preprocesses it. Either way, a significant chunk of your PC computing power is spent making up for the lack of an onboard implementation of the protocol. All this in order to reduce the price of the modem by a few dollars. And if you bought the modem to use on something other than a PC (like an MV), then what you've got is a plain old 2400 baud modem.

I strongly recommend that you avoid modems/software packages that implement transmission protocols in software. For 2400 baud modems, the price increment for modem-based V.42bis is negligible. For 9600 baud modems only modem-based V.42bis is available, because a software implementation of the protocol is impractical on anything less than a 40Mhz 386. The real issue with 9600 baud modems is V.32 vs V.32bis: the incremental cost of the exotic Trellis coding signal processor circuitry required to achieve the increase in transmission speed from 9600 baud to 14400 baud is quite significant and not likely to drop soon.

Net-net: If price is the issue, look for a 2400 baud modem with MNP Class 5 or V.42bis hardware. Price: about \$100-\$150. If speed and price are the issues, get a V.32/V.42bis modem. Price: about \$300-\$400. If you have big bucks, get a V.32bis/V.42bis modem and you'll be set for the foreseeable future. Price: \$400-\$600.

:KUDOS

Last month I received an announce-

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ment of Wordperfect Corporation's new license/upgrade scheme that bases license fees on the maximum number of simultaneous users, instead of the CPU type or platform. I applaud their effort. As you know, I've long argued against license fees based on processor model numbers, and in favor of licenses based on user counts. I sincerely hope that WPCorp's excellent new strategy forces

everyone else who's doing licensing the wrong way, especially computer makers, to rethink their policies.

A few months back I congratulated WPCorp on their dandy new pay-as-you-go scheme for SSS on PCs. Lo and behold, the same announcement notice included a credit card based pay-as-you-go scheme for their products running under AOS/VS [III]. Awesome. Δ


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Circle 10 on reader service card.



David Novy

SYNOPSIS

If you have a homogeneous computer environment, proprietary LAN packages may make sense. But if you're heterogeneous instead with PCs, Macs, and Unix workstations, NFS client software may be a better choice for today and the future.

LAN tidal wave

Why buy a LAN cow when all you want is LAN milk?

There has been a great deal of discussion lately regarding local area networks (LANs). There is Novell Netware, and Novell Portable Netware. There is also Lanmanager, high-speed Token Ring, low-speed Token Ring, ISO, IBM SNA, Sun Network File System (NFS), X.25, and FDDI. The stream of LAN network information has become so overwhelming that some days you may find yourself wanting to take two aspirin, crawl into bed, pull the covers over your head, and wait a couple of years until the network information tidal wave passes and the marketplace settles down.

But it is impractical to remain in bed for the next two years, so is there a way

to simplify network needs? It is important to realize that most LAN network software products on the market today were developed to allow IBM-compatible personal computers and Apple Macintoshes to talk to each other. PCs and Macs were originally conceived to be standalone pieces of equipment. But as soon as people began wearing the tread off their sneakers shuttling diskettes around the office, they began asking if there was a better way. Many entrepreneurs quickly became very rich developing proprietary products to allow connectivity among PCs or among Macs (but never the twain did meet).

Networking in the Unix world has never been much of an issue. If Unix users wanted to talk to each other, they used the *de facto* standards of TCP/IP,

A word about DG/UX enhancement requests

by David Novy
Special to Focus

Data General is trying a new method for processing DG/UX enhancement requests: routing all DG/UX enhancement requests through the NADGUG DG/UX special interest group to help set the priority of the requests. I am the DG/UX SIG chairman, so I have become responsible for coordinating user input for DG/UX enhancement requests, and have already seen the first batch. I think the new procedures can be extremely valuable to DG/UX users. They can be of even greater value if you help those processing the enhancements:

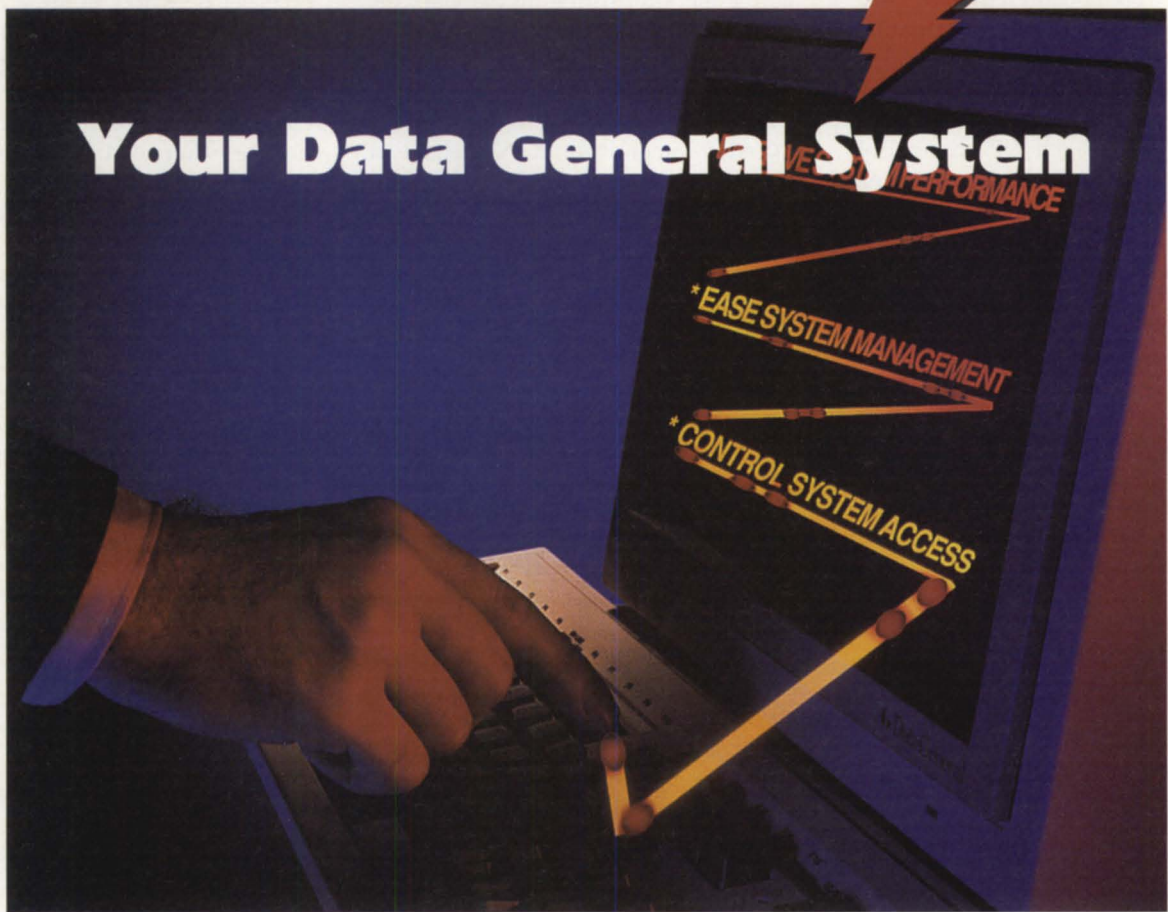
1) When you send in an enhancement request, make sure you supply as much information as possible why you think your enhancement is useful.

2) There have been several requests for DG to modify the *sysadm* scripts in order to run backups using *sysadm*. Wouldn't it be easier to write your own family of system management scripts to do backups and other site-specific procedures? *Sysadm* is very convenient, but it is also a potential security breach because only a superuser can run *sysadm*. Another problem with universal users is that every site has its own idiosyncrasies.

3) Because I am not an expert on every feature of the Unix operating system, I will need help from the DG/UX user community to evaluate enhancement requests. Those of you out there willing to help with enhancement request evaluations, please add a note to your enhancement requests saying so. Please, don't be shy. Δ

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Sun NFS, and uucp.

Until about three years ago, TCP/IP and NFS were considered Unix products. Then Unix's popularity began to grow. The U.S. federal government adopted Unix and TCP/IP as standards, and suddenly everyone started building TCP/IP and NFS-compatible products. The LAN product informational tidal wave formed when LAN information streams for PCs, Macs, and Unix all collided as they fought to gain control of the same stretch of beach (the customer's pocketbook).

The strength of Unix is that it is now compatible with PC and Mac LAN environments. If you have a Novell network, you can now use a Unix file server as your hub. If you have Macs, Appletalk now runs on a Unix file server as well. However, if you are new to LANs, you can satisfy most of your PC and Mac networking needs with two pieces of software, a Unix file server, and an ethernet network. The key to this environment is to use NFS on the

Unix file server as your information storage environment. PCs and Macs can access the information on the Unix file server using NFS client software.

The NFS client software you may wish to evaluate for the Mac is Pathway Client NFS from Wollongong. For the PC environment, Sun PC NFS is one of the leading choices for PC NFS client software. Neither of these packages is as full-featured as the packages from proprietary vendors, but the NFS client software packages do allow Unix, Macs, and PCs to coexist peacefully, and since they are all TCP/IP-based, they simplify network management.

Until about two years ago, most proprietary PC and Mac LAN network software vendors seemed to assume that their products owned the network. If these PC and Mac LAN packages wanted to do a full network broadcast to find the address of the destination machine, that was all right. It did not seem to matter that their broadcast traffic could choke an ethernet. The arro-

gance of these software companies changed when people controlling the ethernet networks in large companies told the LAN software vendors: either their software will learn to behave itself, or machines running their software would not be allowed on the corporate ethernet backbones. It was change or perish, and the PC and Mac LAN software vendors decided to change.

If you have a homogeneous PC-based or Mac-based computer environment, then proprietary LAN packages may make sense. However, if you have a heterogeneous network of PCs, Macs, and Unix workstations, then NFS client software may be a better choice, both today and in the future. Δ

David Novy is a technical computing specialist at 3M in St. Paul, Minnesota. He is past chairman of the AOS/VS special interest group, and current chairman of NADGUG's SIG/UX. He may be reached at 612/733-3320.

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Bits and bytes

Buffer flushing and timeouts



From: Mark Pagano

Does anyone know how to flush the input buffers on an IAC?

From: Bob Butler

It depends on what you are using (C, assembler, Cobol, CLI, etc.). Check the ?READ system call and look at word ?ESFC of the screen management extension packet. ?ESNR will flush the buffer, ?ESGT will read any type-ahead and return immediately. Either should be usable to flush the input buffer.

From: Doug Rady

Have you ever gotten ?ESGT to function correctly? Anytime we've used ?ESGT, it pends. As of [AOS]/V5 II 2.10, there is a new screen-edit packet that has support for true unpended reads. It is also supposed to be in VS

Classic in 7.69 or 7.70.

From: Stan Gula

?ESGT works, but you are right—it always pends until there's something in the buffer. PMGR-controlled consoles and PADCONS, TCONS, etc., will return as soon as there's one or more characters, VCONS apparently will not return until there are three characters. You have to enable timeouts (minimum two seconds for console ports of all types) and then the ?READ will return with a timeout error if no characters are received. The best way to handle ?ESGT (unless you want to make your code rely on [AOS]/V5 II 2.10 extensions) is to multitask. Have one task doing timed ?ESGT reads and filling your own big ring buffer. Then the "real" task can do a higher-level read from this buffer (and can skip if no characters are present).

From: Mark Pagano

Yep, there it was in black and white. Here is my next question: is it possible to do a ?READ and have the ?READ timeout after so many seconds? We are using PL/I, AOS/V5 II, if that matters.

From: Bob Butler

There is a /TO characteristic that does a two-second timeout (if I remember correctly). That and the ?STOM call might be worth checking. The only other way I can think of offhand is to have another task that does delays and redirects the input task when the time elapses. How feasible that is in PL/I, I have no idea. Δ

Do you have an answer, comment, or question? Call the NADGUG/RDS electronic bulletin board, available to all NADGUG members. The phone number is 415/499-7628. No fees other than telephone charges.

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Mind your e-manners

SYNOPSIS

If your office does its "talking" through e-mail, you need to know the basics of electronic etiquette.

by John Coan
Special to Focus

Would you wear a red jacket to a funeral? Probably not. OK, how about this one—do you eat your peas mashed on the back of the fork? Ecch! Better yet, have you ever been to a wedding where the bride and groom passed the collection plate?

Fortunately, most of us do know about funeral manners, and table etiquette, and all the rigmarole about weddings. But have you ever considered the subject of electronic communication etiquette?

In years past, our ancestors were taught the correct way to use the communications media of their day. Back when a Morse code operator had to actually listen to the dits and dahs and write out the telegraph message on a piece of paper, it was not at all impolite to communicate at a level of verbal parsimony that would be downright rude otherwise. Consider this telegram:

I LOVE YOU ETC STOP MARRY ME STOP

Hardly romantic, but acceptable and socially correct nonetheless because everybody talked this way in telegrams. And why do we say "hello" when we answer the phone? My grandmother never said "hello." She said "all right," meaning the connection was fine and the caller could go ahead.

The writer of a typical 1880s business letter may have quite naturally used a complimentary closing of, "Your humble and obedient servant," instead of the now common "Sincerely," even if the sender was a lawyer threatening to sue a deadbeat. Such effusive language simply followed custom.

So what does all this have to do with electronic mail? E-mail is a just another form of written communication transmitted to the addressee via a computer network.

There are many types of computer networks extant today, ranging from a few PCs hooked together, all the way up to industry giants like Compuserve with thousands of subscribers. The trait they all share is the ability to dash off a message on your keyboard to a colleague, or even a stranger, and have it get there instantly.

In a typical business environment, a company installing its first e-mail system will go to great expense to train employees in its use. The better e-mail systems are fairly easy to learn, menu driven, user friendly, and all that.

The problem comes when you turn 50 to 100 e-mail neophytes loose with a technology for which no established body of manners exists. Without social guidelines—or e-manners—there exist all kinds of possibilities for gaffes.

Just as there is an established body of general principles concerning telephone etiquette, and proper ways to compose a letter or memorandum, if your office does its "talking" on a computer everyone needs a common grounding in e-manners:

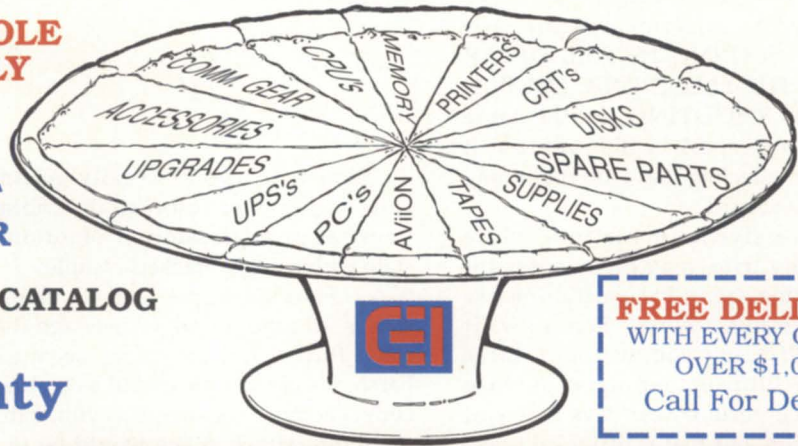
1. Expressiveness. The e-mail recipient cannot rely on visual or intonational clues to ascertain the correct meaning of the message. When we speak on the phone, tone of voice conveys a great deal of meaning. If we whisper it means



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one thing, laughing or shouting means quite another. Even though a series of e-mail messages is interactive much like a telephone call, voice inflection is missing.

Certain techniques may be employed to inject expression. For example, TYPING IN ALL UPPER CASE IS THE ELECTRONIC EQUIVALENT OF SHOUTING. by the same token, when i speak in all lower case, it conveys the feeling that i am mumbling into the keyboard.

Expressive punctuation, while potentially trite, may be in order for informal messages. Exclamation marks convey much. Wow! See how it WORKS!!!. Can't you just FEEL these words?!? Ellipsis (ending a sentence with three periods) conveys that you could go on, but that it really isn't necessary if your recipient takes the time to read between the lines

On some e-mail systems, including CEO, it isn't possible to underline words. However, much the same effect

can be achieved by putting the emphasized word either in upper case, or, setting it off from the rest of the sentence with asterisks or underscores. You can even do inventive little things like — ==>this<==—, or this:

```
o o
(j)
\_/
```

You know you're really getting clever when you resort to describing your facial expression or emotional state within angle brackets. <smile>

2. Flaring. People tend to "flare," that is, to send an angry message that upon further reflection may seem too harsh. It's easy to use e-mail as a verbal cudgel because we are not as vulnerable to counterattack as we would be in a phone conversation or face-to-face discussion.

3. Urgent messages. This is the equivalent of interrupting a meeting, or asking someone to get off another

phone line to talk to you right now. Urgent e-mail demands immediate attention. The user must stop whatever he or she is doing. But urgent is not the same as important. All messages are important, but few are truly urgent. If all messages are urgent, then no messages are urgent. And like the boy who cried "Wolf!", when you do have a truly urgent e-mail message, nobody will believe it.

4. Carbon and blind carbon copies. It is tempting to overuse CEO's carbon copy and blind carbon copy facility. Just because it's easy to "CC:" everybody and his brother doesn't mean those copyees necessarily want to hear your opinion (even though it is indubitably insightfully perspicacious!) Keep in mind that sending someone a BC is the equivalent of letting someone listen in on a phone conversation without the knowledge of the third party.

5. Junk e-mail. The e-mail equivalent of bulk rate includes messages to large automatic mailing lists that really



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concern only a few people. A good analogy is a loudspeaker paging system. "Somebody's in my parking space," or "Anybody seeing X tell him to call Y right away."

6. Gossip, unkind remarks, inappropriate comments. To paraphrase Letitia Baldrige writing in "The Complete Guide to Executive Manners":

"Think before you participate in gossip, either by adding to it or reinforcing it, even if you believe it to be true. The employee who defends a colleague—even with an innocuous statement, 'Look, I don't think you're being fair'—shows leadership qualities."

The recipient may, for whatever reason, decide the subject of your derision needs to see what you said.

7. Keep your inbox cleaned out. Your terminal is hooked to a central computer with a hundred others, all in use at the same time. Anything you do that slows down the system unneces-

sarily for other users is not polite.

8. Romance. If the light of your life is on your e-mail network, or if you have targeted someone to be the light of your life, is e-mail a proper way to express your desires or otherwise court that person? Proper uses of company equipment notwithstanding, you must realize that it's harder for most folks to convey precise feelings in writing than it is face-to-face or on the telephone. On the other hand, you may tend to be less inhibited talking on e-mail than you would be otherwise.

9. Acknowledging messages. If someone sends you a message, it is polite to acknowledge it with a short reply, even if a reply is not strictly called for. A simple "Thanks" goes a long way.

10. Abbreviations. It's tempting to use multiple abbreviations in an e-mail message. Unless you are absolutely certain your recipient knows what you mean, spell it out. But there are certain abbreviations that have come to be

understood by frequent users of e-mail systems:

FYI	=	For your information.
GMAB	=	Give me a break.
BTW	=	By the way.
FWIW	=	For what it's worth.
IMO	=	In my opinion.
OIC	=	Oh, I see.
OTOH	=	On the other hand.

Others of this genre are less kind. For example, %\$@!& (and all variants) means the same as it does in comic strips. Can anybody guess what RTFM means? (see answer below).

These are just a few suggestions for sending socially acceptable e-mail. Others are sure to crop up.

And, the answer to the quiz: RTFM means "Read the %\$^&* manual." Δ

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Kim Medlin

Using RAD tools

SYNOPSIS

This article is the fifth in a series that follows a logical progression through a software development project using RAD tools and techniques.

To a "rad" surfer dude, the tools of the trade might include a waxed surfboard, reflective sunglasses, and perhaps some awesome tunes. But to a RAD software developer, one "must-have" tool is a good 4GL (fourth-generation language). A 4GL can produce much more software in a shorter period of time than a 3GL can, thereby boosting a programmer's productivity. By properly using a 4GL, a programmer

can practice the fine art of RAD (rapid application development) and hit the beach running.

In part four of this series, we used a CASE tool to define the functionality and data base structures used by the Loan Tracking System (see "Building a case for CASE," Feb. 1992, pg. 26). In this article, we'll move on to the actual development phase and use a 4GL to write the primary application functions.

Figure 1: A form with three blocks

Action		Edit	Block	Field	Record	Query	Help
Student:		Adcock	Kenneth	Lee	Soc Sec Num: 245-37-5242		
		28 Westfield Road					
		Fletcher	NC 28732	Status: I	Inactive	06/23/1991	
Student Loan Information							
Year	Sch Code	School Name			Orig Aprvd	Orig Adj	
1987	ASU	Appalachian State University			1,131.00	1,131.00	
1988	ASU	Appalachian State University			1,600.00	1,600.00	
1989	ASU	Appalachian State University			1,500.00	1,500.00	
Payment to School Information							
Check Date	Check Num	Amount	Sch Code	Description			
08/12/1986	1332	566.00	ASU				
12/15/1986	1505	565.00	ASU				
Count: 1		v		<List><Replace>			

The group I work for at Data General, Solution Services, specializes in custom software development. We've been at it for about 14 years, and many of our current projects directly involve 4GLs. We've found that a 4GL isn't really like a programming language in the traditional sense. A 4GL is actually a collection of tools that automate the development of the most common business data processing functions. Some sort of procedural code is then used to augment the functionality provided by the 4GL. Because no industry standards exist for 4GLs, each vendor has created its own philosophy for implementing 4GL functionality. I have experience with all of the leading 4GLs, and I feel that since no single 4GL seems to satisfy all needs of all computer applications, it is imperative that you take into account individual application requirements when selecting a 4GL for a project.

The Loan Tracking System is not fictitious. It is a real-world application written in a 4GL that is used on a daily basis. Although it could have been written in any number of 4GLs, I selected Oracle. Consequently, to convey to you the concepts of RAD, which by no means are unique to Oracle, I must discuss RAD within the context of Oracle-specific characteristics.

Core application functions

Common commercial data processing applications usually consist of at least the following types of functions:

- menu structure
- interactive forms (e.g., data entry and maintenance)
- reports
- batch-oriented data processing.

This list is not exhaustive, but I think you'll agree that most commercial applications include these types of functions as an integral part of their core functions. And herein lies the power and value of a good 4GL. The 4GL tools can produce most, if not all, of the application functions without the long and tedious development effort required by a 3GL. In this way, the 4GL pays for itself by reducing the time required to complete the development life cycle. It also allows certain software applications to become economically

feasible where they wouldn't before.

Interactive forms

The primary front end of most commercial applications is a set of interactive application forms that basically enable the user to enter data into the data base. Of course, the forms also ensure imperative requirements, such as data integrity and consistency.

Let's take a look at two forms: one, a very simple maintenance form; and the other, a fairly sophisticated data entry form.

A good example of a simple form is one required by the Loan Tracking System's student_status table. Used chiefly to validate the student status code in other forms, the table has only two fields:

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Table name: student_status

Field name	Type
code	char (1)
descr	(char (30))

The functional requirement of this table's form is simply to enter and maintain the data in the student_status table.

Oracle's tool for creating interactive software forms is called SQL*Forms. Its intended use is mainly for automating the entry of data found on paper forms. Most paper forms have lines drawn on them to identify blocks of related data. Not coincidentally, SQL*Forms organizes similar information in areas it also calls blocks. Each SQL*Forms block is generally associated with one SQL table, which is called the block's base table. In this example, there will be one block and one base table, the student_status table.

Using SQL*Forms' "default block" screen, you enter information required by the form you are designing. Once the information is keyed, SQL*Forms creates a fully functional default form. It can add, change, delete, and inquire on the records in the student_status table. With approximately five minutes of additional effort, you can alter or enhance the form layout to be more cosmetically appealing and can enable the SQL*Forms default menu bar.

In a matter of minutes, and without writing a single line of code, you've generated an interactive form that displays a variety of options for users to select. The default menu bar allows users to navigate through many standard data manipulation functions without using a function key template.

The entire process of creating this simple form took about 10 to 15 minutes. It was quick and painless. The final product is a polished form that can be immediately put to use by an end user. I dare say you'd have a hard time matching that feat in Cobol.

Now, what about a more complex form? The form pictured in Figure 1 (page 28) represents a form with three blocks. The top-most block contains information about a specific student. The second block contains information about each loan that student has been approved for. The third block records

how each individual loan was paid to schools. This form represents a one-to-many-to-many data relationship and was created in much the same way as the simple form. There are more blocks and fields to contend with, but the concepts are exactly the same.

Besides its size, this form introduces some new complexities. For example, after payment to the school has been entered, the user must be notified if total payments to-date exceed the original approved amount. This is accomplished by a trigger.

Triggers

SQL*Forms allows user-written logic to be executed when certain events occur. This is called event-driven programming. Events can include:

- The user pressing the ENTER key (called the next_field event)
- The cursor about to enter a field (PRE-FIELD)
- After a data base update occurs (POST-UPDATE)
- Detection of an error condition (ON-ERROR)

So if I want something specific to happen after a data base update occurs, I'd write a POST-UPDATE trigger. The trigger is "fired" immediately after the data base update occurs. The syntax found in Oracle triggers is called PL/SQL, which is an implementation of a 3GL embedded within the confines of 4GL functions. Programmers generally find PL/SQL easy to learn.

In the Loan Tracking System, to notify the user of an overage in payments, I wrote a POST-COMMIT trigger, which fires after each form transaction has been completed.

The bottom line

How rapidly can a complex form be

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developed? The form just discussed could be written in a day by an experienced developer. I would be surprised if the same functionality could be written in a Cobol program in less than week. In RAD development, it often takes longer for the analyst and user to decide what a function should do than it takes to actually develop it! That's quite a change from the last generation

of software development tools.

The rest of the story

Next time, we'll take up where we left off and discuss the methods for developing reports, menus, and batch data processing functions. But hang on to your surfboard, dude. They can be generated even faster than interactive forms! Δ

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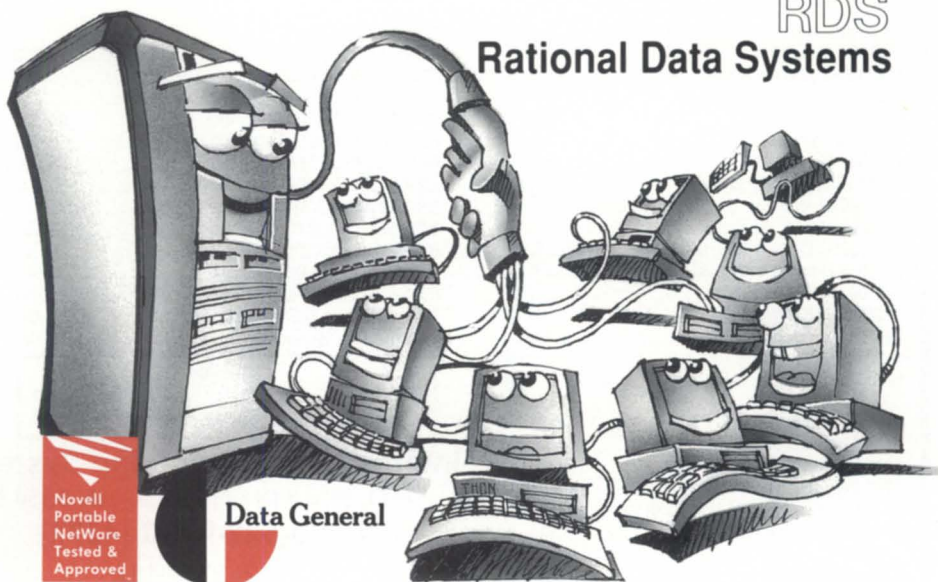
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Version 2.0 emulates DG's D470 color graphics terminal and DG's D461, D460, and D450 monochrome graphics terminals, as well as a range of Dasher text terminals. It supports all DG terminal functions, including 132-column display, 81-column display, multiple display windows, full character attributes, European DOS compatibility (including code page 850 support), and adjustable scroll rates.

A PC running MS-DOS version 3.0 or higher is required for both the single-user version (\$375) and file-server version. The software requires 448 KB of memory. An EGA or VGA graphics board is necessary for graphics emulation. The multi-user version, supporting five concurrent users, is priced at \$1,495. Registered users of Smarterm 470 can update to the current version for \$99 per copy-concurrency.

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AIM now multilingual



Germantown, MD—Data Bank Associates has restructured the screen module of Archive Interface Module (AIM) for CEO to support a number of languages. The current version, 1.34, supports English, French, and Hebrew. The Hebrew version of AIM has been a help to DBA's Israeli distributor, TEAM Computers and Systems, Ltd., in its sales activities. Coming soon are Spanish, German, and Italian.

Language conversion to Hebrew was the most difficult, DBA officials note. The language uses a character set not known to DG terminals, as well as a "backward" right-to-left reading direction. While performing the translation for TEAM, DBA structured programming to support other languages. The screen module redesign permits DBA to produce an almost unlimited language capability.

AIM uses DBA's Arc compression program and is able to "transparently" compress and restore documents upon user demand. Average compression of CEO documents exceeds 70 percent.

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

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Mailing with Postware Plus, barcoding with Printform



La Crosse, WI—Postalsoft, Inc., announced enhancement of its Postware Mailing System, and splitting of the new version (4.0) into a dual product line available on the Data General Aviiion and other platforms.

Postware 4.0 is a continuation of the company's current product line, with enhancements. Postware Plus incorporates all of Postware's features, as well as a number of specialty functions. Both systems include presort, merge/purge, address correction, and barcoding and labeling modules.

Version 4.0 includes features such as mail segmentation, firm bundling, manifesting, custom merge/purge processing.

Also offered by Postalsoft is a new version of the company's Printform mailing system for barcoding mailpieces.

Printform 2.0 applies ZIP+4 and delivery-point barcodes in the address block when printing. Another feature is reprinting, creating a separate output file to redo statements that were creased or torn during the folding-inserting process.

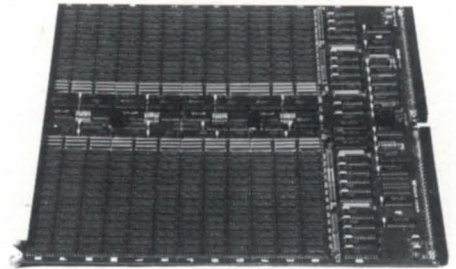
Postalsoft, 4439 Mormon Coulee Road, La Crosse, WI 54601-8231; 608/788-8700.Δ

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ON-LINE HELP

Who to call for answers about NADGUG and FOCUS

NADGUG address:
c/o Danieli & O'Keefe Associates, Inc.
Chiswick Park
490 Boston Post Rd.
Sudbury, MA 01776
FAX: 508/443-4715

FOCUS Magazine address:
c/o Turnkey Publishing, Inc.
Livingston Building, Suite 250
3420 Executive Center Dr.
Austin, TX 78731
FAX: 512/343-7633

NADGUG

Membership, RIGs, SIGs

NADGUG staff **800/253-3902**
(Outside the U.S.) **508/443-3330**

Electronic bulletin board (300 or 1200 baud modem)

Rational Data Systems **415/499-7628**

FOCUS Magazine

512/345-5316

Editorial comments, article suggestions Doug Johnson
(please send product announcements to the address listed above)

Information about advertising Michelle Sentenne

FOCUS back issues Turnkey Publishing staff

Conference Report;
continued from page 3

facility—REORG, for example—and you'll be able to do record-level locking.

On top of all of the work they've done with the product, the ICobol group has started a newsletter. The first one came out last year, and they're trying to get it out twice a year or so. The newsletter, like membership in the ICobol special interest group, is free. Give Tim Boyer or me a call, and we'll get you signed up.

The ICobol roundtable has always been an important part of the conference to me. Soon, it's going to become more important. Data General will be putting the job of prioritizing requests for enhancements where it belongs—in the hands of the users. At the next roundtable, in addition to the usual vital information exchanges, we'll be setting some priorities for RFEs for the development group. This year, some of the requests were:

- Bringing back RDOS's P.A.S.S. for [AOS/JVS and Unix
- ACCEPT environmental variables in Unix and MS-DOS; from what I've seen, AOS/VIS is one of the few operating systems without these variables
- Optional key conversion to all upper case; this way, searching for 'doyle' would also find 'DOYLE' and 'DoYIE'
- The ability to insert octal codes into a file with REORG
- ICobol magtape handing, or lack thereof
- ICobol under SCO Unix
- More alternate keys—at what performance price? How many?

Obviously, we're not going to get everything we ask for. But the best way to make our voices heard is through the ICobol roundtable. And clearly, the more people attending the roundtable, the more attention Data General will give us.

If you want something out of ICobol development, there's only one good way to do it. I'll see you in Kansas City at the next ICobol roundtable. Δ

Dennis Doyle may be reached at 503/641-8772.

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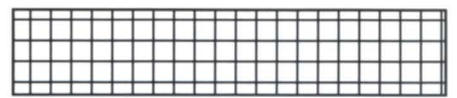
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IN GENERAL

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NADGUG 92 schedule adjusted

Mark your calendars—that is, remark your calendars. The Kansas City NADGUG 92 conference schedule—originally slated for October 12-15—will expand to include October 16 as well.

Most itinerary items will be moved back one day, but stay tuned for forthcoming details from NADGUG officials because changes for specific events are still in the works, says Conference Committee Chairperson **Jan Grossman**.

Excitement of the moment

As this issue of *Focus* went to press, **Data General** was preparing for its big April 7 announcement of the sixth generation of Eclipse MV/family computers: the MV/60000 HA high-end mini-computer system, and the MV/35000 high-performance mid-range system. Also to be unveiled was a high availability disk array subsystem, the H.A.D.A./MV, designed for the entire MV family.

The new products are intended to provide better interoperability with DG's Aviiion open systems servers, along with investment protection through system software compatibility.

A high-level business symposium scheduled April 8 and hosted by DG at Harvard Law School would feature the theme, "How To Win in a Changing World," with demonstrations of the newly announced products and a raft of distinguished speakers: **Lester Thurow**, dean of MIT's Sloan School of Management; **John Naisbitt**, author of the best-selling books *Megatrends* and *Megatrends 2000*; **Stan Davis**, author of *Future Perfect* and *2020 Vision*; and **Tom West**, DG's vice president of advanced technology.

CADGUG's 'A day with BJ' May 18

Make plans to attend the **Chicago Area Data General Users Group's** (CADGUG) "A day with BJ" seminar with featured presenter **Brian Johnson** of BJ Inc.

The Monday, May 18 event takes place from 9 a.m. to 4 p.m. at the Embassy Suites Hotel, 1939 N. Meacham Rd., Schaumburg, Illinois. BJ's subject will be—not surprisingly if you've seen his regular "System Manager's Log" column in *Focus*—system management, performance, evaluation, and solutions.

CADGUG has arranged a discounted rate of \$105 for rooms at the Embassy Suites. Be sure to ask for the special CADGUG rate, good through May 4. There will be a cash bar for before-dinner cocktails.

Dinner is at 6:30 p.m., a buffet priced at \$35 for members, \$45 for nonmembers, with special rates for groups of three people (\$95 for members, \$125 for nonmembers).

After dinner, BJ will reminisce about the early days of Data General Corporation. See contact information below in RIG/SIG gigs. △

RIG/SIG gigs

MAY

May 18

CADGUG (Chicago Area Data General Users Group) seminar.

Location: Schaumburg, Illinois, Embassy Suites Hotel.

Description: Brian Johnson ("BJ") of BJ Inc. will give a presentation on system management, performance, evaluation, and solutions. Seminar schedule is 9 a.m. to 4 p.m., including lunch and two breaks.

Registration: \$175 per person for members, \$225 for nonmembers; for members of other RIGs making reservation through their RIG, price is \$200.

Contact: Jim Siegman, 548 Walnut, Elmhurst, IL 60126; 312/694-5170.

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