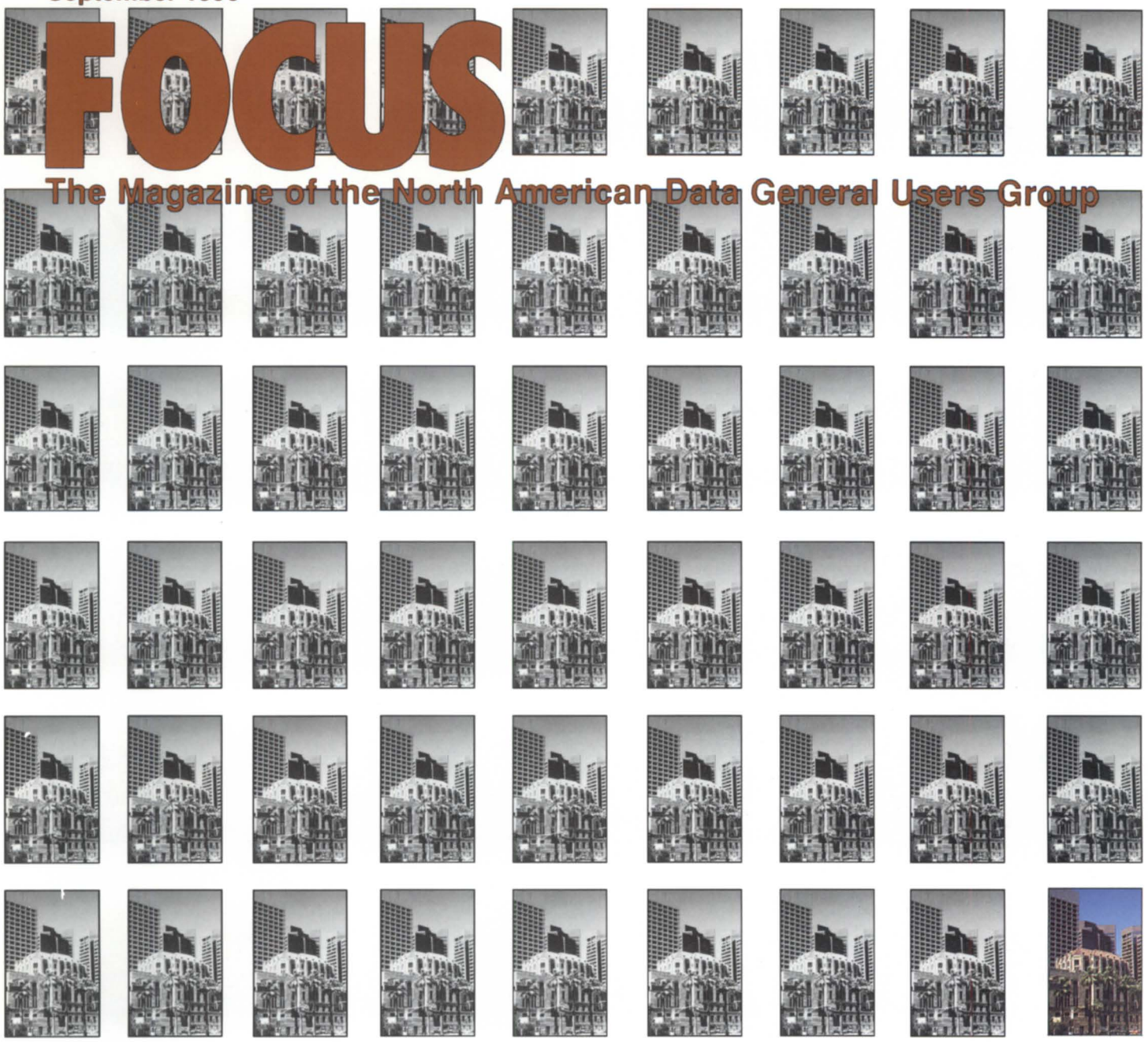
September 1990

FOCUS

The Magazine of the North American Data General Users Group



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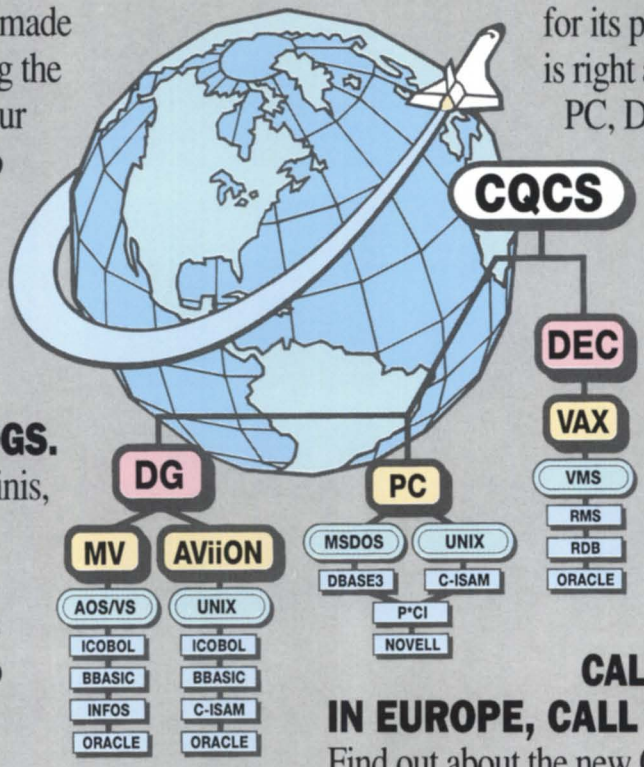

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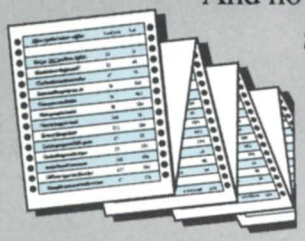

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The Magazine of the North American Data General Users Group

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Cover design by Pat McMurray features a photograph of the Old Courthouse in Phoenix, Arizona (a Data General installation).

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The "b" word

He is a nice and reasonable person. I would never complain about him or any assignment that he gives me, but, I have to admit, my boss gives me some assignments that I like better than others.

This month, for instance, he sent me an interesting e-mail message. It stated something to this effect: "take these 14 pages of copy and squeeze them on to four pages. No editing allowed." No problem, for me. I can't say the Art Department was thrilled, but they did an admirable job of it. The results you will see, if you are a NADGUG member, on the insert between pages 30 and 31 of this magazine.

I didn't say what "it" is, because when you mention the word "bylaws," most people automatically start yawning. I know that a lot of you will glance at those four pages, and your eyes will start to glaze over. Although the changes are relatively minor, the bylaws are printed in their entirety on the advice of counsel. I guess that's a sign that NADGUG has really come of age—we have our own attorney. The changes in the bylaws reflect adjustments to the needs of our organization as it matures.

For those of you who don't want to read the whole thing, on the first page of the insert, NADGUG president Lee Jones provides a convenient summary highlighting the changes in the bylaws. You have no excuse not to know about them.

Voting on the new bylaws will occur at the annual General Business Meeting of NADGUG, which will take place on October 24, at 1 p.m. during the NADGUG conference. In addition to bylaws changes, members will elect new officers for the coming year. On the election slate are:

Dennis Doyle, vice president
Tim Boyer, recording secretary

Under NADGUG bylaws, the vice president automatically succeeds to the office of president. Frank Perry will automatically move from NADGUG vice president into the presidency.

NADGUG officers urge you to attend the General Business Meeting. As a voting member, you are needed both for quorum and for input. However, if you are not able to attend the NADGUG General Business Meeting in Seattle, you can absentee vote or assign your proxy by using the card attached to the bylaws insert. It must be returned to NADGUG offices by October 12.

Speaking of elections, bylaws, and such, this month *Focus* brings you a close look at an area where Data General is concentrating its sales efforts—local and state government.

For a special treat, we asked automation managers from several entities how they sell their bosses on new technolgy. Their responses are placed throughout the "Focus on:" section.

While it's fun to look at what people are doing with DG computers in their home towns, there is an important reason to examine these so-called vertical markets. The future of Data General depends on their success.

It's no secret that Data General has had a major "reduction in work force," as it is blandly called. With less people to deliver the DG message, the company must focus its attention on those areas that bring the best results. Data General executives are voting that its installed base in the "Municipal leagues" will remain stable, and that new opportunies will appear as local entities are forced to become more efficient. Δ

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The Magazine of the North American Data General Users Group

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RIG/SIG reports: This won't hurt a bit!

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The **NADGUG Executive Board** will meet in Seattle, Sunday, October 21, prior to the annual NADGUG Conference. All NADGUG officers and RIG/SIG leaders are encouraged to attend. Any new regional or special interest groups wanting to petition for recognition should be prepared to do so at this board meeting. A list of officers and activities to date must accompany a written request for recognition.

It is also time for **RIG/SIG report presentations**. These reports are wonderful sources of information. They are painless to do, and they are *required* of all recognized regional and special interest groups. All interest group leaders should have received their report forms by now. The form must be completed and returned to me by **October 12.** Please submit a copy of your report to the NADGUG office to ensure that your group is represented, even if you plan to attend the conference in Seattle.

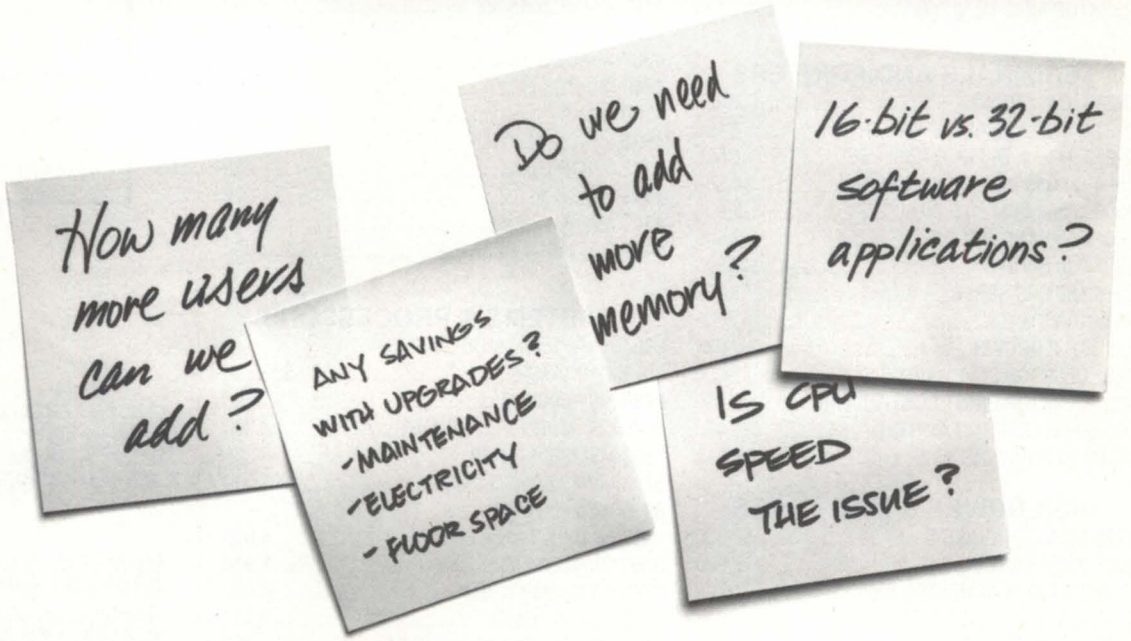
Remember to check out the special discounts on airfare offered through Data General's Corporate Travel office. Call 1-800/343-1284 or 508/366-8911, ext. 1000 (outside the U.S. or in Massachusetts).

And did you know . . . NADGUG provides each recognized interest group with one free conference registration? Valued at approximately $400, the registration is for your group to award as it sees fit to any individual member.

If you have questions or concerns, please feel free to call me. I'm here to help.

■

IN THE DARK v



With the NADGUG 90 Conference upon us, it is important to remember that, as with any organization, the success of NADGUG relies on its members and their involvement in activities such as this conference.

The next **General Business Meeting** of the North American Data General Users Group will be held in conjunction with the NADGUG annual conference in Seattle, October 24, at 1 p.m. All members in good standing are eligible to vote on items brought before the meeting, which will include revisions to by-laws, and election of officers. If you are a member of NADGUG, your September issue of *Focus* will include a **General Business Meeting Announcement and Proxy.** In accordance with NADGUG's by-laws, any member in good (current) standing may, by written proxy, authorize any other member to vote in their behalf. If you do not plan to attend, the Executive Board urges you to **exercise your right to vote** by filling out and returning this proxy card. To be eligible, proxy cards must be received at NADGUG offices no later than October 12, 1990.

■

The first **Oracle for Data General** special interest group meeting will take place at the NADGUG 90 Conference on Tuesday, October 23, from 6 to 6:30 p.m. The program will feature a presentation about Oracle for Data General, and a round table discussion with key Oracle marketing and development staff. Finally, an assessment of the DG/Oracle Users Group (DOUG) will be presented.

This meeting is open to all NADGUG members currently using Oracle, or those merely seeking information. For more details on this meeting, or on DOUG, please contact Oracle's **Laura M. Pickering**, of the Data General Minicomputer Product Division, at 415/598-3528.

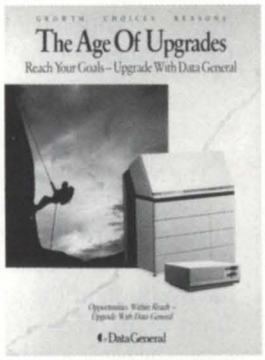
■

The **Virginia Beach Credit Union Users of Data General Equipment** held its May meeting at the Virginia Beach Hilton. **Pam Musick** of Langley Federal Credit Union organized an outstanding program that featured a variety of vendor presentations, and a range of topics from disaster recovery and optical disk storage, to strategic management planning.

Representing NADGUG was **Steve Pounds** of Security Forces Inc., with a presentation on the benefits of membership in NADGUG, and the advantages of becoming a recognized special interest group. Pounds distributed copies of *Focus* magazine, NADGUG membership information, and NADGUG '89 conference T-shirts. The afternoon of the gathering was devoted to an exhibit hall and its showcase of exhibitors.

For additional information on the May meeting or the above interest group, contact Pam Musick of the Langley Federal Credit Union at 804/825-7131.

S. IN THE KNOW



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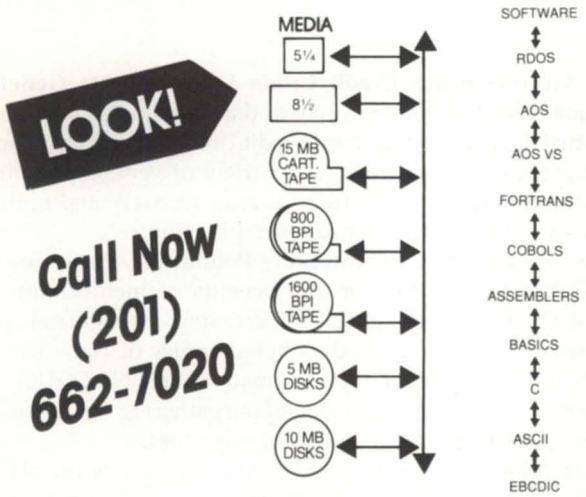

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ROUNDUP

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The **Los Angeles End Users of Data General Equipment (LA EDGE)** will meet at the Brookside Country Club in Pasadena on Tuesday, September 11, at 7 p.m. The newly elected board will announce the theme for the evening's program, as well as topics for future meetings.

Bernie Abrams of Librascope Corporation has been elected president of LA EDGE. Bernie has been involved with LA EDGE since its inception five years ago, and has pledged to lead the regional interest group (RIG) to new heights during his presidency. Recognizing the importance of stable leadership, LA EDGE acknowledged that they were fortunate to have a great club president—**Doug Panelley**—during the 89/90 season, and expressed sincere appreciation for a job well done.

For more on LA EDGE and its activities, contact **Mark Speer** of Zero Halliburton at 818/897-7777, or **Marida Slobko** with Information Resources at 818/351-0481.

■

The **Chicago Area Data General Users Group (CADGUG)** remains committed to meeting the interests of its constituency, as was demonstrated with the June and July meetings. The June meeting was hosted by **Steve Frescos** of Federated Foods, Inc. Selecting the topic of disaster management from a recent member survey, CADGUG chose representatives from Data Assurance Corporation and Computer Engineering to discuss how to sell disaster management to your company, and how to initialize such a program.

The July meeting, hosted by Data General Educational Services, featured **Jerry Auge** of DG Educational Services. Auge led a discussion on macros. Members were encouraged to bring questions or ideas for building better macros to the meeting.

For September's meeting, the group has selected the topic "Follow up to Data Base Management." For details on this meeting, or additional information on CADGUG, please contact **Chuck Goes** of Datamark Corporation at 708/673-1700.

■

The **Metropolitan New York Data General Users Group** (NYC & NJ) held its May meeting at the Bobst Group Inc. facilities in Roseland, New Jersey. Newly elected RIG president **Gary Gittleson**, also of Bobst Group Inc., maintained that in keeping with the tradition of the group, meeting locations would vary in an effort to accommodate membership in the entire Metropolitan area. The topic for the program was "Comparing Data Bases for Data General MV Systems."

The September meeting is scheduled for the 15th at the DG office in Saddlebrook, New Jersey. This program will focus on PC connectivity. For additional information on these meetings, please contact Gary Gittleson or **Lee Fisher** at 201/226-8000, extension 302. Δ

Greg D. Goss is the RIG/SIG coordinator for NADGUG. He may be reached at ***Focus*** *magazine, 4807 Spicewood Springs Rd., Suite 3150, Austin, TX 78759; 1-512/345-5316 or 1/800-USR-GRUP.*

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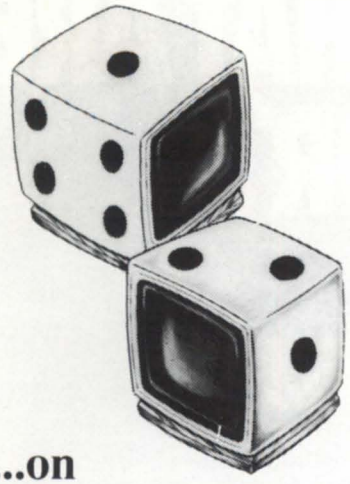

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The making of a conference

by Jan Grossman
Special to Focus

I hope you've noticed our persistent message in this magazine, in your mailbox, and in other places, that we'd really like you to attend the 1990 NADGUG Conference in Seattle. The conference is an invaluable opportunity for you as a user of Data General equipment to network with others with the same interests and concerns.

As chairperson of the NADGUG Conference Committee, I'd like to tell you about some of the behind-the-scenes work that goes on in preparation for the conference.

Members of the Conference Committee comb through the hundreds of responses to our call for papers, and carefully select presentations to be given at the conference. Our goal is to provide quality sessions with quality speakers.

Different committee members review topics for the "tracks," which are aimed at different audiences. The tracks are management, end-user, technical, and, new this year, Unix. We have also added a track for topics that deal specifically with our conference theme, "Connecting for the Future."

In addition to the tracks, there will be three special panels. The system manager's and operating systems panels have been merged into one, primarily because the two panels attract the same audience. We will also present an office automation roundtable, and a new panel this year features an in-depth discussion of the conference theme.

Selecting the conference theme is a whole project in itself. Part of the responsibility of Conference Committee members is to research the Data General community, and determine what is of prime interest to users of Data General equipment. Armed with this knowledge, and looking at past themes, we develop the conference theme, which underscores many of the conference activities.

The conference committee also selects keynote speakers. This year, we're proud to present Norman Weizer, senior consultant with Arthur D. Little, who specializes in technology forecasting and strategic planning. Speaking on behalf of Data General will be Stephen P. Baxter, director of marketing.

When it's time to set the conference schedule, the fun really begins. We don't toss darts at the proverbial dart board, although that would be easier. Instead, our scheduling tools consist of colored post-it notes and large easels with grids. In addition to coordinating sessions so that different tracks are offered at the same time, we are very careful to allow time for attendees to visit the exhibit floor.

We do everything we can to make the conference an enjoyable experience for all. Day tours and other activities are arranged for spouses. Post-conference tours allow attendees to spend extra days enjoying the surroundings of our scenic host city. (By the way, if you stay in Seattle through Saturday, you can save on airfare.) Through Data General Corporate Travel, NADGUG members may obtain discounts on air travel. Call 1-800/343-1284 (or 508/366-8911 in Massachusetts or outside the U.S.) for more information on travel discounts.

Planning a conference is a complex process, requiring extensive coordination between many people from Data General and the user community, but the end result is a fun, useful, informative, and rewarding conference. I hope to see you there! Δ

Jan Grossman is Information Services manager for H.A. Holden, Inc. of Minneapolis, and chairman of the NADGUG Conference Committee. If you would like to attend the 1990 NADGUG Conference and have not received a registration kit, please call 1-800/USR-GRUP or 1-512/345-5316 (outside the U.S.).

TODAY'S TOP NETWORK NEWS.

New SmarTerm 470 for File Servers is the first terminal emulation software to provide multi-user access to DG hosts. Now PC users on networks have even more to gain with SmarTerm 470.

Along with higher speed and lower memory requirements, our new SmarTerm® 470 version 1.1 is available in a multi-user version. That's the kind of good news every network manager and PC user really likes to hear.

New SmarTerm 470 for File Servers is easy to manage and offers precise color graphics and text terminal performance on networks. SmarTerm 470 and SmarTerm for File Servers provide full D470C emulation in 16 colors, extended color mapping, arcs, bars, lines, reduction scaling plus horizontal and regional scrolling to give people sitting in front of PCs the look of a dedicated terminal at a fraction of the cost.

Mouse support, a window-based interface, and on-line help make the power to access DG® host systems easy to gain. In fact, SmarTerm users will grasp more with advanced file transfer features, background operation, plus a full complement of convenience and communications features not found on the D470C.

For simple text applications, SmarTerm 400 faithfully duplicates the performance of virtually every Dasher® text terminal currently in use while delivering advanced PC-to-the-rest-of-the-World communications features.

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Upgrade and automation ideas pass many an MIS director's desk, but without the necessary approval, they become merely wishful thoughts. Perhaps no one understands this better than professionals who work for state and local governments.

Selling the idea of high-technology on a no-frills municipal budget can test a professional's powers of persuasion. We asked the experts in the municipal league how they do it. In the "ovals"on the following pages, professionals in charge of computer automation share secrets on how to convince your boss to purchase needed technology —no matter who you work for.

Build trust between you and management

It helps to focus on worse case scenarios of what could happen without a certain revision or upgrade. Also, "pet-project" or high-citizen-profile project upgrades have a better chance of passing. Highlight these hot items.

For department approval of expenditures, explain "here's what we have, here are the consequences of not implementing." Communicate what the upgrade means operationally, not bits and bytes. For example, they'll understand slow response time, lack of disk storage space, etc.

Keep it simple, based on need, and there *must* be trust between you and management. But the bottom line is, if the money isn't there, you can't have it.

—Robert Kogan,
Data Processing Manager,
City of Phoenix, Arizona

Coming soon to your home town?

Bob Rothschild, DG manager of Government and Education Industry Marketing

SYNOPSIS

Data General aggressively seeks local and state government clients, building on an established base of successful installations. In Louisiana, Aviions track exploding pipelines.

by Lori Rhea DiSorbo
Focus staff

"The government market place offers, in spite of what you hear about budgets and cutbacks, terrific potential. They tend not to go out of business, and they are very loyal customers if you treat them the way you should," declares Jack Rothschild, Data General Manager of Government and Education Industry Marketing. Rothschild is optimistic about the future of Data General in local government, especially as he sees DG sales in this arena remaining constant, while other vendors' sales decrease.

A changing industry

Rothschild believes that Data General's key strength in this market is its ability to adjust to changing demands. "The government market has been downsizing. The sale of minicomputers and mainframes has been decreasing, while the sale of PCs and workstations—the client /server environment—has been increasing astronomically. We have been able to focus in on this market and enhance open systems solutions. We also have good solid software providers on the MV side."

Further, Rothschild explains that DG is pursuing new marketing strategies, including more emphasis on customer testimonials. "Probably the number one reason why an agency buys a system, besides needing the right solution, is the fact that somebody else has already installed it and had a positive impact." A second tactic is a shift in focus in the local government market. Rothschild explained, "In the past, Data General had mostly a geographic focus on this market, without anyone corporately tying programs together to meet similar needs around the country. Now, that is my function—to show different people around the country how we've been successful in

certain government areas, to develop a corporate focus. We can take successes from one area, and bring them quickly to other areas."

Focused vertical market

Data General must maximize its resources by exploring vertical markets that optimally match with DG solutions. The local government arena is one of these very focused markets. Rothschild goes on to explain, "*Within* the government arena, we have to limit even further where we put our resources based on where we think we have the best opportunities. We focus on the segments of an industry that we feel we can best service. Within the local government arena, for example, we focus on financial and administrative applications, as well as standard departmental applications such as tax billing and assessing, clerk functions, voter registration, census, licensing, utility billing, etc. In state government, the focus is on these areas: natural resources, public safety, CAD (computer-aided-dispatch), automated records, E-911, hazardous waste, human services, revenue taxes, executive information systems, CEO, data base systems, computers in legislature, and GIS (geographic information systems)."

GIS

Data General began developing a specialized GIS a few years back. Since then, the program has grown considerably, generating applications in a variety of spheres. DG contacts that provide GIS solutions include ARC/Info, Pamap Graphics Ltd., and DMS Infocod.

Rothschild asserts that, "GIS vendors are interested in working with us because of our hardware platform. We have a unique setup to address this [growing market]. We have hundreds of existing government accounts, and the GIS is something that most every government agency can have a relationship with. Facilities who already have DG accounts can take the GIS product today and implement it immediately with the current DG equipment they have."

From fire stations, to utility departments, to police departments, to emergency rescue services, to hazardous waste agencies, all of these organizations can utilize the services of a GIS. With a GIS, factors such as the location of underground wires, fire hydrants, hazardous chemicals, contour of the land, and criminal history of residents, are tabulated and easily accessed in the form of maps and charts.

GIS applications

In the next few years, federal mandates will open the door for Data General to introduce more GIS solutions to the local government market place, Rothschild predicts.

One example of an ideal GIS application, Rothschild said, is a highly visible one—the 1990 U.S. Census. In compliance with a federal redistricting mandate, and in conjunction with 1992 federal elections, districts will be reassigned based on census results, an event that occurs after every ten-year census. Consequent redistricting will have a direct effect on Congressional seating, not to mention several social concerns addressed in the census, whose data could be efficiently tabulated by a GIS.

Another federal mandate, SARA (Superfund Amendment and Reauthorization Act) Title III, has generated opportunities for the implementation of GIS programs. SARA Title III makes federal funding available to clean up hazardous chemicals and other waste. "It is a fairly involved regulation . . . [that] addresses issues like emergency preparedness," Rothschild said. "It inventories hazardous items, and treatment and reporting of hazardous waste disposal or release—for example, if a chemical spill occurs, or

Communicate

You have to speak English. You always give them the benefits of the equipment. That helps your sale. Show them what you can do short term and long.

Also, tell them about equipment that they can use to communicate with other people for various information, for instance, modems. We have Data General modems that we use to dial up a legislative service, and, we use facility X software on the MV that they can use for communication.

—Sharron Hawkins, Systems Manager, State of New Jersey

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Get the big picture

All requests must be cost-justified—they must be shown to help the whole group, not just a particular department. Also, because San Marcos has a low number of city employees per citizen, many services have been automated. As a result, any request for new technology is accompanied with the question "how many more employees are you going to cut?" This attitude must be overcome—directors must see that automation will instead save them from having to hire more.

Another misconception to disprove is that requests for new technology are wanted only so employees have less work to do, not so that they can finish work that can't presently get done. The difficulty [in selling computer technology] is that it is hard to visualize when compared to replacing roads and sewage systems. It's easier to sell more visual technology such as public safety benefits from a GIS (geographic information system) program.

—Ramona Brown,
MIS Director,
City of San Marcos, Texas

gaseous waste is dispensed into the air." A GIS would be able to efficiently, and safely keep track of hazardous waste areas.

Energy emergency plan

Mary Mitchell, undersecretary of the Louisiana Department of Natural Resources, worked with the U.S. Department of Energy to put together a statewide energy emergency plan based on a GIS program. In the course of putting the program together, it evolved into a comprehensive energy information system.

"It is a multi-phase program. Initially, it started out that our plan when completed would be a major component of a statewide emergency plan administered through our state Office of Emergency Preparedness. We would go into each parish (county) and integrate whatever information was applicable to that parish as it related to energy emergencies," Mitchell said.

One such emergency might be an exploding pipeline. "Back in 1988," Mitchell said, "a refinery had a big fire. If the fire is contained in what is called the fence line, it's the responsibility of the company. Once it gets outside the fence line, then all kind of things come into play. Even if you do everything right, you can still loose control. Now, Louisiana will have access to what type of chemicals are stored, and where they are located.

"We also now have features in our software that will allow us to network all of our streets, so if we have to evacuate, the computer can, in literally seconds, find us the best route based on . . . factors such as speed limit, time of day, and location of stop lights.

"We're hoping to also [aside from energy emergencies] be able to track from an oil or gas well what is being produced, where it goes, and how it gets there. We want to be able to know what's happening at a well head, what refinery the oil or gas is going to, (or if it *is* going to any refinery), is it being shipped out of state, and if so, what state is it going to. There are several reasons for wanting to know

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this. Number one, for example, back in December during a terrible freeze, we did not have the information to tell the Department of Energy where stockpiles of Number 2 heating oil or propane gas were to be able to provide it to the Northeast where they were suffering so terribly."

Mitchell's department uses Aviion workstations and Infocad software, from Digital Matrix, a company out of Miami, Florida. She contends,"We felt very comfortable going to Data General for the hardware. Our primary concern was, you can train as many people as you want, but if you've got an emergency, who's going to be in that Civil Defense Center? The *one* person that has not been trained. So, we had to have equipment that was easy to use. We had to have a system that was very user-friendly. The software is menu-driven and literally, if you can read, you can operate the system."

The Department of Natural Resources is already planning to updates its series 300 workstations to the 400 series. "One thing we liked about Data General was the fact that you could upgrade these workstations—and the equipment is just good, reliable equipment. Another thing we looked at, one of the biggest concerns anybody that fools with computers has, is loosing data. On the Aviion, there is a feature that automatically saves data in 30 second increments, so if you loose power, the most that you can loose is 30 seconds of data," Mitchell said.

Combating a "no-frills" budget

What if a local government agency is in the common position of lacking necessary funds for computers and upgrades? Rothschild said that Data General can help an agency look for creative sources of funding, including the federal government. "For instance," Rothschild said, "programs implemented in the State of Louisiana were funded largely by the federal emergency preparedness department. Also, computer-aided-dispatch is a hot area right now, and because this is a highly sensitive area—it is important for people to be able to respond quickly to emergencies—many local government agencies are *making* the money available for this application. Finally, we do have a leasing option which allows clients to take whatever number of years they select to pay for a solution, and these leases include a clause that says, if funding becomes unavailable, the lease can be terminated without further payment."

With close to one hundred employees working directly in the local government market place (which overlaps with the government education market), and many more working indirectly in this market, Data General has dispatched the troops, in a manner of speaking, in order to capture an increasing share of this lucrative and stable market. Δ

Jack Rothschild joined Data General as Government Marketing manager in January 1990. He has 18 years experience in marketing and sales to state and local government, working for Wang Laboratories and NCR Corporation.

QUESTION?

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Rack Mountable	YES	NO	YES	YES
Tabletop Enclosure	YES	YES	YES	YES
Automatic CPU Sharing	YES	NO	Manual	Manual
Number of Shared CPU's	6	0	2	2
Supports ANSI Labeled Tapes	YES	NO	YES	YES
Runs DG DMTRELI	YES	NO	NO	NO
Runs all Revs AOS/VS & VSII	YES	NO	YES	YES

FEATURE COMPARISONS OF 1.3GB - 4MM TAPE BACKUP UNITS

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Price Includes Controller	YES	Not Available	Not Available	Not Available
Rack Mountable	YES	Not Available	Not Available	Not Available
Tabletop Enclosure	YES	Not Available	Not Available	Not Available
Automatic CPU Sharing	YES	Not Available	Not Available	Not Available
Number of Shared CPU's	3	Not Available	Not Available	Not Available
Supports ANSI Labeled Tapes	YES	Not Available	Not Available	Not Available
Runs DG DMTRELI	YES	Not Available	Not Available	Not Available
Runs all Revs AOS/VS & VSII	YES	Not Available	Not Available	Not Available

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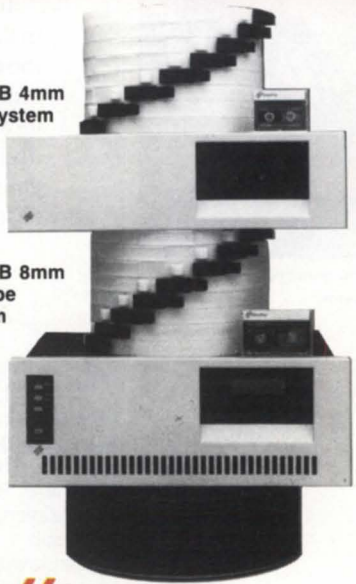

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Data General at the grassroots

SYNOPSIS

The nuts and bolts of city government take the form of permits and appraisals, mills and bills, sprawling suburbs, transient populations, and the occasional underground sprinkler.

Dee Williams, system manager, East Lansing, Michigan.

by Michael E. Marotta
Special to Focus

Local governments have found Data General systems to be powerful, cost-effective platforms for the software systems that manage taxes, voter registration, and other applications.

To most people, local government means the *city* in which you live, whether the one and only New York or the ubiquitous Springfield. There are other kinds of local governments, however. States are divided into counties. Counties are organized according to several broad plans, based on 18th century colonial government. New York, Virginia, and Massachusetts served as models for defining the powers of counties. In states like Michigan that followed the Massachusetts model, counties are subdivided into townships.

College city

East Lansing is an incorporated city. It is the home of Michigan State University. The town's proximity to the state capital, with its own mix of public sector and automotive industries, contrasts with the fact that 16,000 permanent residents coexist with 40,000 students.

At City Hall, system manager Dee Williams is responsible for an MV/1000, two MV/2000s, a DG 10, and two DG 20s. Currently, the DG 20s are used for processing rental licenses and applications for housing permits. "We designed the building permits system ourselves," she said. "It was then written by First Computer of Ann Arbor." Among the impacts on the design are the needs to control housing density and identify historically significant buildings.

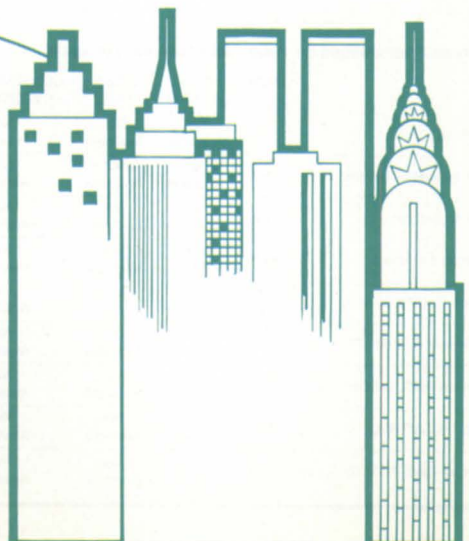
Housing appraisals are tied to taxes. Williams notes that each appraisal record carries 97 fields and also points to vector

Have patience

Technology [at the New York City Council] was sold before I came into the picture. I was hired specifically for the purpose of getting a computer system into the Council. The City Council was behind the times—there was very much a need for computerization, so justifying new technology is not difficult.

The paperwork is what is cumbersome. I may not see needed equipment 6 to 13 months after it is chosen because so many different people are involved in approval and review, and the procurement process is changing this year. The biggest difficulty in obtaining new technology is not the budget, but the time it takes to pass a proposal through bureaucratic lines.

—Rich Tibbets,
Legislative Systems Manager,
New York City Council



No surprises

Planning is the key. It always works better if you can project into the future and plan what will be needed. If something happens and you didn't account for equipment that becomes necessary, you may have to cut back on an order that was expected. But generally, if you discuss with the budget department what your upcoming needs will be, they will be prepared when the time comes to provide the money. As with any legislature, nobody likes surprises. If you plan ahead of time, they can think back and say, "Yes, we already heard about this. It's OK."

Systems Analyst,
State of Vermont

sketches of the floor plans. (There is also an offline laser disk system that stores a photograph of every property in the city.) Recently, the entire appraisals data base was verified with onsite inspections. "We took the current field card out and inspected each building. We update and correct via onsite inspection every three years," Williams explained.

Water meters are read by computer and the data is placed on PC diskettes. From there the data is transferred to the DG system. Previously, reading meters was an ongoing task, requiring about two weeks per section. Now the use of water translates to a bill within 24 hours. About one-third of the city is billed each month. The fourth "section" of the city's water customers consists of those people who have elected to have their underground sprinklers billed separately.

In addition, East Lansing has another special situation that impacts on the requirements for billing water usage. In a town with constant turnover in shared housing, tenants are responsible for paying their water bills. Ultimately, of course, the landlord is held accountable, but the city works with its landlords to bill tenants for previous services as they move from housing unit to housing unit.

"All of our programs are written by First Computer of Ann Arbor," Williams said. "We were already computerized for 15 years when we looked at their response to our RFP [request for proposals]. They customized for us. Now they have an X-version [a standardized package] in taxes, but water is still custom. Payroll will probably stay custom because we have unions, and Public Works is connected via modem and they do their own payroll out there.

"When I was writing the RFP, the first thing we did was look at the way we did business. Then we went to trade shows and I was impressed with Data General. By 1980 there was no longer that much difference in hardware—the differences were in the company, in the philosophy. I was always treated well by DG." That's the reason that the city of East Lansing uses its Data General computers for building permits, rental applications, appraisals, taxes, voter registration, and also runs Wordperfect and CEO office automation.

In May of 1980, First Computer installed a CRT and a modem to Ann Arbor and training began. When the S/140 arrived in October, the City of East Lansing was up and running. Naturally, Williams has only praise for DG and her VAR. She tells of the one time in 10 years when they were down, how they worked together to process three payrolls in one weekend and "God Himself came from Massachusetts to install a board."

In East Lansing, 16,000 permanent residents pay taxes on 6,600 parcels to provide services for 40,000 students and several thousand teachers. It is not surprising then that Dee Williams expects to get the most for her money. The city is upgrading its hardware, but they still run several of the original Dasher D3 terminals that arrived in 1980. "The only thing that bugs me is that Data General doesn't have the name recognition that IBM does when I'm out there at trade shows bragging about our system."

Bedroom township

Delhi ("Dell-high") Township is five miles south of East Lansing. Just drive down College Road to Holt Road and turn right. Township assessor Jim Felton says, "Some people who live in Delhi think they live in Holt." In fact, there is no such place. There's a high school by that name, but no city limits, no mayor,

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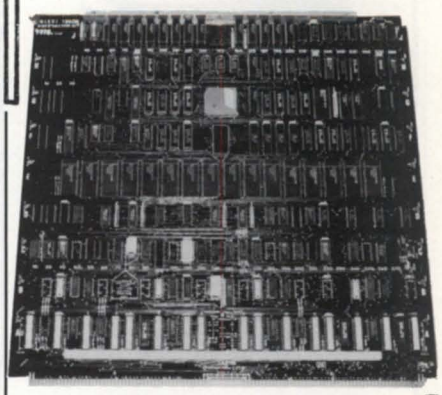

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no police. Local government in Holt begins with Delhi Township. About 20,500 people live in a township that was 90 percent rural just 20 years ago, and is now 90 percent suburban.

Felton oversees the operation of an MV/2000 that he just upgraded with an additional 160 MB to double its capacity. The MV/2000 supports six DG Dasher terminals. In addition, a PC has been loaded with terminal emulation software in order to facilitate the processing of building permits and inspections. The PC will also handle Wordperfect when a networking version is installed later.

Felton collects about 67 mills (6.70 per $1,000 assessed value) from 13 separate millages passed by various collections of voters over the years. There are 10 separate taxing districts that impact his township.

Obviously, the software has to do a lot of work. Like the city of East Lansing, Delhi Township relies on First Computer Corporation of Ann Arbor. First Computer provides software for payroll, sewer, taxes, appraisals, purchase orders and claims, and voter registration. Taxes are tied to a point-of-sale cash register terminal in the assessor's office.

Day-to-day activities are centered around the inquiry program that allows the township to query building permits and inspections, assessments, and sewer service by keying in the address of the property in question. This seems straightforward enough, but note that these are separate data bases and therefore the inquiry is acting as a relational data base management system.

Among the reasons why Felton has been more than satisfied with First Computer is its policy of ongoing enhancements. "We got a new sort," he said. "Sorting 6,000 records used to take 19 minutes. Now it takes two minutes." This is extremely important because Delhi Township is growing at a phenomenal rate. Nearby Meridian Township, an upscale suburb focused on a major mall and home to nearly 20 computer-related businesses and about 40 restaurants, has placed a ceiling on new growth. "We're growing so rapidly," Felton said, "that we are having a hard time keeping track of the assessing."

Delhi Township had been running on a Nova 4X/16 until April of 1987 when it acquired the MV/2000. Felton's mandate to stretch a buck is reflected in the township policies on purchase orders. The town attempts to buy locally, so it has a lot of small vendors and this means a lot of processing. Using first the Nova and now the MV/2000, the township issues vouchers that go to the Township Board. From there, a purchase order is issued, and bills are posted according to a line item budget. When the goods are received, checks are printed. The checks reflect consolidated payments and so must show each item paid for.

Involve senior management

First, there should be a senior management team involved in the computer technology. Also, before you buy anything, the need must be defined. We develop a five year plan and generally try to abide by it, though we revise every year. The problem is, of course, that technology changes so rapidly. There's a real difficulty with non-users misunderstanding computers and having expectations that are too high. Expectations are for technology to deliver more than it is capable, and often times people get caught up in early hypes about equipment.

—Burt Young, Data Processing Manager, City of Sault Ste Marie, Ontario

Grassroots government

The situations and special needs of East Lansing and Delhi Township underscore the reasons why Data General hardware is the preferred choice of people who can only afford the fastest, most reliable equipment. Since neither community employs a programmer, they also look to their VAR for more than reliable products. First Computer works with its clients, defining and meeting special needs and then generalizing these into standard software packages.

The private sector tends to write off governments as places where inefficiency, territoriality, and buckpassing rule the day. Yet, which is the more difficult case: the customer whose order is not in the data base, or the voter whose registration is missing? Δ

Michael E. Marotta is a technical writer with a decade of experience on Data General and other equipment. He works in manufacturing and business environments.

No chickens here

by Kent Finkle
Special to Focus

SYNOPSIS

E-mail can help bridge the gap between geographically separated government agencies, and help speed up the approval process for new projects . . . like a House o' Chicken on the town common. And, when e-mail draws reluctant computer users into the system, their fears fly away.

Today's tight fiscal budgets force local governments to search for ways to improve the flow of information between departments at reasonable costs. Electronic mail from Wordperfect Corporation has been invaluable in our efforts to accomplish this goal through automation.

E-mail in a geographically distributed network

The Town of North Andover has an MV/7800 XP system geographically distributed over 11 buildings located in various parts of the town. Office buildings include seven schools, Public Works, Police, Fire, and the Town Hall. Coordination of activities in the town presents a major challenge to government employees.

Planning is crucial in a municipal setting where frequent interactions occur between the Planning Department and other Town offices that are geographically separated. Electronic mail technology facilitates the activities of the Planning Office. E-mail assists in a complex approval function, helps citizens comply with certain laws and bylaws, and carries out these tasks at the lowest possible cost to taxpayers.

Expediting town developments

Typically, the planning process begins when a developer wants to put up a

Involve end-users

Since our City Manager is the person whose foresight led us into computerization in 1981, convincing him of the need of software revisions to existing applications has never been difficult. Also, my dual position of Municipal Clerk and Data Processing Manager offers the opportunity to follow the budget process closely. The key to software revision for us has been convincing the user department of the necessity by understanding their perceptions of existing program imperfections. Although the cost is not absorbed in the user department's budget, the headaches of conversion are borne by those employees. Close cooperation with the user departments, constant contact with our software supplier to remain current on their research and development efforts, and communication with top level staff are essential.

—Laurie Lane,
Data Processing Manager,
City of Duncanville, Texas

Form a Data Advisory Board

Computer acquisitions at the County of Marquette are made through the County's Capital Budget process. Departments request computers and peripherals, and the Data Processing Manager will then prioritize the request and recommend purchases to the County's Data Advisory Board.

The Marquette County Data Advisory Board consists of five elected officials and two department heads. The Data Advisory Board will review . . . requests, and recommend purchases to the Board of Commissioners.

The advantages of the Data Advisory Board are twofold: a majority of the members are full time employees and are accessible for questions and education on . . . recommended purchases, and the positions they hold in the County structure provide political strength to the final purchase recommendations.

—Brent Nault,
Data Processing Manager,
County of Marquette, Michigan

House o' Chicken on the town common. First, the developer visits the Building Department. The Building Department sends an e-mail message to the Town Planner asking if the Planning Office is aware of the proposed development. If it is not, the Planning Office responds with a message that the developer must first contact the Planning Office.

The applicant then visits Planning and submits plans for review. These plans are e-mailed by the Town Planner to the Health Department, Department of Public Works, Police Department, Fire Department, Conservation Office, Building Department, Director of Planning and Community Development, and the Town Manager.

Short messages are typed directly into the e-mail system. Longer messages, or those requiring functions of the full Wordperfect word processor, such as spell check or the thesaurus, are typed in the word processor and sent by a special function of e-mail. If very extensive documents need to be transferred by e-mail to several participants, transmission of records can take place after hours, when idle system resources are available.

In selecting a meeting site to discuss the projected development, the Planner sends an e-mail message to the Town Manager's office, requesting a list of available times for the Town Hall conference rooms. As the message arrives, regardless of what program is running on the computer, the screen "beeps" to inform the recipient of the message. The Town Manager's office sends a list of times to the Planner, who then chooses a room for the meeting and several days and times that fit the meeting schedule.

To expedite this process, the Wordperfect e-mail system allows the creation of Groups. The Planning Office has created a Group called the TRC, short for Technical Review Committee. When a single memo has to be sent to all the departments mentioned earlier, the Planner merely enters the group name, *TRC*, and each member of the TRC automatically receives a copy of the message.

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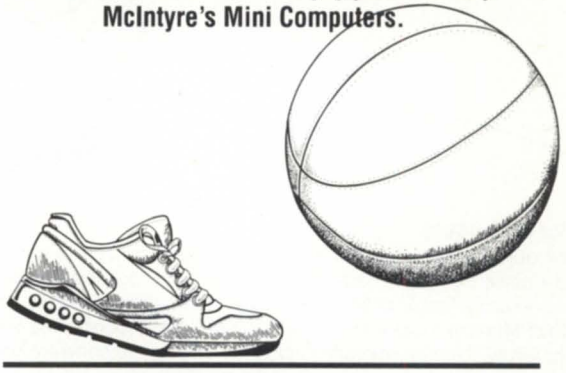

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Once a time and date is agreed on, an e-mail message is sent to group members with the selected information, plus a brief description of the proposed project, a request for questions and comments, and a request that the recipients of the message respond within a certain time frame.

At any time, the Planner can determine who has received, opened, and responded to messages. The Planner is automatically informed on computer when a message is opened, regardless of what is running on the computer. The Planner can also print out or save to disk the date and time messages were sent and received.

Copies of the plans for the project are distributed by non-electronic means. The Departments review the plans, and respond to the plans via e-mail. Some of the responses may take the form of questions or requests for clarification, while others may involve specific objections to the project. For instance, the Fire Department might send a list of potential fire hazards involved in the project. The Planner saves each of these messages from all departments, and assembles them into one document.

Sharing data made easy

Any type of AOS/VS file—spreadsheets, data files, ICobol programs, documents—can be sent over the e-mail network, allowing nearly transparent sharing of data without the security problems of MOVE and COPY commands.

Naturally, no manual cutting, pasting, or re-keypunching is required. All the work is done from the terminal. After editing the messages, a single Wordperfect agenda is created. This document is then sent by e-mail back to the participants for review so that each participant can review the comments of all the other participants prior to the meeting. Each participant will, in most cases, make a print-out of the final agenda and bring it to the meeting. However, as a backup, the Town Planner will print out enough copies for everyone and bring them to the meeting, as well as copies for the applicant.

The various TRC members then meet with the applicant to discuss issues concerning the projected development. The conversations are recorded on audio tape. After the meeting, the Planner transcribes highlights of the meeting and e-mails copies of the minutes to participants.

The applicant must then modify development plans to conform to Town requirements and resubmit a proposal to the Planning Office. The review process repeats itself until all parties are satisfied.

When a plan of action is agreed on, the Town Planner creates a final order of project conditions. Again, almost no manual operations are involved. The requirements are copied and pasted from existing documents, minutes, and messages; printed out and sent to the developer; and e-mailed to each participant. The approval process is now complete.

Can't beat it

Throughout the e-mail process, security is ensured. The Wordperfect mail system allows password protection of

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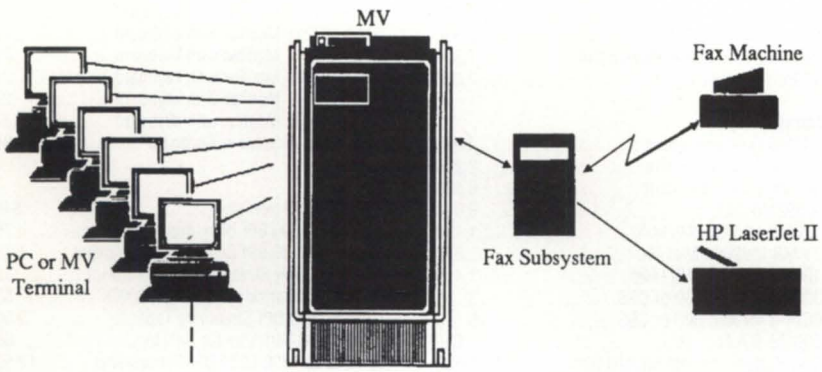

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—Eric Birner, Systems and Programming Engineer, City of Buffalo

messages and files, as well as file encryption.

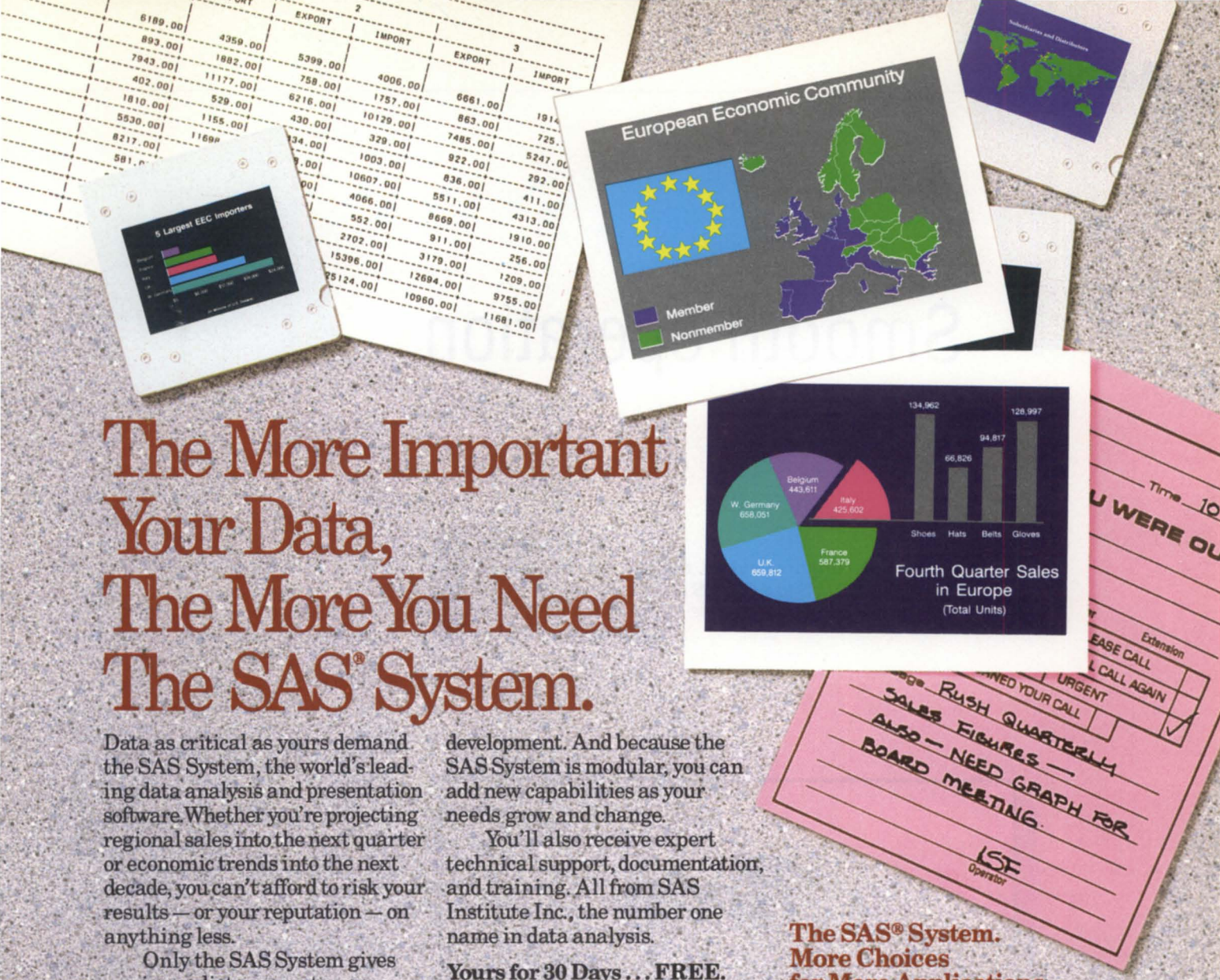
The Wordperfect mail system has several easy-to-use utilities that allow the system manager to remove excess files and keep the impact of the mail system to a minimum.

Moreover, our town has a large number of older employees who initially had little or no exposure to computers. The e-mail system has proven to be a method of drawing them into the system. Many of these individuals have explored beyond the friendly e-mail system to tackle more challenging programs. As a recent advertisement stated, the most powerful computer is not the one with the most instructions per second, or the largest hard disk, but the one that the most people will actually use.

Enhancements to allow for more comprehensive computer assistance in scheduling meetings and resources in e-mail are now in beta testing. As anyone who has ever scheduled a meeting can tell you, this activity is most trying and time-consuming.

Electronic mail works for us. In this multi-site municipal environment, the use of electronic mail has proven to be a relatively painless and cost-effective means of bringing technology to bear on the challenge of increasing productivity. Furthermore, beyond the immediate productivity gains of e-mail, we have received long-term gains of drawing reluctant, older, non-computer-literate users into the Information Age. Δ

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



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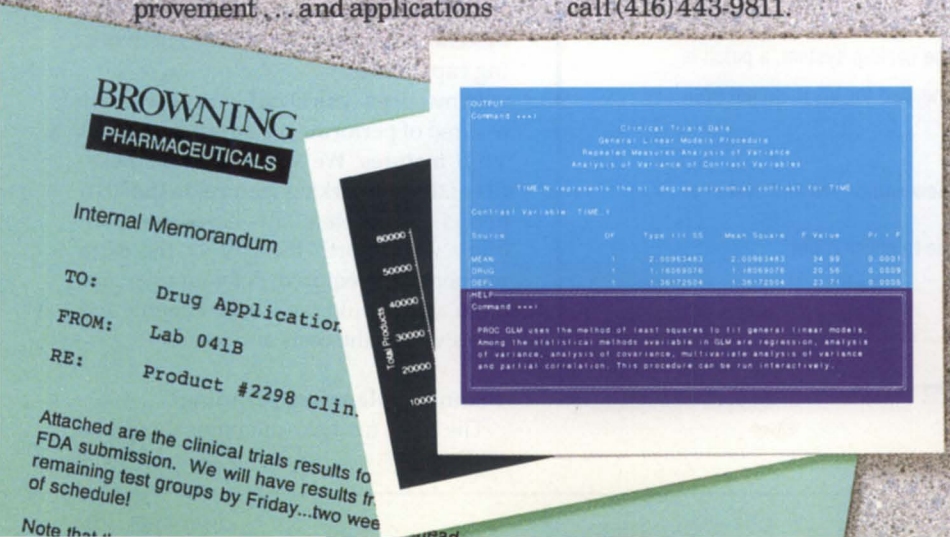

Smooth operation

by Chuck Goes
Special to Focus

SYNOPSIS

With careful planning, the process of migrating from AOS/VS to AOS/VS II goes smoothly. It also provides a great excuse for cleaning out and reorganizing your files.

Much debate has appeared in these pages and other forums over whether or not to migrate from AOS/VS to AOS/VS II. At the risk of adding fuel to a still smoldering fire, I'll describe a case in which a company decided that VS II best fulfills its long-term needs. The information assembled here will be of benefit if a migration to VS II is in your future.

Association Consultants, Inc. (ACI), where I worked as manager of Technical Support, is an insurance broker/administrator specializing in associations. Services include telephone customer service, claims processing, billing, direct mail marketing, and telemarketing. It is vital that the computer system be operational from 8 a.m. until 10 p.m. to handle these functions. Maintaining maximum uptime and fast recovery in case of failure is crucial. VS II's "on the fly" remapping of bad sectors without the need of FIXUP helps meet these requirements.

When ACI was purchased by another company, plans were made to connect our two MV class systems, our in-house PCs (using PC*I), and finally an IBM 3090 at corporate group headquarters. We also wanted to leave open the possibility of networking with an outside software vendor. Clearly, we needed an operating system with powerful, built-in networking capabilities.

In meetings with Data General, we were assured of performance improvements as VS II matures. We agreed that the benefits of the networking features in the VS II kernel and its standards-based compatibility were worth the cost of the extra memory they required. For your own situation, you should review the benefits and gains versus the costs and losses.

Planning, planning, planning

The basis for your planning should be

Notes

Rev 7.62: Special Load_2/Dump_2 are provided because Load_II/Dump_II do not have later enhancements in them.

Rev 7.64: Load_II/Dump_II are the same as Load_2 /Dump_2; there is a problem with Load_II working correctly.

Rev 7.65: This seems to be the best choice, but for those of you who have a Megatape backup system, a patch is needed. (Another patch is needed for VS II, so get both while you're at it).

Rev 7.66: This is only for new equipment and systems.

Rev 7.67: I haven't had time to check it out.

Figure 1

the NEWFS_MIGRATION.DOC., which can be found in a subdirectory in :UTIL called NEWFS_MIGRATION. Outlined in the document is an eight-step process. I recommend that you read this document very carefully, and follow the process described in it.

Before you begin the migration, there are many things you can do to help the process. The first is very important: *be sure you are at least to AOS/VS rev 7.6x.* This is important, because Data General guarantees that anything that runs on this level of VS or higher will also run on VS II. If not, DG will correct the problem. Some items to be aware of are noted in Figure 1.

Once you are up to rev 7.6x, be sure to allow time for everything to stabilize, including other software you may have on your system. I recommend you wait until 30 to 45 days pass with no problems.

You may also have to consider hardware changes. Be sure to check the release notice for items that are not supported under VS II. Also, I strongly recommend adding a disk or two for use in the migration process. ACI was at a point in its growth where an additional disk on each system would soon be needed. Migrating to VS II justified the purchase, and the new disks sped up the migration process.

Additional time-saving tasks to do prior to VS II migration include having the system manager and the users "clean out their closets." That is, delete files that are not needed, and back up and remove seldom used files. This is one of the best excuses to spend time cleaning up your system, and it will definitely help speed up the migration process. The more information you have to migrate, the more time the system will be down while you're doing it. Every little bit helps.

For CEO systems, users should archive anything they won't be using between the time you start the process and your planned date of migration. Other files include software update notices, documentation, games directories, test data directories, and :UTIL files like contest and sample programs. As part of this process, time your backups. Save this information for later use.

Now that you have discovered all kinds of files and directories, you will want to plan your new directory and file structure. For very large systems, leaving well enough alone may be the best solution. In ACI's case, restructuring of the file system was necessary. Run the sizer program (NEWFS_SIZER, part of the VS II release software) on your disks to determine the changes that will be caused by the new file structures. Then, plan your LDU configuration.

Hopefully, you have already made use of a migration team composed of all the individuals who are part of the migration process, but, at this point, you will definitely need to include them in the planning. Work with them to fill out the worksheet provided by Data General. We developed a Gant Chart to visualize our timing of the various tasks. This is where your timings on backups will be used. For our MV/4000, we were able to com-

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plete the entire process in 20 hours. This included two 147 MB Kismet disks and two 354 MB Argus disks. Our MV/10000 took more time since we had six 354 MB Argus disks.

Notify Data General's Software Support Center of your planned dates of migration. DG will make sure that knowledgeable people are on duty during that time. Our personal experience with them was most helpful. Basically, this is the time where everyone must know their part of the migration and be committed to its success. Also, plan checkpoints to determine if you should, for some unexpected reason, stop the process. We didn't have to call a no-go, but I've been in other situations where we have, and I was very glad that the planning took the recovery procedure into account.

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Ready, set, go

As with any major changes, begin with your backups. This step will be about one-third of the whole procedure. We made a PCOPY of the system disk to allow us fast recovery at our checkpoints, two copies of current SYSTAPE, and two copies of Dump_II for each disk. One note on Dump_II: it will follow LDUs, so be sure to release them when they are backed up.

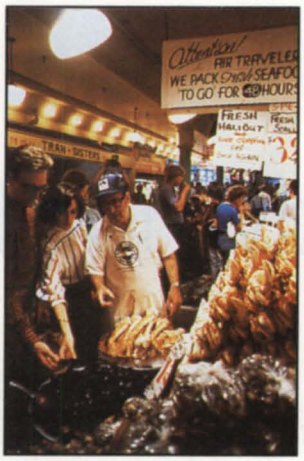
Next, we used NEWFS_MOVER to reformat a disk drive and begin a disk-to-disk shuttle until all drives had been reformatted (except system disks) and files moved to a new file system disk. This procedure will take the next one-third of your time. You can run multiple Movers, as long as each one is using different source and target disk drives.

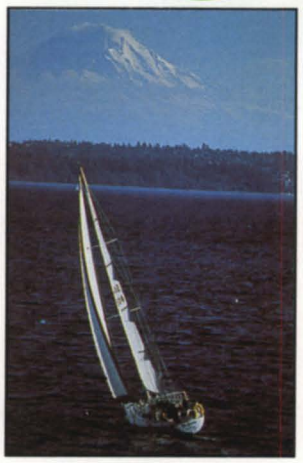
Once completed, we were ready to load VS II. This procedure became a bit more complicated because we were using a hard copy terminal. It is not impossible, but instead of being able to simply hit New Line to accept defaults, you have to re-enter them all. Having read the documentation and planned our responses, the procedure went very smoothly. We took the default on almost every situation with the exception of setting the default element size on the system disk to 1 for the first four elements. We discovered two areas of confusion. First, the documentation does show correct examples, but does not spell out that the location for the microcode is 1001. Second, the normal size for the diagnostics area is 10,000.

We spent the remainder of the time (about 25 percent) shuffling some of our directories around, refining, and testing. You will want to make modifications to your UP and DOWN macros, plus check out other macros relating to the operating system. After we were up and running on VS II, we only ran across three minor problems that required the Software Support Center, and these were corrected within an hour by uploading patches via modem. Δ

Chuck Goes is a senior systems analyst and is also president of the Chicago Area Data General Users Group and Eastern Vice Chair for regional interest groups of NADGUG. He can be reached at Datamark Corp., 3700 W. Devon Ave, Suite E, Lincolnwood, IL 60659.

Seattle





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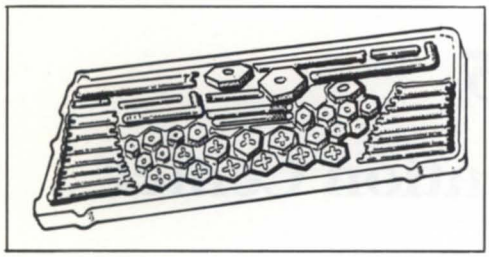
EXEC Cooperative Toolkit

SYNOPSIS

A new EXEC utility provides an object module library for linking, and user command functions to easily write your own programs.



Some of you may have noticed that I have a tendency to stay away from certain topics. I do not really want to get into the fray of performance measurement, scheduling, and utility programs. This month, I am stepping outside of my normal bounds to discuss material that is related to the EXEC utility—this information is only partly released as of this writing.

An EXECplosion of new features

I've been looking for an EXEC PRINT queue that I could manipulate like a normal queue, and get pertinent information from (like /DESTINATION, pathname, etc.). Normal system utility processes like XLPT will not handle the work behind the scenes when an entry is placed in the queue. I had written my own handler for processing the data, but still needed the queue manipulation stuff. I was recently made aware that the development folks in Westboro will soon release (if they haven't already by this writing) precisely such a tool—the EXEC Cooperative Toolkit.

The "new" EXEC is scheduled to ship with AOS/VS II rev 2, and classic AOS /VS rev 7.68. (Since I am writing this in July, things could change!) Among the many new features is the ability of user programs to interact cooperatively with EXEC. This means that you may now write your own queued handler, and let EXEC handle all of the actions related to queue entry, removal, priorities, notification of job completion, etc.

Communicating with EXEC

In traditional systems (prior to the new EXEC), the basic EXEC processes (XLPT, XPLT, batch processing, etc.) are initiated and controlled by users sending the famous CONTROL @EXEC message. EXEC waits for these messages to come in on the IPC port :PER:EXEC. When action is dictated, EXEC starts the appropriate handler as a child process. All subsequent action with the child process happens through the same IPC port (EXEC functions as a relay for the messages). The internal form of the relayed messages is a well-kept secret.

Well folks, things have changed in the new EXEC. Although the messages are still secret, an object module library called COOP_TOOLKIT.LB lets you link into your program. The routines in this library do all of the talking to EXEC that you will need. Okay, okay, *almost* all of the talking. There is another object module called COOP_MAIN.OB linked into your program. COOP_MAIN.OB is where your program starts. The link line for your program would look something like

```
LINK/TASKS=20 COOP_MAIN.ob/START your &
modules here COOP_TOOLKIT.LB
```

After you PROC your program (with a unique process name), you then tell EXEC to start it by issuing the following command

```
CX START/NAME=process_name arguments ...
```

This tells EXEC that it has a new process to manipulate, even though this process is not a direct child of EXEC.

Since I no longer work in AOS/VS development, I do not have the internals or design documentation. I have not had time to dissect the new EXEC (an exercise

Figure 1: Replaceable routines

INIT_COOP
INIT_DEVICE
INIT_STREAM
INIT_JOB
TERM_JOB
TERM_STREAM
TERM_DEVICE
TERM_COOP
ACCEPT_USER_COMMAND
PROCESS_OTHER_MESSAGE

Figure 2: Callable routines

UNPEND_SUBMITTOR
RESPOND_TO_USER_COMMAND
ABORT_COOP, ABORT_DEVICE, and ABORT_JOB
SEND_STATUS_TEXT and SEND_STATUS_CODE
FIND_COOP, FIND_DEVICE, FIND_STREAM
FATAL_ERROR
ZERO_WORDS and COPY_WORDS
ERMSG
MUST, MAY and REPLACE-ABLE

Figure 3: ?OPEX commands

ALIGN
ALLOCATE
BATCH_LIST
BATCH_OUTPUT
BINARY
CPL
DEFAULTFORMS
DISMOUNTED
ELONGATE
EVEN
FORMS
HEADERS
LPP
MAPPER
MOUNTED
MOUNTSTATUS
OPERATOR
PREMOUNTED
PRIORITY
RELEASE
REFUSED
SPOOLSTATUS
STATUS
TRAILERS
UNITSTATUS

that is left to the reader), so I will proceed with some logical conjecturing as to what happens.

Since your program is linked with COOP_MAIN as the start, it first looks up the global port of the EXEC IPC port in :PER, and then attempts to ?CONnect to EXEC (which would have previously issued the ?SERVE system call). Failure to find the port means that EXEC is not started, and failure to become a customer by ?CONnecting means that you are not running the new EXEC.

Having successfully become a customer of EXEC, your program tells EXEC that it is ready, and probably waits for a reply from EXEC before continuing. When EXEC receives the START IPC, it sends a message back to the new process, telling it to perform any custom initialization.

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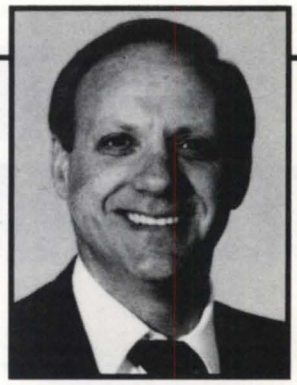

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Now, we get into the interesting parts of what the toolkit can do. The toolkit has various routines, some that you *may* call, some that you *must* call, and some default routines that you may *replace*. (Note the emphasis on may, must, and replace). The replaceable routines are listed in Figure 1. The toolkit routines that you may call are listed in Figure 2. There are only two routines that you must call—REQUEST_JOB and COMPLETE_JOB.

The two functions, REQUEST_JOB and COMPLETE_JOB, allow you to request that EXEC give you the next entry in a queue, and to signify when processing of the entry is complete.

The routines that you may call are ones that alleviate a good portion of code required for EXEC processes.

The replaceable routines are default "COOP" routines that are normally invoked by EXEC. You have the option of placing your own code in these positions to perform custom handling of certain events. For example, INIT_COOP is called when EXEC "starts" your cooperative process.

A more complex example is the processing of user commands. In this context, a "user command" is a message received from EXEC as part of its handling of ?OPEX (CX) or ?EXEC system calls. By implementing the ACCEPT_USER_COMMAND routine, your cooperative program can process these messages. The ?OPEX commands that are converted into user commands are listed in Figure 3.

And, if that were not enough, the XFLC, XFLO, XFME, XFNV, and XFXDU functions of the ?EXEC call are converted into user commands, along with the ?ZUC function of the ?OPEX system call.

This gives you the ability to quickly write your own program, and have it look like a part of the built-in system. You can use the familiar EXEC commands to manipulate your program, and the users do not have to learn a whole new set of commands or macros. (This only applies if the function of your program is similar to that of a queued server.)

If you are interested in reading more regarding EXEC cooperative processes, I suggest that, when you get your copy of AOS/VS 7.68, or AOS/VS II 2.0, you read the AOS/VS release notice, and the documents contained in the :UTIL:COOP_TOOLKIT directory.

What next?

In keeping with the spirit of things, this article was written rather late in the magazine production cycle. The first paragraphs that I had written for this column were shelved because I found some much more interesting stuff to write about, (isn't that a relief?). If you have any ideas or areas of interest that you would like me to discuss in upcoming articles, drop me a line. Δ

Michael Dupras is senior consultant for the Software Products and Services Division of DG Canada. He may be reached at Data General, 490 boul. St-Joseph, Suite 104, Hull, Quebec, Canada J8Y 3Y7; 819/778-2171; CEO address MICHAEL DUPRAS :CANADA.

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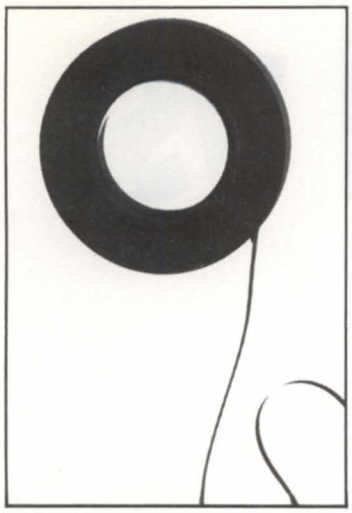

A complete listing of the NADGUG software library

ACK • Updated version 1.70. Terminal emulator/file transfer program for both AOS/VS and AOS machines. 365 blocks.

Big Brother • Automatic log-off program written in Fortran 77. Donated by the U.S. Forest Service. 169 blocks.

B.J.'s BBS contributions • 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. 6,761 blocks.

CRTEDIT • The old RDOS screen editor ported over to VS. 49 blocks.

DBCHECK • Checks the open status of an Infos file and examines the checkpointing status of a file. 187 blocks.

DUMPLOAD • A Macintosh program to dump and load AOS/VS-compatible dumps on a Macintosh. 137 blocks.

ERP • A process-termination program developed by NASA and modified by Manville. In Fortran 77. 454 blocks.

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. 654 blocks.

Focus • *Focus* magazine articles. 1774 blocks.

FTNCVT • A Fortran 5 to Fortran 77 translator. 232 blocks.

Games • A collection from various places. Enjoy. 19,216 blocks.

IMSLUTIL • A collection of CLI macros, Cobol routines, and assembly routines callable from Cobol. By IMSL of Houston. 4,893 blocks.

JAG_UTIL • JAG_UTIL by John Grant consists of several programs: Filecount, Userspace, Scan, Glossary, Laminate, and Qhelp. 4,325 blocks.

Kermit • A file-transfer protocol developed at Columbia University. 9,697 blocks.

Logout • Another auto log-out system. 178 blocks.

Look • Used to view text files, Look allows you to move forward and backward in a file. Donated by Data General. 202 blocks.

Macros • A collection of macros from various sources. 441 blocks.

MENUDIR • An initial user menu that can chain to other applications and features a password-control system. From the Fed SIG. 486 blocks.

Misc Kerm • An expanded version of AOS Kerm, this now includes other versions of Kermit including DG/One Kermit. 6,709 blocks.

MS-DOS • A VS program that lets you read and write MS-DOS diskettes on an MV system with a 5.25-inch floppy disk drive. 984 blocks.

Notify and Prior • Two contributions from Concept Automation. Notify tells you when a process has terminated. Prior lists the priorities of processes. 162 blocks.

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

Softrans • A file-transfer protocol written in Fortran 77 used to communicate with proprietary PC communications packages. 462 blocks.

Spell • Checks the spelling of a word or spell-checks documents. Submitted by Richard Kouzes. 5,108 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 distributed as shareware. At the end of 30 days, either remove it from your system or send the author a $45 fee. 463 blocks.

VT100KER • VT100 emulator from John Grant. 1,043 blocks.

Xfer • A tape-conversion utility. 607 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.

Thanks to Brian Johnson and :WFFCA, the library is now able to provide 1200 ft. copies to AOS/VS rev 6 users. Thanks to Kevin Danzig for duplicating MV/2000 tapes. To leave a question regarding non-standard library distribution call 713/988-5342.

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. Tapes cannot be returned UPS collect.

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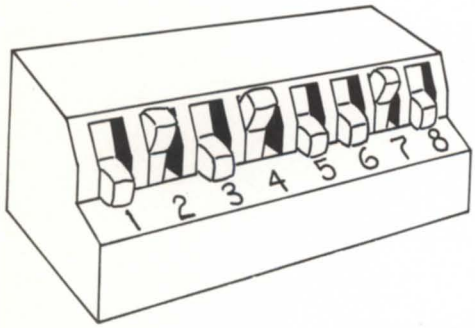
The ups and downs of modem setup



SYNOPSIS

The Micom 3124 modem is the starting point for a walk through hook-up, dial-in, dial-out, and other modem matters.

:MODEMS:CONTINUED

This is Part II of my Modem Opus on AOS[/VS [II]]. It now appears that this will be at least a three-part series, instead of two parts.

This month, I had intended to describe the setup for the Microcom AX2400c and AX9624c modems sold by DG Direct, but I've changed my strategy. Instead, I've picked a much simpler modem to analyze first, so that we can get our collective feet wet on the basic concepts involved. Next month, I'll attack the much more complicated AX series modems. Save last month's issue; it has the alphabetical table of Microcom AX series modem commands. A new list for the modem I'll be discussing, the Micom 3124, is included with this column.

Also, I forgot to mention it last month, but all of this stuff assumes that you are using a "standard" modem cable and connectors to attach to the modem. A standard cable has eight wires minimum (2-8 and 20), and is wired "straight through". A full 25-pin cable will also work. Please, no jumpers. This also assumes that you use a mux that supports the necessary modem control signals if you're using the modem for dial-in. For those of you who are unconcerned about dial-in security and insist on attaching dial-in modems to IAC 16s, this column will be of little help.

Finally, hooking up a new modem without a breakout box or an EIA line monitor is masochistic. For breakout boxes, I prefer the unpowered kind so I can see the actual signal strength (model MT25 from Multi-Tech in New Brighton, Minnesota, about $125). For line monitors, I prefer the kind with separate LEDs for positive and negative (Minitracker from Datatran Corp. in Denver, Colorado, about $30). Avoid the kind with bi-state or tri-state LEDs; single characters are tough to spot

Figure 1: Micom M3124EH default settings

B1	Use the Bell 212A standard for connections at 1200 baud instead of CCITT
V22.	Switch 8 overrides.
&C0	CD forced on. Switch 6 overrides.
&D0	DTR forced on. Switch 1 overrides.
E1	Echo characters in Command State. Switch 4 overrides.
&G0	No guard tone.
&P0	Pulse dialing; 39:61 make :break ratio.
Q0	Enable output of result codes. Switch3 overrides.
&R0	CTS follows RTS once on line. CTS on in command mode.
V	Word result codes. Switch 2 overrides.
X4	Report NO DIALTONE and BUSY when dialing, report "CONNECTspeed" when connecting.
Y0	Disable long space disconnect. &Zs Store "s" as the dial string. Use ATDS to dial it.
Z	Reset the modem.
S0=0	Do not answer. Switch 5 overrides.
S60=0	Disabled (i.e., don't send breaks).
S61=0	Disable Serial Port flow control.
S62=0	Disable Modem Port flow control.
S63=0	Act on XON/XOFF, but don't pass them on to the other modem. S61=0 overrides.
S64=0	Adjust Serial Port speed to connection speed.
S65=0	Normal link mode.
S66=0	Special Operations (only used with PBX equipment).
S67=0	Disable voice/data switching.

Registers and commands not normally used or of no interest have been omitted.

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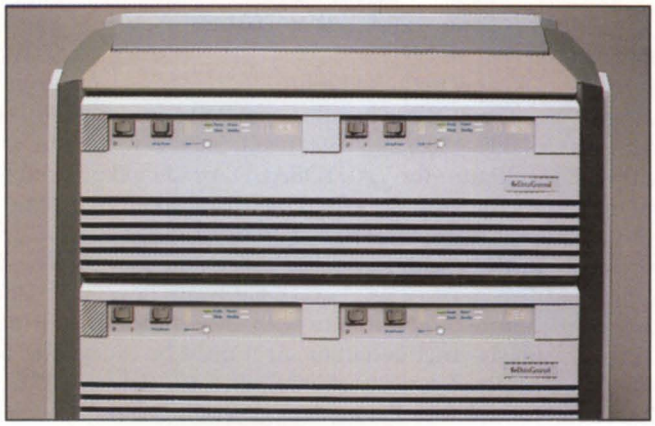

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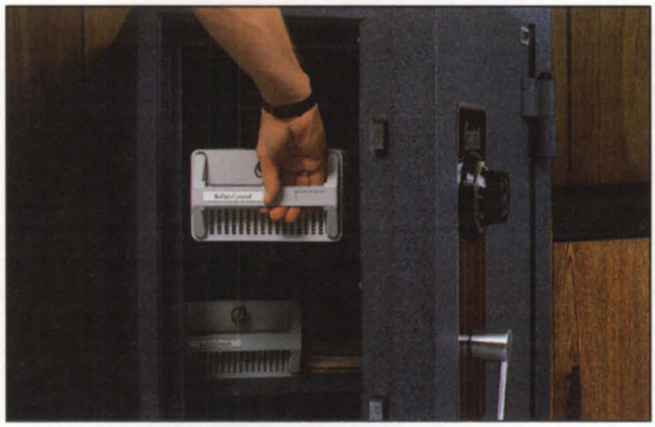

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on those things at 9600 baud.

:MICOM:M3124EH
:AKA:FRANKLIN:FM2400E

This Micom modem was very popular a few years back and Micom OEMed it to quite a few other suppliers, notably Franklin. It's a good example of a modem that is not stupid, but is not very smart either. The 3124 is the modem used on the :SYSMGR BBS. Micom is now out of the overcrowded asynchronous modem business, but it continues to make synchronous modems and statistical multiplexors.

Between starting and finishing this column, I was shopping for a do dad (that's a technical term) in a PC shop and noticed a brand new 3124 box sitting in a display case. I asked the price and they said $120, so there are still some 3124s floating around at bargain prices.

This modem supports MNP, but the manual gives no indication of what MNP Class is supported. From the lack of compression commands, it's probably Class 4. According to the manual, this modem has the characteristic that when power is applied, or when the modem is reset via the RST button or an ATZ command, it applies the hardware switch configuration last. But only sort of, as I'll explain later.

Many newer modems, like the ones from Microcom, allow the option of applying the switch settings either before or after the option registers have been restored from non-volatile memory, or ignoring the switches all together.

What this means for us is that we aren't going to be able to leave the switches set at the factory defaults and program around them (see the goals list in last month's column). Oh well.

:3124:DIAL_IN

This is the third re-write of this part of the column. I've tried everything else, so this time I'm going to try simple narrative instead of comprehensive reference format. Before hooking up the modem, I set the switches to meet the minimum DTR/CD/DSR requirements for AOS [/VS [II]] dial-in lines:

1	Down	DTR normal
2	Up	Word results
3	Down	Results enabled
4	Up	Echo enabled
5	Down	Auto answer disabled
6	Up	CD normal
7	Down	DSR normal
8	Down	Bell 212A at 1200 baud

Ok, now to the soft setup.

The 3124 can handle Serial Port speeds of 300, 1200, and 2400 baud. Should we configure for /AUTOBAUD, or should we configure for a fixed 2400 baud speed? Well, in order for a fixed 2400 baud speed to work with low-speed callers, the modem must either do CTS hardware flow control in accordance with DG's ridiculously strict definition, or it must be capable of uni-directional software flow control with the modem generating, but not recognizing, XON/XOFF. Bad news: the 3124 does neither. It looks like you must use /AUTOBAUD for AOS/VS [II] in order to avoid data loss. AOS doesn't have /AUTOBAUD, so the only recourse is to fix the port speed at 2400 baud, disable Serial Port flow control, and disallow low speed callers in order to avoid data loss (S64=1).

Do we need to disable echo and/or result codes to avoid confusing PMGR or EXEC? Because EXEC never writes to a /MOD port prior to a connection, and echo only applies to Command State, we can safely leave echo enabled. The CONNECT messages are sent to the Serial Port just before CD turns on, and PMGR ignores any characters that occur prior to CD, so we can also safely leave results enabled.

DTR has three possible values when switch 1 is up. &D1 returns the modem to Command State when DTR drops, but does not hang up the phone, and answers calls even if DTR is not on, as long as S0 is non-zero. Clearly, &D1 won't cut it. &D2 hangs up the phone and returns to Command State when DTR drops, and won't answer the phone if DTR is off, and won't answer if DTR is on unless S0 is non-zero.
AOS[/VS [II]] works fine with &D2. &D3 is the same as &D2, except that the modem also re-initializes (ATZ) itself. I started out using &D2, but after someone calls at 1200 baud, the modem will only connect at 1200 baud for future callers. Setting &D3 eliminated the problem, so we'll go with &D3.

This brings up an interesting aspect to how the 3124 applies the switches after restoring option values from non-volatile memory. The manual claims that switch 1 up corresponds to &D1. What actually happens is that switch 1 down unconditionally forces &D to zero. Switch 1 up (DTR normal) forces &D to 1 if the stored value of &D is zero, otherwise it uses the stored value. Hence, setting &D2 or &D3 will survive a reset. Switch 5 up (auto-answer enabled) also works the same way; it forces S0 to 1 if the stored value was zero, otherwise it uses the stored value.

Once switch 6 is up (CD normal), there are no other CD options. Luckily, normal CD behavior matches that required by AOS[/VS[II]].

Switch 7 down, DSR normal, has no equivalent programmable option. Other modems allow you to select whether DSR goes on when the modem is off hook, or when the answer tone is detected/generated. AOS[/VS [II]] doesn't care which one it is, as long as it comes up before or with CD, and drops when CD drops. The 3124's DSR goes on when the answer tone turns on and drops when CD drops.

CTS behavior is governed by &R. The description of the two option values (0 and 1) in the manual bears no resemblance to the actual behavior of the modem according to the line monitor. As near as I can figure, the CTS signal is always on unless a) hardware flow control is selected, or b) the modem is in synchronous mode. We aren't using either, so we can safely ignore &R.

The default value for Connect Modes is Normal Mode (0). We want either Reliable (non-MNP modems won't be able to call) or Auto-Reliable (non-MNP callers will get Normal mode). One of my goals was to handle both non-MNP and MNP callers, so we'll use S65=2.

The default value for both Serial Port and Modem Port flow control is disabled. Software flow control screws up DG cursor addressing sequences, precludes X/Y/Zmodem up/downloads, and the 3124's hardware flow control does not work with IAC 8s, so we'll leave flow control disabled.

:3124:DIAL_IN:SUMMARY

OK, sports fans, here's the summary of the switch settings and initialization strings for dial-in 3124s:

```
AOS/VS [II]: UUDUUUDD AT&F&D3S65=2&W
AOS:UUDUUUDD AT&F&D3S64=1S65=2&W
```

Note that the initialization strings only need to be written to the modem once; the day it's installed. We have cleverly arranged things so that resetting the modem will not mess up the configuration. In fact, that was one of the original goals. You should be aware, however, that some modems use a Nicad battery to provide power to their non-volatile memory. If you leave the modem unplugged or turned off for more than 30 days, you will have to reprogram it.

:3124:DIAL_OUT

The proper configuration for dial-out use depends on what you're connecting to the modem; a terminal, a PC with a terminal emulator, or a system running Tex, Blast, OIS_CONNECTION, or what have you.

:3124:DIAL_OUT:COMMON

This section deals with configuration features that are common to all three configurations.

When calling into a high speed modem that is heavily buffered, or even when calling into another 3124, ^O and ^C^X sequences can take a long time to act, due to buffering in the called modem. This problem can be alleviated somewhat by setting S60=1 to cause the 3124 to clear its buffers when a Break is detected, and send the Break to the other modem to cause it to also clear its buffers. To take advantage of this feature, try TYPEing PARU.32.SR, or some other long ugly text file, then hit ^C^A followed by CMD Break. You should see the output stop a lot quicker than when you just hit ^C^A without a Break.

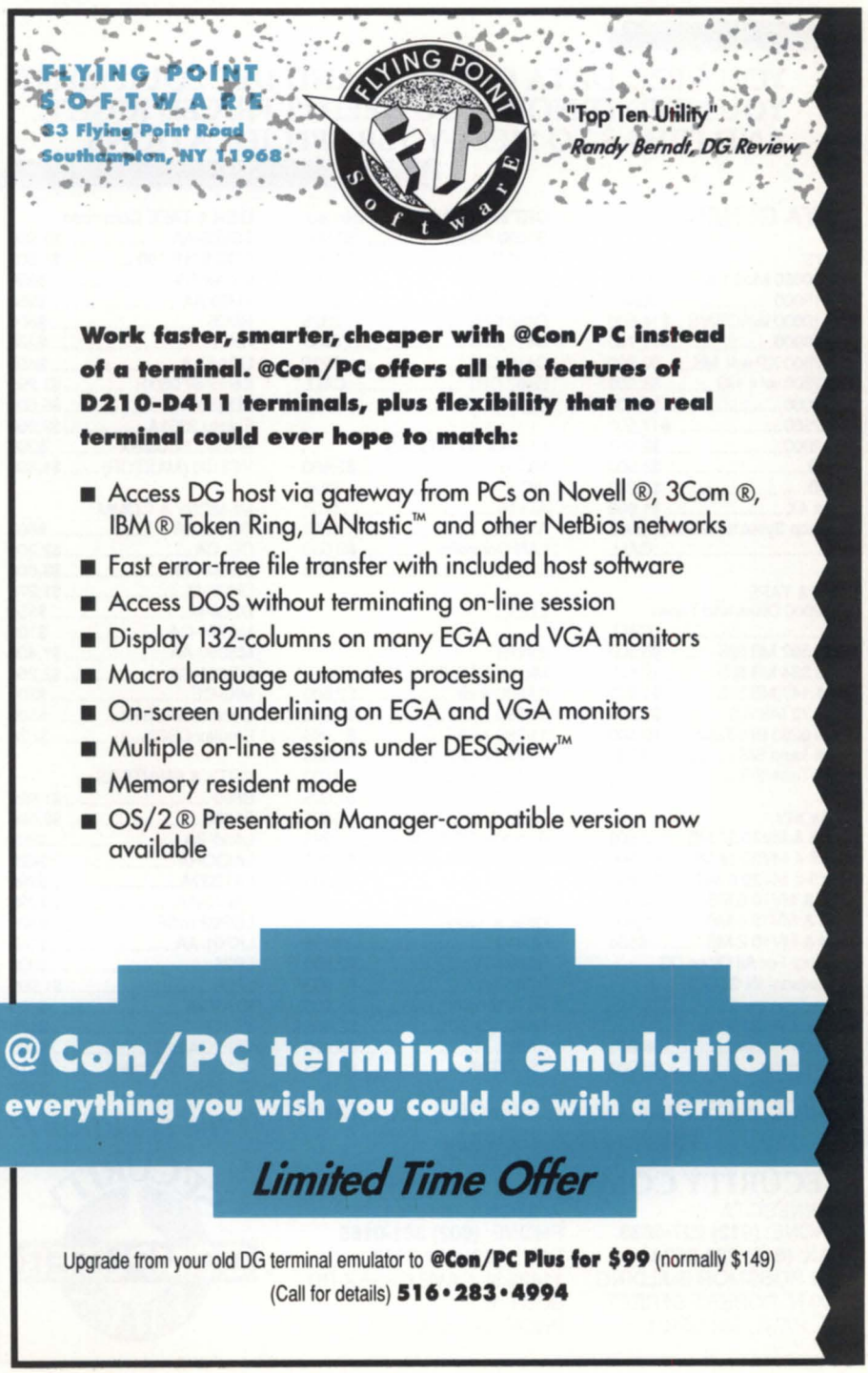
Software flow control (S61=1) is a must in most cases for several reasons; you want ^S/^Q keyboard strikes to stop the flow from the modem immediately in order to avoid overrunning the limited buffer in the terminal, and most DG terminals generate their own XON/XOFFs when confronted with time consuming input sequences like slow scrolls or clear screen commands. Terminal emulators can also generate lots of XON/XOFFs, depending on the speed of the PC; most are incapable of handling sustained text reception at 9600 baud or higher (4800 baud for Blast!).

Unfortunately, using software Serial Port flow control precludes X/Y/Zmodem protocol use for uploads. Downloads are OK because the called modem does not (and can not!) have Serial Port software flow control enabled.

Taken together, these conditions preclude the use of hardware flow control (S61=2), even with terminal emulators like Blast that support it. In Blast's case, hardware flow control works fine as long as you don't mind waiting for two or three screens full of output to go by before a ^S takes effect.

Until now, I haven't mentioned a word about Modem Port flow control and XON/XOFF pass through.

Enabling Modem Port flow control (S62=1) is the kiss of death as soon as a DG cursor addressing sequence referring to column or row 19 occurs, so you have no choice but to leave it disabled.



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XON/XOFF pass-through (S63) only applies if software Serial Port flow control is enabled (S61=1). S63=0 causes XON/XOFF to be acted on and discarded. S63=1 causes XON/XOFF to be acted on and passed through as data. AOS[/VS [II]] works fine either way; the only effect is that S63=1 reduces buffering somewhat in the called modem by increasing the total number of XOFF/XONs that the system sees. The effect is negligible, so I leave S63=0 (the default).

Because we want to take advantage of MNP if the called modem supports it, we will need to set Auto Reliable mode (S65=2).

:3124:DIAL_OUT:TERMINAL

This is the easiest one to set up, so I'll get it out of the way first.

DG terminals are not happy if they don't see CTS, DSR, and CD all the time—they go off line. So, we need to configure the modem to force these signals on all the time. Luckily that corresponds to the default switch configuration on the 3124: DUDUDDUD.

I don't know about you, but I hate having to change the baud rate of my terminal depending on the speed of the system I'm calling, so I use a fixed Serial Port speed (S64=1) of 2400 baud. The configuration string is AT&FS60=0S61=1S64=1S65=2&W.

:3124:DIAL_OUT:SYSTEM

The switch settings required are a function of which package you use.

The manual for OIS_CONNECTION is a veritable fountain of recommendations; it gives the switch positions for a "Hayes" modem (which?) and a Novation Smartcat (which?), with no explanation of what the switch settings do. I guess you'll have to contact DG for help with that program. Does anybody use it?

The manual for Blast 8.1.0 for AOS/VS gives switch settings for a Hayes Smartmodem 1200. I've found that once the modem is programmed as if it is going to be used for dial-in, and then the /MOD characteristic is turned off, it works just fine with Blast.

Tex claims to be able to handle a modem configured for dial-in use, even with /MOD set, but I haven't tried it. I rarely use Tex, but when I do I use the same modem setup that we use for dial-in and Blast with /MOD turned off, and it seems to work OK.

:3124:DIAL_OUT:PC_EMULATORS

I mostly use Pereline on my PC. It requires active modem signals, so the switch setup I use is UUDUDUDD. I program the modem with AT&F&D3S60=1S61=1S65 =2&W and then declare it as "Other Hayes compatible" inside Pereline using the default modem command strings provided by Pereline.

I occasionally use Blast 9.0.1 on my PC, and I thought this might cause some problems because the PC Blast manuals advise a modem setup with DTR/DSR/CD /Auto-Answer forced. A reading of the Blast MODEMS.SCR file shows that Blast really doesn't care about the modem signals. In fact, for certain modem scripts it

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actually expects the modem signals to be normal (see the Blast reference manual for the description of the Drop and Raise script statements). I tried using Blast with the modem set up the same as for use with Pereline, and it worked just fine. Just remember to declare "XON/XOFF Pacing Yes" in the setup.

:FILEXFER_ISSUES

Earlier, I stated that software Serial Port flow control is a must at the calling modem, and that it precluded the use of X/Y/Zmodem uploads. Downloads are not precluded because the modem at the AOS[/VS [II]] end does not use software flow control.

How can we get around this limitation? Here's how I did it. Pereline supports two windows, each with its own port and modem definitions. I assigned both windows to COM1, specified "Other Hayes compatible" for the modem in both windows, but I added S65=1 to the modem initialization string for window 1 and S65=0 for window 2. To do a X/Y/ZModem upload I log off and dial back in using window 2. Tedious, but effective.

A trickier way to turn off flow control for a short time so you can do uploads is turn off mux port echo with CHAR/OFF/EB0, escape to your local modem's Command State (+++), enter ATS61=0<CR> to disable Serial Port flow control, enter ATO<CR> to go back on line, and then turn on mux port echo with CHAR/EB0. The reason you have to turn mux port echo off is because the echo of the +++ by PMGR will put the called modem into Command State, also hanging the port until you force a hang up. Cute, huh? I use this trick all the time and it works like a charm. 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 (voice) or 415/550-1072 (fax). The :SYSMGR bulletin board number is 415/391-6531 (300/1200/2400 with optional MNP class 4, CHAR/605X/CHARLEN=8/PARITY=NONE/AUTOBAUD) or 415/550-1454 (voice).

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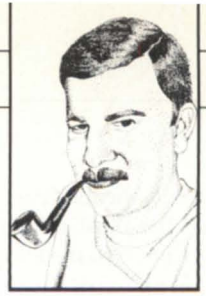

Isn't that special?

SYNOPSIS

Testing Unix ICobol version 1.51 uncovered several special utilities, including a compiler with excellent speed and user-friendly error messages, and a valuable debugger that understands high-level language commands.

Last month, I took a beginners's view of Unix, and concluded that, despite a few small warts, it ain't bad looking. This month, I'm running ICobol under the 386/ix operating system.

A compiler you can understand

I have version 1.51 of ICobol and the utilities, and I like them. Someone decided to go out and write a nice ICobol compiler. The error messages are verbose and clear, and—wonder of wonders—actually tell you *where* the error really is. For instance, I messed up a REDEFINES on purpose. The MV compiler gave me this error message:

```
02 FILE-ONE-DATA.
ERROR: REDEFINED AREA SIZE
```

which is the line after the REDEFINES. The Unix version displayed the following:

```
:27 (uncorrected error)
 FILE-ONE-KEY-NUM must be the same size as
the item it redefines.
```

Now, which one would you rather debug?

What's more, it appears that the good folks at RTP have actually *read the ICobol manual!* I'm sure that a practice such as this will be immediately discouraged, but we should take advantage of their naivete for as long as possible.

The JUSTIFIED clause works only for alphanumeric items. Pages 7-16 of the Programmer's Reference say that "You can specify this clause only at the elementary item level. It cannot be specified for a numeric item or for an item whose PICTURE clause specifies editing." I have a test program that contains the following:

```
01 C1-SCREEN JUSTIFIED.
03 C1-LOWEST PIC 9(10) JUSTIFIED.
03 C1-HIGHEST PIC ZZ,ZZ9 JUSTIFIED.
```

It compiled just fine on the MV. It has been compiling just fine ever since I tried it on a CS-40. Under Unix, however, it gives the following warning:

```
:311 (corrected error)
JUSTIFIED clause on "C1-LOWEST" conflicts
with PICTURE.
```

So, not only does Unix ICobol recognize the error, it realizes that it's unimportant and corrects it. Nice.

The compile speed was excellent at over 15,000 lines per minute—an order of magnitude better than my MV/8. Since I don't have any programs even approaching 15,000 lines (hey, I have to do my own program maintenance), we're talking under 20 seconds for anything I have here. I've tested faster compilers, but at these speeds, a compiler that's as much as 25 percent faster will only cut an insignificant 5 seconds off of a compile.

A few drawbacks

I did find some problems. When I put a DISPLAY of a nonexistent data name in the program above, the error got flagged—but so did all references to paragraphs below it, and the REDEFINES error disappeared! It appears that there's still some work left to be done on this compiler.

Nevertheless, it's a good compiler, especially for an early release. I like the notion of separating warnings from true errors. I'd like this notion to go further, and hopefully to spread to the other platforms. For instance, now that I'm using AOS/VS, I tend to be rather verbose with my program names—MANPOWER_DISTRIBUTION_REPORT—for example. I usually forget and put the same thing in my PROGRAM-ID, at which point I get an error, because I used underscores instead of dashes. This is not likely to cause a major problem with my pro-

Figure 1: Benchmarks

	Ryan-McFarland	Unix ICobol	MV8/(1.51)
Write Random (10K)	72	190	83
Read Random (10K)	24	38	45
Read/Rewrite Random (10K)	48	70	64
Write Sequential (10K)	34	22	51
Read Sequential (10K)	16	13	29
Read/Rewrite Sequential (10K)	120	21	71
Open/Read/Close (100)	21	4	19
Div S9(10) COMP by S9(5) COMP giving S9(5) COMP (100K)	46	70	218
Mult S9(5) COMP by S9(5) COMP giving S9(10) COMP (100K)	28	38	145
Add S9(5) to S9(10) (100K)	15	31	95
Move S9(5) to S9(5) COMP (100K)	12	10	44
Move X(50) to X(50) (100K)	6	4	9
Null Paragraph (300K)	16	4	9
Display at Line 24 (500)	20	7	13

Note - all times in seconds

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gram logic. Wouldn't it be possible to flag this as a warning, instead of an error?

Runtime system

There's not a lot to be said about the runtime system. It simply worked. Function keys acted like function keys should, ACCEPTs and DISPLAYs accepted and displayed, and in general I couldn't tell that I was in Unix instead of AOS/VS—with one exception, which can't be blamed on DG. It's that bloody Unix uppercase /lowercase differentiation again. I kept getting a file access error on a file that I *knew* was out there. Turns out that I called it SBCOUNT in one program and sbcount in another, and never the twain shall meet.

I'm now using a 25 Mhz 386, so I reran my Ryan-McFarland benchmarks of a few months ago, in order to compare them with the Unix ICobol results. The comparison is in Figure 1(page 40).

Interesting. ICobol is faster on sequential files and MOVEs (and, as usual, on null paragraphs—I wonder if they have someone working full time to optimize null paragraphs?), but slower on everything else. I can find it in my heart to blame the file access speed on the Unix file system, but the arithmetic functions are a mystery. I'm amazed that the MV can kind of hold it's own on file I/O, but if you're doing ICobol number crunching, definitely switch to a PC.

Old utilities/new debugger

The old familiar utilities are here, along with a new entry—the debugger. All of the utilities worked as promised, although they need some work on the user interface. In ANALYZE, for instance, the defaults are still in the program—display the results and analyze the index. You just can't default to the defaults. Hitting "enter" while the cursor is poised on the "D" results in absolutely nothing. Apparently, a Unix devotee worked on this program, because the defaults are in upper case while the answers need to be in lower case.

I've said this before, but it bears repeating. Please, Data General, release the source code to these utilities. This bug would be an easy fix if I had source available. What are you afraid of, a massive black market bootlegging of ANALYZE and FILESTATS?

The added utility is the Multi-extensible debugger (Mxdb). I know plenty of people running ICobol who tell me they've never used the debugger. They must write code a lot better than I do, because I use it *constantly*. In fact, the only time I've ever back-revved was when the debugger wouldn't display computational items.

So, a good debugger is essential to my operation. Unfortunately, the only thing I have here is the ICobol debugger. I'm spoiled on the PC—Borland's debugger is everything that I want, and I want it for ICobol!

That will have to wait for next month, when I review the Aviion. The debugger supplied with 386/ix doesn't have the graphical interface. It's like the difference between SPEED and CRTEDIT. On the 386, I step, then VIEW the code, step, then VIEW, and so on. But at least I am

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finally able to look at my code while running, and single step through programs.

On a 386, the Mxdb works only with ICobol. On the Aviion, it is the common debugger for C, Pascal, Fortran, Cobol, ICobol, and PL/I. This way, you need learn only one debugger and it will work with whatever language you choose.

Mxdb may not be as pretty as Borland's debugger, but it is much more powerful—a fair trade-off. This debugger understands high-level language commands. Of course, you can set breakpoints at certain lines or paragraph names. With Mxdb, you can additionally put ICobol commands into the breakpoint—for instance:

```
breakpoint 50 if (CLOCK-NUMBER IS EQUAL 233)
```

will stop on line 50 only when CLOCK-NUMBER reaches 233. If you've ever had to sit in DEBUG typing "RUN END" and "DISPLAY CLOCK-NUMBER" while waiting for a value to hit a certain point, you can appreciate this command. You can also write macros for the debugger, using constructs such as IF and WHILE. You put the macros into a file named .mxdb_init, and can call upon them while running the program. For instance, with a data item like this:

```
03 EMP-HOURS PIC 99.
    88 OVERTIME VALUES ARE 41 THRU 80.
```

a macro might look like so:

```
define-macro test {expression} {
  if ('expression) ,then {write TRUE} , else
{write FALSE}
}
```

Now, while debugging your program, typing "TEST OVERTIME" will display TRUE for values between 41 and 80, and FALSE for all other values.

I'm pleased to see the direction that DG is taking ICobol. A compiler that works the way the manual says it should, gives coherent error messages, and has a new and extremely useful utility in the debugger makes this a package worth looking into. I can only hope that the same features will eventually make their way to the VS line.

Odds and ends dept.

The NADGUG bulletin board at Rational Data Systems is finally back on line! This is practically my only means of communicating with the rest of the DG world, and I felt like I was held incommunicado for a month. When you're located in the bustling metropolis of Leavittsburg, Ohio (actually, we're located in—I kid you not—Center Of The World, Ohio, but Leavittsburg is the closest city with a post office), the world doesn't exactly beat a path to your doorstep. So those of you who gave up, please start calling again. I need to know what's going on. 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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SYNOPSIS

RAS's flexible reporting formats and charge back options let you keep track of your resources.

by Jon Radmer
Special to Focus

Time Insurance Company is relatively new as a Data General customer. We purchased our first MV (replacing an IBM 5520 system) to connect managers and secretarial support personnel via Data General's CEO system. That was four years ago. Today, we have over 800 users on an MV/20000 Model II and an MV /40000 Model I.

While we still use the MVs primarily for CEO, we are expanding the use of features such as SNA, RJE, CEO-DXA, and 3278 terminal emulation. We continually extract data from our IBM mainframe and incorporate it into CEO text that we use to communicate with insureds and agents.

Instead of blindly placing technology on everyone's desk, we wanted a way to ensure that our Data General resources were being used effectively. We found the best way to evaluate the cost of technology is to charge the user for time and services used, even if only in memo format.

Our options for a chargeback system were to either write our own, or purchase a package. In August of 1988, we decided to evaluate the Resource Accounting System (RAS) from DMS Systems, Inc. I know we tested the limits on several items within the package.

The flexibility within the RAS software for charge back options and rate changes proved to be more than we needed. Of the many options available, we settled on CPU-time, disk storage, and disk I/Os. We also charge for port usage, with different rates for terminals, PCs, and printers. The accuracy of the charges couldn't be closer (within the limits of DG's collecting).

In cost considerations, we compared the initial cost of RAS and the annual maintenance charge, versus our own development, upgrade, and support costs. In addition to these, we kept in mind the burden placed on the system by doing the overall data capture for the charge back. Both options require SYSLOG, therefore, the cost of running RAS was limited to the capturing of disk space. For 800 users with CEO mail boxes and files plus UDD space and other assigned directory space, this feature uses only seven CPU seconds per day, checking once every eight hours.

Our initial cost two years ago for a network license and base license was $3,600. Our internal costs could not compete, especially considering that we needed to go live with a full charge back system on January 1, 1989.

As mentioned, our original charge base was 250 users on an MV/20000. Our current base is over 800 users on an MV /20000 Model II and MV/40000 Model I. We easily print over 80,000 CEO documents every month. Our systems run 24 hours a day, seven days a week.

The flexibility of the RAS system exists in both reporting formats and charge back options. Its features include:

- Reporting by date range
- On-line menu-driven selection features
- Flexibility in charges and options
- Pre-defined basic reporting formats
- Ability to tailor formats, concepts, and sequences
- Ability to create flat file output
- Graphic time-of-day reporting for users, printing, and number of processes.

Support and installation

The initial reporting levels are limited for a company of our size. And yes, we had problems dealing with the limits. DMS would set them; we would test and exceed them. We found the people at DMS appreciated our feedback.

So far, RAS sounds like the best thing since the microchip, so here's the bad news. RAS isn't DMS's only product. It doesn't get the publicity that DMS's other products do. Because of this, changes to RAS sometimes take a back seat. However, I have received six upgrades or new revisions within the last two years. The RAS disk space checker collects data three times a day and has never failed.

DMS is a small company. When you call, you talk directly with the developer. Problems are resolved over the phone, or DMS can provide dial-in support. The staff at DMS is as professional as any, and easy to work with if you have a problem or just need information.

I have never seen another package that installs as easily as RAS. For us, it is key in @MTDO:0 from a CLI prompt within the root and press New Line. As I was writing this article, I installed rev 3.03. It took five seconds of my time with the current system running.

In short

RAS is a good product that can give you the information on where your resources are going, when they are being used, and by whom. Our experience has worked out well, mostly because we knew what we wanted. We used the trial package to the limits, setting aside time to give us a fair chance to understand what RAS could provide. Before you buy any product, I suggest you investigate what changes the vendor has planned for the future, and by all means, check with other users and ask about vendor support. Δ

Jon Radmer is the system manager for the MV systems at Time Insurance Company. He may be reached at 414/277-4783.

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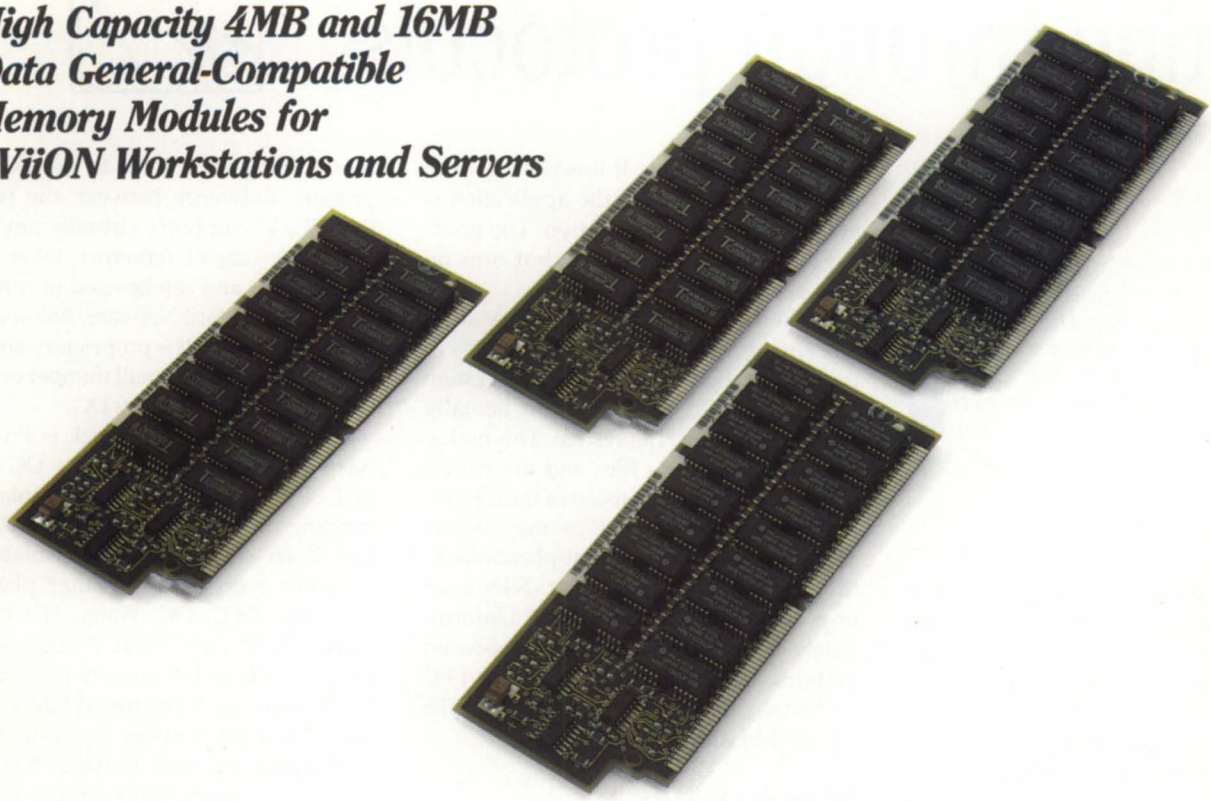

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Sorting through protocols

SYNOPSIS

There are several routes for getting from one computer system to another. This article examines the pros and cons of six different ways to connect your DG computer to a local area network.

It's an annual event. Every 12 months (or does it just seem that often) there is yet another way to connect computers to one another. Life used to be simple. First there was Xodiac, then Blast, but when local area networks (LANs) came into the picture, things became complicated.

Today, there are no less than *six* different ways to connect an MV family computer to a LAN. Three of them are also compatible with Aviions, and most can be used to link to PCs in one way or another.

Without going into technical detail, let's look at the big picture to understand which of these six products and their associated protocols can be used between MVs, Aviions, and PCs. Once you've selected one or two options that meet your needs, *then* it's time to learn more about that specific option.

The products

Xodiac is, of course, Data General's proprietary networking scheme specific to MV family computers. Xodiac offers excellent performance and functionality. Its only drawback is that it is of no help in communicating with non-MV systems.

TCP/IP is at the other extreme. Far less functional than Xodiac, TCP/IP has the advantage of operating on virtually any minicomputer platform and, to some extent, on PCs as well. The disadvantage of TCP/IP is that it offers only rudimentary file transfer as opposed to true file service. The File Transfer Protocol (FTP) is the component of the TCP/IP family that performs these operations, and FTP only transfers whole files. If this is done from within an application, the application is very aware of the transaction. The product isn't very sophisticated, but runs on almost everything.

In the Unix world, Sun Microsystems has added a layer on top of the TCP/IP protocols called the Network File System or NFS. Using NFS, you can actually "mount" a remote file system. This makes the remote server's files and directories look like a simple extension of the client's. Once mounted, these files may be accessed by users or even applications as though they were local files. NFS is an important extension of TCP/IP. Unfortunately, it only works well on Unix-based systems. Sun offers a package called PC/NFS that allows PCs to operate as NFS clients, but its use is limited.

PC-specific services

Returning to the Data General world, there are three products designed to allow minicomputers to act as servers to smaller systems. Both PC/VS from Rational Data Systems, and DG/PC*I from Data General allow PCs to access the AOS/VS file system. Like NFS does for Unix, these products present the PC with what appears to be a simple extension of the MS-DOS file system. PC users and applications can access AOS/VS files as though they were local to the PC. The primary difference between the two is that PC/VS supports virtually any type of cabling scheme (ethernet, token ring, Arcnet, etc.) and can be used in conjunction with standard Netware/286 and 386, whereas, DG/PC*I is proprietary and can only be used with a small number of LAN controllers supported by DG.

The new kid on the block is Portable Netware (PNW). Compared to DG/PC*I and PC/VS, PNW has the advantage of running on Aviions as well as MVs. In fact, PNW services will be available on virtually every minicomputer platform including DEC, DG, Wang, HP, Prime, Unisys, MIPS, and NCR. As opposed to PC/VS, which is Netware-compatible, PNW really is Netware. While PC/VS users can access Netware servers and MVs simultaneously, with Portable Netware, access to minicomputer servers is done using the same Novell protocols as used to access 80286 and 80386 servers. Finally, PNW also supports Macintoshes, something not available with any of the other true file service products.

Clients vs. servers

Referring to Figure 1, notice the distinction between clients and servers. Put simply, clients make requests of servers. That implies that servers are typically

Figure 1: Clients vs. servers

	Xodiac	PC/VS	PC*I	TCP/IP	NFS	PNW
MV as server	yes	yes	yes	yes		yes
MV as client	yes			yes		
Aviion as server				yes	yes	yes
Aviion as client				yes	yes	
PC as client		yes	yes	yes	yes	yes
Macintosh as client						yes
Unix as client				yes	yes	
True file service	yes	yes	yes		yes	yes
Tight coupling	yes	yes	yes		yes	yes
Netware compatible		yes				yes

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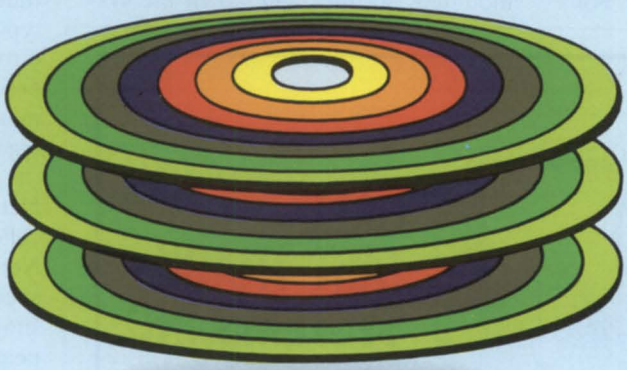

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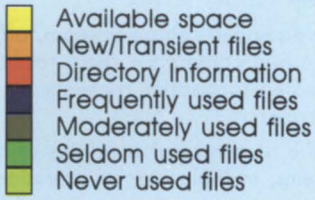

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waiting around to receive these requests, whereas clients can come and go. It also implies a one-to-many server-to-client relationship. One server can handle many clients. Finally, the client-server relationship implies that clients are possibly interactive, whereas servers are unattended. Of all the products listed, only TCP/IP (with or without NFS) and Xodiac allow the minicomputer to act as a client. For example, these products allow a user at a DG terminal to fetch a file from a remote system. PC/VS, DG/PC*I, and PNW only allow the host to play the role of server.

True file service

There are two styles of file service. True file servers present a file system that magically appears to be attached or "mounted" to the client's own file system. The server is transparent, and in fact, users may be unaware that their files are stored remotely. Applications can access remote files as though they were local. If an application needs to read a single remote record, only that record is moved across the network.

A loosely coupled system is much less sophisticated. It simply provides a file transfer capability. In this case, the user typically asks that a file be moved in one direction or the other. If an application needs to access a single record of a remote file, it must move the whole file, regardless.

Netware compatibility

Portable Netware is, of course, already Netware compatible, but why ask the same of the other products listed? Quite simply, with something like a 65 or 70 percent market share, it's a Netware world out there, and while Netware is the obvious choice in the PC arena, the introduction of Portable Netware is already carving out a niche for this protocol in the minicomputer arena as well. In addition, ever-improving support for the Macintosh by both PC and minicomputer servers gives Netware yet another feather in its cap.

Summary

What's the bottom line? The chart says it all. If you want to loosely couple systems from multiple vendors, TCP/IP is the way to go. You can easily transfer files from one system to another. However, if you want true file and print services, your best bets are NFS (for minicomputers only), or PNW (for PCs).

What to do if you want to use both minicomputers *and* PCs as clients? For now, your only chance is to use something like Sun's PC/NFS product, which unfortunately fairly monopolizes your PC. Netware on your workstation is much less obtrusive in terms of memory and interference with other software. I think it's safe to assume there will be much more growth in the Netware arena than with TCP/IP-only products. Δ

Doug Kaye is president of Rational Data Systems, Inc., and can be reached at 1050 Northgate Drive, San Rafael, CA 94903; 415 /499-3354. *Copyright © 1990 Rational Data Systems, Inc.*

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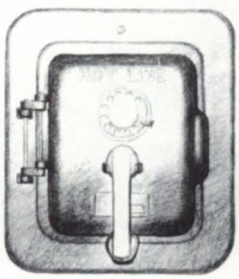

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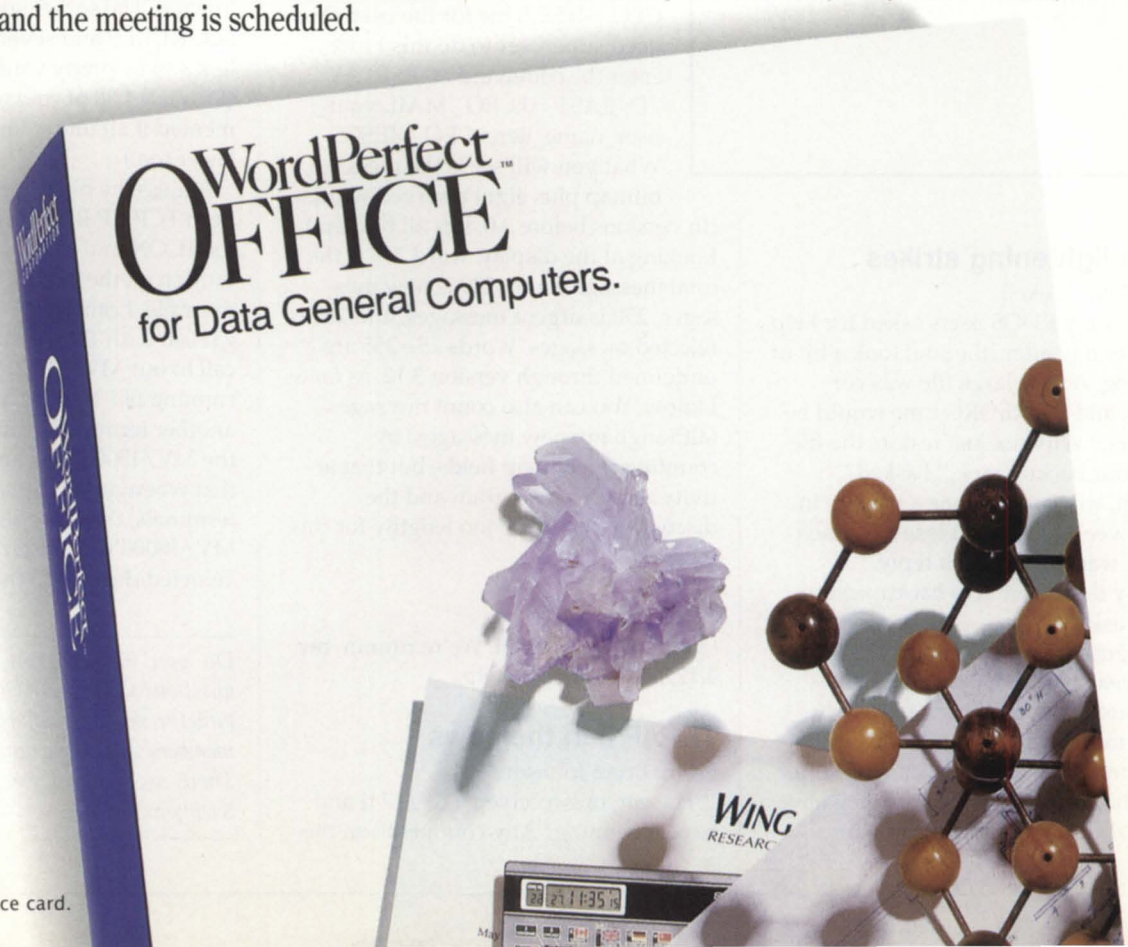

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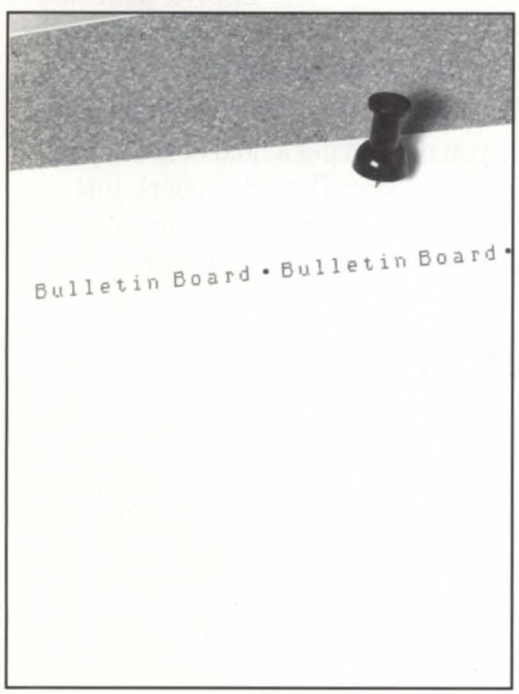

When lightening strikes

From: John Teekell

One of my RDOS users asked for help the other day after [the site] took a hit of lightning. A very large file was corrupted, and the REORG time would be 16 hours. "Why not just restore the file from your backup tape," I asked?

"Well, we haven't done a backup in over a week, so we will lose too much work," was the sheepish reply.

"Why don't you do a backup every day," I asked?

"Because it takes too much time."

For years, I've been trying to get every site to do daily backups. Fortunately, most of them do. For the few who don't, they are the ones who suffer. 'Tis a shame, especially when they have DNIDUMP capability. But even an FDUMP beats the heck out of a 16-hour REORG.

Viewing CEO in-boxes, politically safe?

From: Matt Koch

Does anybody know of an easy way to get a count of the number of messages in every in-box in CEO? I'm running a CEO shop with about 250 users. Getting into everybody's in-box to take a look is kind of painful, not to mention politically unwise.

From: Alain Gross

One way to do that is to run CEO_JANITOR at least partially. If you run CEO.JANITOR.POA.CLI /C=nn /LOGFILE=name (!! will stop CEO_POA), you will obtain a list in the file called "name" containing each user with the count of their Inbox, Wbsks, files, messages, and other information.

From: Stan Gula

Assuming you have CEO rev 3.0 or later, or CEO Light, you can just look in the header info in the CEO_MESGS file for the user. (You need superuser to do this.) Just enter the command :XDISPLAY /D/LAST =0:CEO _MAIL:your_user_name_here: CEO_MESGS. What you will see is the message bitmap plus eight reserved words. (In versions before 3.0, it is all bitmap.) Looking at the display, word 248 is the total message count, 249 is new messages, 250 is urgent messages, and 251 is rejected messages. Words 252-255 are undefined through version 3.12, as far as I know. You can also count messages (although not new messages) by counting the bitmap fields, but that activity requires a program and the discussion would be too lengthy for this message.

From: Matt Koch

Thanks very much. We're runnin rev 3.12, so this should help.

TCP/IP II in the news

From: Brian Johnson

Has anyone received TCP/IP II and have it running? Any comments on the speed compared to TCP/IP I? What is the manual number? I need to order a copy and can't find it referenced anywhere. Also, is the Sockets & Streams library supported under AOS /VS II TCP/IP II? It was only supported under DG/UX with TCP/IP I. Also, is there a manual which discusses the programming interface to TCP for AOS /VS I and II?

Thanks in advance, all you COMMies.

From: Doug Rady

We have it running and have some documents: *Managing AOS/VS II TCP/IP (093-000704)*, which hasn't been officially released yet, but is a very good manual to have, and *Using AOS/VS Internet (093-000399)*, which supposedly has been updated for TCP/IP II.

Performance of terminals is so good you can actually use them for serious work! The VT100 conversion works well enough to do real work from an Aviion, but using a normal DEC VT can be tedious due to the inability to remap the keys. The kernel-based TCP/IP II along with XTS II blows the previous stuff out of the water!

The Socket document comes as an online file. The socket support consists of a SOCKET.LB and several .H files. It all looks to be pretty vanilla socket stuff. (DG/UX 4.30 of course has reimplemented it all under Streams, and it is faster too.)

I guess the big thing is performance! Both TCP/IP II and XTS II when used for TCON and VCON put very little burden on the system. As a poor example, I can Telnet into our MV /18000 with TCP/IP II and then XTS II call to our MV/15000 Mod 20, which is running old TCP/IP and old XTS. From another terminal, I can Telnet directly to the MV/15000. The amusing thing is that when doing the same stuff on both terminals, the one going through the MV/18000 runs faster than the one Telneted directly to the MV/15000. 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. There are no fees for use other than the telephone charges.

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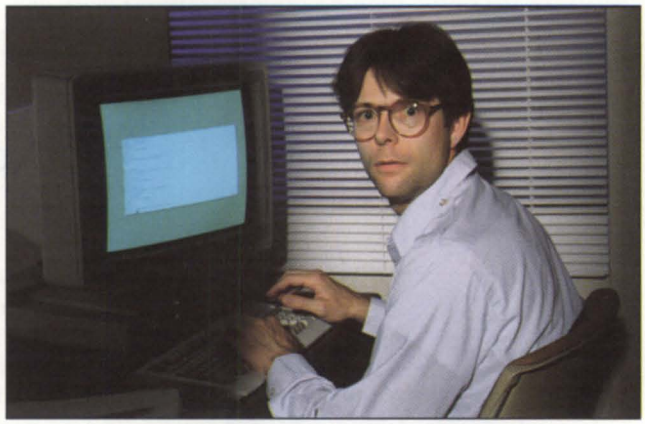

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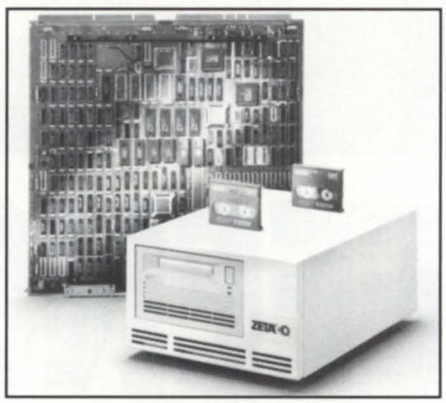

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Circle 67 on reader service card.

Network version of EMU/470

San Rafael, CA—Rational Data Systems, Inc., and Rhintek, Inc. announced the immediate availability of a jointly developed network version of Rhintek's EMU/470 terminal emulation software package.

This new product, EMU/IPX, combines the D470-compatible features of Rhintek's EMU/470, with the communications technology of Rational Data Systems (RDS) to allow connection over a local area network (LAN) to a Data General ITC or LTC controller or Termserver.

RDS also announced licensing of its LAN-based communications code from Popterm to other terminal emulation vendors.

Both Popterm and EMU/IPX run on IBM PCs and compatibles, and are compatible with Novell's Netware, and RDS's PC/VS software. These emulators connect to LANs using any ethernet controller, or via a token ring, Arcnet, or any other LAN topology if a Novell Netware file server or bridge is installed. Full color and graphics utilities of the EMU/IPX require an EGA or VGA monitor.

Rational Data Systems, Inc., 1050 Northgate Drive, San Rafael, CA 94903; 415/499-3354.

Circle 61 on reader service card.

MV and Aviion, a better connection

Westboro—Data General announces 150 MB QIC (quarter-inch cartridge) tape drives to enhance interoperability between the Eclipse MV family of minicomputers, and Aviion workstations, servers, and multi-user systems. The cartridge tape drives can be interchanged among proprietary systems, Unix-based open systems, and selected Data General PCs.

High performance tape drive models

6536, 6577, 6656, and 6679 largely replace existing half-inch, 130 MB tape drives by supporting systems with medium-volume storage requirements of up to 150 MB of storage. These QIC tape drive models are designed primarily for streaming operation for disk back-up, software distribution, data interchange, and booting.

Tape interchange between Aviion and the MV family is achieved through adherence to CPIO (Copy In/Out) and TAR (Tape Archiver), *de facto* standard Unix tape interchange formats. The compact, half-high, 5.25-inch form enables tape units to be mounted in either the Combined Storage Subsystem (CSS), the Peripheral Housing Unit (PHU), or internally in the Dasher/386-25 PC, MV/5500 DC, or MV/1000 DC.

Tape drives are available upon receipt of order and prices for models 6536, 6577-E, 6656-M, and 6679-E are $1,100, $1,895, $3,995, and $3,995 respectively.

Data General Corporation, 3400 Computer Drive, Westboro, MA 01580; 508/366-8911.

Circle 56 on reader service card.

Reducing bottlenecks with Diskopt

Salt Lake City, UT—DMS Systems, Inc. announces that revision 2.30 of Diskopt can now more strategically place frequently used files on a disk.

Diskopt users previously could designate files to be placed near the directory and system information, but it was still difficult to determine exactly which files were used the most. Now, with Diskopt File Tracking, full disk reorganization will take place, positioning files in optimal order. Diskopt developers say that most systems with a disk bottleneck will see a performance improvement.

Diskopt File Tracking allows system managers to have access to a list of files arranged in order of usage frequency. A report is produced for four categories of access: frequent, occasional, seldom, and never—files not used being excellent candidates for archiving. This list may be generated as a formatted report or in CLI format to be used as part of a macro, facilitating automatic backup and deletion of files.

Diskopt 2.30 also offers a "fast move" facility for files and directories. "Fast move" is accomplished by leaving a file's data in place on the disk and moving only the pointer, eliminating the need for data duplication.

DMS Systems, Inc., 1111 Brickyard Road, Salt Lake City, UT 84106; 801/484-3333.

Circle 59 on reader service card

Remail from US & T taps CEO systems

Hopedale, MA—US&T announces Remail, a software program that connects multiple CEO systems using regular phone lines and modems. Remail uses the CEO Toolkit, so it transfers messages and files over a dial-up network trans-

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parently between systems. Remail can replace the expensive need to lease lines using XTS and Xodiac to connect with CEO systems.

Remail runs on Data General's MV family of minicomputers under the AOS/VS operating system. It requires revision 7.64 or higher of AOS/VS, revision 3.10 or higher of CEO, or revision 1.0 or higher of CEO Light, and any revision of MTA.

Modems should be Hayes-compatible, preferably supporting the soft commands for controlling modem control signals (the &C, &D, and &S commands). US &T also supports older Hayes 1200 type modems. Line speeds up to 9600 bps are supported on IAC-8s.

Remail is available immediately for a price of $2,500 for the first two systems, and $500 for each extra system.

Unified Solutions & Technologies, Inc. (US&T), 5 Airport Drive, Hopedale, MA 01747; 508/478-8211.

Circle 65 on reader service card.

CEO and Office /Publisher bundled

Westboro—Data General announces a special bundling program developed from the union of CEO and Office/Publisher. CEO and CEO Light users can now take advantage of office automation *and* electronic publishing simultaneously. This combined program is offered for a slight fraction more than the cost of CEO or CEO Light software.

In addition to CEO features such as electronic mail, filing, word processing, etc., this program will now also include the ability to produce typeset-quality documents with graphics and text. An optional graphics scanner interface incorporates photos, line art, and graphics from a variety of sources. Office/Publisher is built around CEO, CEOwrite, and Wordperfect software so users do not need to learn a new editing system.

The CEO and Office/Publisher bundling program features a choice of CEO or CEO Light, Office/Publisher, three laser printer drives, and Swiss 721 soft fonts. Through September 29, customers who already own CEO or CEO Light software can receive a special discount on the addition of Office/Publisher.

Data General Corporation, 3400 Computer Drive, Westboro, MA 01580; 617/366-8911.

Circle 57 on reader service card.

U.S. Robotics ships speedy modems

Skokie, IL—U.S. Robotics is shipping Courier-brand high-speed modems that are fully CCITT V.42/bis compliant. These products will continue to support MNP levels one through five, guaranteeing compatibility with the industry's current *de facto* error-control and data compression standards.

The Courier HST Dual Standard combines the company's propriety 14,400 bps HST technology with the CCITT V.32 9600

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bps transmission standard, and supports all major modulation standards. It is available for a suggested retail price of $1,595 for the standalone model.

The Courier HST, featuring asynchronous and synchronous communication up to 14,400 bps using USR's HST technology, supports all major modulation standards including Bell 103/113, 212/212A, and CCITT V.22bis, V.22, and V.21. It is available with V.42bis for a suggested retail price of $995 for the standalone model.

The Courier V.32 uses full CCITT V.32 compatibility for 9600 bps transmission, operates in asynchronous and synchronous full duplex modes, and supports all major modulation standards including V.32, V.22bis, V.22, and V.21. It is available with V.42bis for a suggested retail price of $1,099 for the standalone model.

Field upgrades for external and rackmount Courier HST Dual Standard, Courier V.32 and Courier HST (14,4000 bps models only) modems began June 1, 1990. Upgrades to incorporate the new features are available by sending the product to U.S. Robotics, and are free for modems purchased after October 1, 1989. Otherwise, a $50 fee is charged.

U.S. Robotics, 8100 North McCormick Blvd., Skokie, IL 60076; 708/982-5010.

Circle 66 on reader service card.

An alternative to National's F9445 processor

Bellevue, WA—Strobe Data announces the ICD9445 microprocessor, a pin-compatible clone of National Semiconductor's 16-bit F9445 processor, whose design originates from Data General's Nova minicomputer series. The chip promises 20 MHz throughput, implemented in a 1.2 micron CMOS, and it effectively completes the RISC-like instruction set of the F9445.

CMOS implementation reduces power consumption to under 300 milliwatts. F9445 power consumption, in contrast, runs over 2 watts. Packaged in a plastic 40-pin DIP, the ICD9445 is pin fit and functionality compatible with the National part.

Strobe Data has evaluation parts available immediately with full production scheduled by the end of the summer. Prices are expected to run around $250 in small quantities.

Strobe Data, Inc., 13240 Northup Way, Suite 19A, Bellevue, WA 98005; 206/641-4940.

Circle 63 on reader service card.

Plus III Portapak plays the field

Atlanta, GA—Plus III Software, Inc., unveiled Portapak, a hardware and software package designed for surveying, photogrammetry, and civil engineering. Portapak allows computing to move from

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Threshold, Inc.

(205) 821-0075

Circle 46 on reader service card.

the office directly into the field for increased productivity and profitability.

The Plus III Portapak comes in two configurations—the Field Surveyor Portapak, and the Advanced Surveyor Portapak—with the new Data General Walkabout/SX as the foundation for both.

The Field Surveyor includes the Walkabout and the following software: Terramodel land modeler, basic COGO, and a draft module. If bought as a package, the price is $5,395, 25 percent less than if bought separately.

The Advanced Surveyor contains the Walkabout and the following software: Terramodel land modeler, COGO, a draft module, and a contour module. The price for the Advanced Surveyor Portapak is $6,995, compared to $8,595 if bought separately.

Plus III Portapak's are available immediately and include a 90-day warranty and support contract.

Plus III Software, Inc., One Dunwoody Park, Suite 250, Atlanta, GA 30338; 800 /235-4972.

Circle 60 on reader service card.

Attention NADGUG Members

Notice of NADGUG Executive Board Nominations

The following is the report of the Nominating Committee for the October 1990 meeting.

Those recommended for election at the 1990 Annual Meeting of the North American Data General Users Group are as follows:

Officers

Vice President:	Dennis Doyle Beaverton, Oregon
Secretary: (2 years)	Tim Boyer Warren, Ohio

Standing Committee Chairs

Conference Committee: (1 year)	Jan Grossman Minneapolis, Minnesota
Membership:	Chris Thorpe San Diego, California
RIG/SIG:	Bart Bates Calgary, Alberta
Bylaws:	Brad Friedlander Cambridge, Massachusetts
Planning: (1 year)	Lee Jones Houston, Texas

The officers are elected by vote of the general membership, while the committee chairpersons are appointed by the incoming President. Under the bylaws, the Vice President automatically succeeds to the office of President.

If you are unable to attend the annual meeting on October 23, 1990 in Seattle, Washington, you may assign your proxy using the card inserted in this magazine.

Nominating Committee:
Francis J. Perry, Vice President
Donald Clark, Past President
Steve Kern, Member-at-Large

Circle 33 on reader service card.

Aviion design tools sizzle

Claremont, CA—Software Systems Design announces a set of development tools for C programmers that can be used on the Aviion. The C Integrated Software Lifecycle Environment (CISLE, pronounced "sizzle") is a set of software design tools based on the same technology as the AISLE family; Ada design tools that are used in programs such as the Air Force's ATF, Army's LHX, and Navy's ATA.

The CISLE includes several programs such as a design language, a documentation and publishing system, a testing assistant, and a graphical reverse engineering tool. CISLE tools are available separately, and on a wide variety of systems.

Software Systems Design, 3627 Padua Avenue, Claremont, CA 91711; 714/625-6147.

Circle 62 on reader service car

Discounted TDPs

Westboro—Data General announces several savings on its Technical Documentation Packages (TDPs). The AOS/VS general user package, discounted 10 percent, is priced at $284. The AOS/VS System Managers and Operators package, also reduced 10 percent, is priced at $225. The documentation package for AOS/VS programmers and system programmers is now listed at $185, the package for Assembly language programmers is $320, and the package for AOS/VS II documentation is $693 (a 20 percent savings). Data General has also discounted its AOS/VS master reference library by 20 percent, pricing it at $875.

DG also announces a new package designed for DG/UX Aviion documentation. This product includes materials concerning operating systems ($342), net-

work computing ($212), client/server information ($596), X windows documentation ($162), OSF/Motif ($158), general use ($311), administrator and system manager information ($167), programmer's package ($761), network programmer's package ($225), and a master reference library ($1,109).

Orders can be processed by mail, facsimile, or phone, and are available immediately.

Data General Corporation, 4400 Computer Drive, Westboro, MA 01581-9973; 1-800/876-3433 (phone), 1-508/898-2382 (fax).

Circle 58 on reader service card.

Increased memory board size for MV/7800[XP]

Beverly Hills, CA—System Controllers and Interface Products (SCIP) expanded its line of memory boards for Data General processors MV/7800 and MV/7800X.

In addition to memory boards MV780-4MB and MV780X-10MB, SCIP now offers memory sizes MV781-16MB, and MV781-24MB. The MV781-24MB memory board can permit the MV/7800 or 7800XP to expand to either 26 MB or 28 MB, depending on the size of main memory on the processor board.

The MV781 is a jumper-configurable daughter board that is usually configured at the factory per order for either the MV/7800 or MV/7800XP. From a switch on the board edge, users can either select the memory starting address on the CPU board (for example 2 or 4 MB); or deselect the SCIP memory from the system. A memory access indicator is also located on the board edge.

The list price for the MV781-16 is $5,300, for the MV781-24 $7,500, and delivery varies from stock up to 10 days.

System Controllers and Interface Products, 441 So. Beverly Dr., Suite 2, Beverly Hills, CA 90212; 213/282-8700.

Circle 64 on reader service card.

Evaluate TCP/IP for AOS/VS

Northboro, MA—Claflin & Clayton (C&C) announced details of an evaluation and trade-in program designed to introduce its TCP/IP to Data General Eclipse/MV computers.

The program offers evaluation of a fully functional TCP/IP for DG AOS/VS systems. For installations that currently have DG's TCP/IP installed, C&C is offering a trade-in that allows for a credit of up to 50 percent of the appropriate C&C TCP/IP license fee upon presentation of proof of purchase. No new hardware is required, since C&C TCP/IP supports all DG controllers. All C&C TCP/IP licenses include an initial one year of full support.

Claflin & Clayton, 203 Southwest Cutoff, Northboro, MA 01532; 508/393-7979. Δ

Circle 55 on reader service card.

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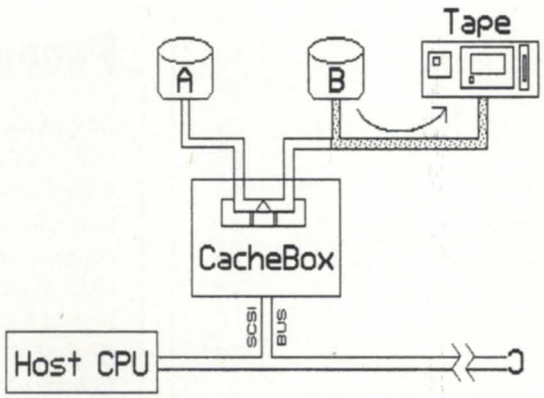

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ON-LINE HELP

Who to call for answers about NADGUG *and* FOCUS

NADGUG

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

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

Electronic bulletin board
(300 or 1200 baud modem)
Rational Data Systems **415/499-7628**

NADGUG staff and Focus Magazine address:
c/o Turnkey Publishing, Inc.
Stillhouse Canyon Office Park
4807 Spicewood Springs Road, Suite 3150
Austin, TX 78759
FAX: 512/343-7633

FOCUS Magazine

512/345-5316

Editorial comments, article suggestions.....Robin Perry
(please send product announcements to the address listed above)

Information about advertising.....Michelle Sentenne

FOCUS back issues.....Turnkey Publishing staff

Make the Connection!

- AOS/VS
- Business BASIC
- CQCS
- Educators
- Federal
- INFOS II
- ICOBOL
- Law Enforcement
- Lions Gate
- OASIS (Office Automation)
- :PERFSIG (performance and capacity planning)
- SIG/UX (Unix)
- SMBASIC

Let the North American Data General Users Group (NADGUG) connect you with other Data General users who have a similar special interest and who want to share information, ideas, problems, and solutions. No matter what the special interest is behind the group — equipment, systems or application software, major language, operating system, industry type — the reason is the same: to work together to exchange ideas on how to get the best performance out of your DG system.

Listed above are NADGUG's current special interest groups. If you are interested in making the connection with one of these groups, or if you have an interest that needs a group, please contact NADGUG's RIG/SIG coordinator, Greg D. Goss, at 1-800-USR-GRUP (512/345-5316 outside U.S.) for further information.

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:SYSMGR BBS specializes in file transfer of RDOS and AOS[/VS] DUMP files - no messaging facilities. XMODEM, YMODEM, and KERMIT supported. 415/391-6531(one line), 2400 baud (Vadic 3447), 8 data bits, 1 start/stop bit or 415/550-1454 (voice). System is MV/4000, terminal mode is CHAR /605X.

Data General received an order worth $3.6 million from **Allen-Bradley**, a **Rockwell International Corporation**, for a private label version of the DG Walkabout/SX laptop PC. Allen-Bradley will market the laptop as a programming terminal for its programmable logic controllers (PLCs), which are used to control manufacturing processes on a plant floor.

■

Legal solutions providers **Mitratech** and **CAPA (Computer Analysis and Programming Associates)** signed agreements with Data General to provide their software on the Aviion platform.

Mitratech, a DG value-added reseller (VAR) that provides legal automation software aimed at corporate law departments and personal injury segments of law firms, will purchase $2.6 million worth of Aviion systems over a three-year period.

CAPA signed an independent software vendor (ISV) agreement to co-market the CAPALAW fully integrated, interactive automation system for small to mid-size law firms.

■

A three-year resale agreement with **Resource Information Management Systems (RIMS)** valued at $60 million marks Data General's largest VAR agreement in the insurance industry to date. Under the agreement, RIMS will offer its Unix-based health benefits administration software, QicClaim/2, on Aviion workstations and servers. QicClaim/2 is a new claims processing system from RIMS, provider of QicClaim, the most widely used employee benefits software in the U.S. RIMS QicClaim/2 and QicClaim clients represent over 350 organizations, which collectively process health claims for over five percent of the U.S. population.

■

Say what? Three new agreements with third-party software vendors will provide interoperability capabilities for Aviion and

Quality assurance check at DG's manufacturing facility in Apex, North Carolina on portables bound for Allen-Bradley

Dasher systems running DG/UX. Under the agreements, DG will sell the following packages: the Express family of IBM communication software from **System Strategies, Inc.**; **Locus Computer Corporation**'s PC-Interface and PC-Xsight software; and **Communications Research Group**'s Blast II asynchronous communications software.

■

Who's who in sales. Wordperfect Corporation finished its second quarter with sales of $106.3 million, a 63 percent increase over second-quarter sales in 1989. Year-to-date sales total $214.8 million. Versions of Wordperfect 5.1 word processing software accounted for nearly 70 percent of sales.

Dataram Corporation, marketer of computer memory and peripheral products, reported revenues of $20.2 million for its fiscal year 1990, compared to revenues of $14.4 for fiscal year 1989. For the fourth quarter ending April 30, revenues reached a record high of $6.6 million, compared to $4 million in the fourth quarter of the previous year.

■

Open systems, open pocketbook. Over $2.5 million in sales resulted from a single seminar and open systems exhibit in New York City, according to Data General. DG hosted the seminar, which included presentations by DG Chairman **Ed de Castro**, President and CEO of **88open Thomas Mace**, and **Charles Corley** from **Motorola**'s 88000 RISC architecture group. Arranged by DG Eastern Operations Vice President **Bob Tway**, the program included interoperability demonstrations between DG proprietary and open systems. Over 300 value-added resellers (VARs) and representatives from 132 companies attended.

■

Rational Data Systems (RDS) announced a corporate restructuring. **Doug Kaye**, who founded RDS in 1977, assumed the role of RDS president, replacing **Pete Wiggins**, who is now the president of **Intelligent Systems Development Corporation (ISDC)**, an independent company located in Pasadena, California. RDS sales and support departments previously located in Pasadena were relocated to the main office near San Francisco.

Kaye explained that the restructuring resulted from RDS's divided interests over development of its own communications software products, and resale of third-party products for PC networking.

RDS will concentrate on developing and supporting its PC integration products such as PC/VS and Popterm for the DG marketplace, as well as entering additional markets with its involvement in Portable Netware from Novell. ISDC will pursue sales, installation, and support of complete solutions for DG and PC local and wide area networks, and will distribute and support RDS products in southern California.

■

More on that meeting with market analysts that was mentioned on this page last month . . . DG Chairman **Ed de Castro**, Senior VP of the Systems Development Division **Tom West**, **Joel Schwartz**, VP of the Software Business Unit, Controller **Bob McBride**, and President **Ron Skates**, were on the high-powered management team that met with analysts from "major brokerage houses." According to Data General, the message delivered was this: "Data General's dual product strategy of proprietary and open systems is on target and on schedule." Δ

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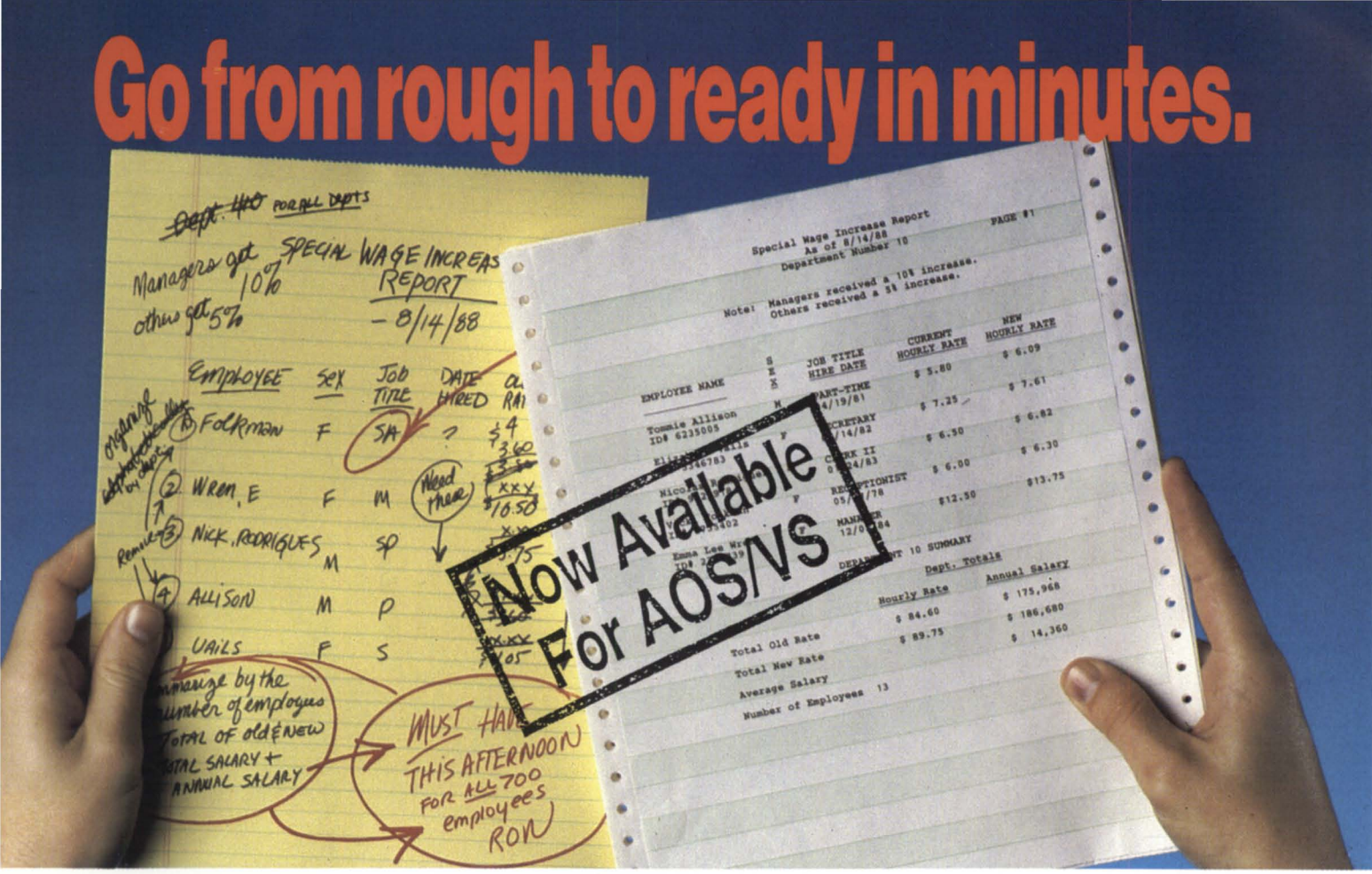

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