

SOURCE DATA

THE DATAPoint SYSTEMS NEWSLETTER

No. 16

December 1981/January 1982

About SOURCE DATA. . .

There's been a change at SOURCE DATA: me! I'm the new editor, and I want to take the opportunity to talk with you about:

MAILING:

Msometimes, we get calls from you, and you tell us that you haven't received your copies of SOURCE DATA. If you have moved, you need to let us know your new address, about 2 months in advance, if possible. This way, we can change our address file in time for the next mailing. You may also want to make sure the Post Office is forwarding your bulk rate mail. The Post Office throws away bulk rate mail if you have not specifically guaranteed that you will pay postage on bulk rate mail to be forwarded. We try to mail before the 10th of the month, so if you can't get your address to us before the 30th of the month, check with the Post Office about forwarding your bulk rate mail.

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Aour close date for advertising is the 5th of the month. For example, if you want to advertise in the April/May issue, you need to get your release form (and camera-ready art, if you are sending it) to me by April 5. Make sure that you use names trademarked by Datapoint correctly. All references to DATASHARE® and DATABUS® should be set in upper-case letters. If you aren't sure about the trademarking of a Datapoint product, please call before you send!

YOUR LETTERS:

Yplease send them! I'm always anxious to get any information that you might have concerning SOURCE DATA or Datapoint. I need your input to make SOURCE DATA your publication. If you have tried a novel application that worked well for you, share it with us. Chances are, we'll print your suggestion.

If you ever have questions concerning SOURCE DATA, please don't hesitate to get in touch with me, Karrie Reagan, at (512) 699-7059. I'll be glad to spend some time with you.

New Capabilities Available in RMS

RMS™ version 1.7 adds even more capabilities to Datapoint's Resource Management System™.

Word Processing Available

The Integrated Electronic Office™ comes to RMS 8200 workstations and 8600 consoles with the introduction of RMS IEOS. This release is a subset of the DOS IEOS version 1.3. The major exception is that document retrieval via the Associative Index Method™ (AIM™) will not be introduced until the next release of RMS

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RMS Question and Answer

The number of users on RMS, the 8800, and the 8600 is expanding each day. Accordingly, you have questions. Here are some of the more frequent ones.

Q How many datastations or workstations can be configured on a system?

A The number of datastations or workstations that may be configured depends on the user's application, including the amount of memory in the nucleus. Typically, the nucleus size ranges from 28K to 40K, depending on the number of devices configured for the system. The nucleus can, however, be more than 100K in size when configured as a data resource processor, depending on the number of buffers and the number of file access variables (FAVs). The user can allocate up to 240 memory buffers for a node identified as giving file node support. In a typical configuration, the node will need between 10 and 12 FAVs and 96 buffer sectors.

A full function workstation generally uses 64K of memory. DATABUS programs may exceed this limit. The 64K requirement is the general memory requirement for each port configured as a workstation, in addition to the nucleus requirements.

The memory requirement for a datastation depends on the number of buffers required for each file open, User Data Area (UDA), and the number of overlays required. Your local Datapoint office can help you determine the memory requirements for a DATASHARE configuration.

Q Can tubes be attached to a Data Resource Processor?

A Yes, but attaching tubes can impact performance, especially if the applications are CPU bound.

RMS New Capabilities (Cont'd) . . .

IEOS. AIM is currently being added to RMS itself, as a disk access method for use by not only word processing, but also DATABUS/DATASHARE. RMS IEOS may be ordered as model code 9853. The updated documentation is model code 50652. If you have not attended an IEOS training class, you need to attend one in addition to the general RMS training requirement, before receiving this software. The DOS IEOS training class many of you have already attended is acceptable.

RMS Now Tri-Lingual

The ever-popular language for batch report production jobs — Report Program Generator (RPG) — is now available in RMS, along with the two previous high-level languages DATABUS and interactive COBOL. Conversion effort required for those of you with DOS RPGPLUS is minimal. RMS RPGPLUS may be ordered as model code 9837. The User's Guide, Document No. 50609, is also available.

Q Are Serial Printers supported on RMS?

A A serial printer can be supported off the multiple port communications adapter (MPCA) with the release of RMS 1.6 on an 8800 or 8600. A printer can also be supported off the serial port on the 8600. The printer is a system printer and is capable of activities such as listing a file, spooling, IEOS, COBOL output, and so on. In addition, the printer is available to everyone on the system who has the correct security codes to the printer.

A serial printer can also be attached to an 8200 or directly off the MPCA (like DOS) and can be driven by DB/DS using the DISPLAY verb. On a 6600 these are the only supported means of using a serial printer. When a remote printer is supported via a modem, the ability to detect clear to send (buffer full) is not available unless an intelligent modem is used that can pass back clear to send.

Q What happens if two executors or unspoolers are configured for BJF with identical parameters (class, type, etc.)?

A If the job is submitted and the first executor or unspooler is busy, the job waits until the first executor or unspooler is available. Therefore, if you want duplicate executors or unspoolers, the parameters should not be identical.

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Dated Material: Techniques or facilities described in each issue are accurate as of the publication date; however, the computing industry changes rapidly, so please rely on up-to-date permanent documentation, such as user's guides, for details of software or equipment features.

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DATA PROCESSING

The Poor Misunderstood CALL Statement

Many programmers never use the CALL statement. "It's terribly inefficient," they say. "The manual says so." And sure enough, the *DBCPLUS User's Guide* says "CALLing [a subroutine] is considerably more time-consuming than executing the code in line."

But let's look again. That's not all the manual says: "If a page swap is invoked by the subroutine CALL, then CALLing the subroutine is considerably more time-consuming. . .". The villain, you see, isn't CALL, it's the page swap. By itself, CALL is a pretty fast instruction. But page swaps are always S-L-O-W. And guess what? On Datapoint systems, you'll probably get more of those bad page swaps if you don't use CALLs.

Page Swaps

So, what's a page swap? And why is it so slow? When your DATABUS or DATASHARE interpreter executes a program, it doesn't read the whole /DBC file into memory. Rather, it just reads in those sectors (or "pages") containing the code it needs at the moment. As long as the interpreter doesn't need anything outside those pages, it can fetch and execute the code at memory speeds — FAST! But as soon as the interpreter needs code that isn't in memory, it has to read it in from disk — SLOW! Even worse, the new code may very well overwrite the code that was in memory. So if you have to use that original code, it has to be read again, beginning a vicious circle.

This process of reading and re-reading code sectors is called page swapping. The more swapping your program does, the slower it's going to run. On old 2200 systems, only one sector of /DBC could reside in memory, so almost any CALL or GOTO would require a new page: swapping was a big problem. On modern systems with large memories, an active program may have a dozen or so sectors in memory all at once. Many CALLs or GOTOs will jump to memory code so swapping doesn't happen as often. But when it does, it's still a problem.

Anything that causes the interpreter to need a new page can cause swapping. A CALL can force a swap, but

so can a GOTO, BRANCH, RETURN, TRAP, or just a long in-line routine. In fact, if you write a program totally in-line, you can figure on needing roughly as many disk page reads as there are pages in your listing.

Now CALL Can Help

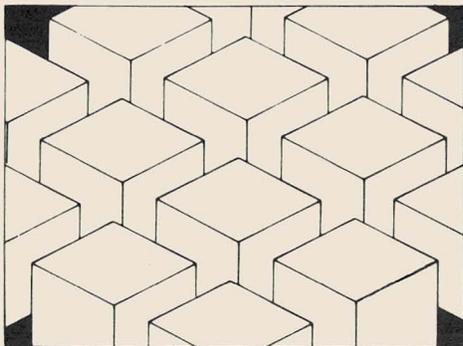
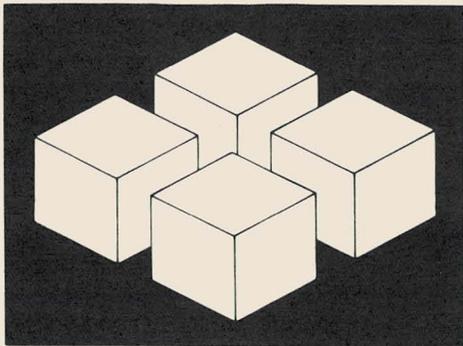
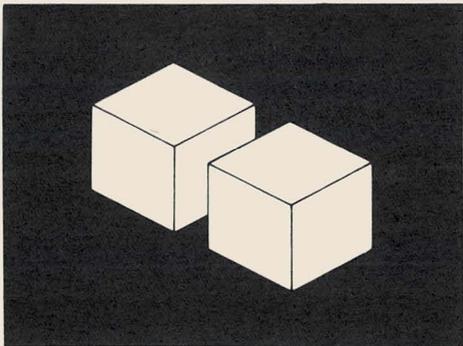
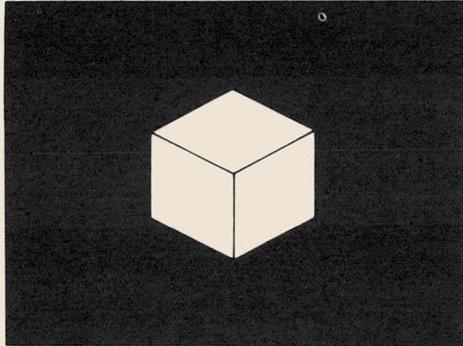
Here's where using CALLs can actually speed up your program. Let's take an example. Say that you have a long in-line program or routine that occupies 10 successive sectors of its /DBC file. That means you'll need 10 disk reads to get those sectors into memory. But suppose that 6 times within this program, you repeat substantially the same code — about a page of it each time. If you had written this code as a subroutine, the program would occupy only 5 sectors: 4 for the mainline and 1 for the subroutine. Behold! That version would execute with only 5 disk reads, about half as many. (We're making some reasonable assumptions about processor memory and program load.)

Furthermore, say this routine is a loop, executed many times, and say your port can reasonably count on having about 5 pages of memory for /DBC code. Using in-line code, you'll average 10 reads per loop, over and over and over, because each new page you read overlays a page you'll need again on the next pass through the loop. Lots of swaps! SLOW execution! Using the version with the CALLED subroutine, though, you'd only have 5 disk reads, once. After the first pass, all the code for the entire loop would be right there in memory. Zero swaps! FAST execution!

And so we come to the moral: if you want a fast, efficient program, use CALLs to avoid page swaps. And maybe a further moral: read your manuals carefully, so you're not misled by old wives' tales (or should we say old programmers' rules).

Thanks to user John Kneisly for sharing this with all our readers.

DATASHARE 6 1.2 Enhancements Examined



Some new features that you've been asking for have been implemented in the 1.2 release of DOS DATASHARE 6.

New Features

- One group of features will make it easier for you to bring up generalized data entry applications: NFORMAT, SFORMAT, COUNT, PACK, UNPACK.

NFORMAT dynamically creates a DATABUS numeric string variable in the requested format.

SFORMAT dynamically sizes a DATABUS character string variable to the requested length.

COUNT counts the minimum number of keystrokes to enter the data in a list of character and numeric string variables. This is useful to establish the number of keystrokes a particular data entry should take.

PACK concatenates character and numeric string variables into one character string variable. It is designed to be more efficient than several APPEND instructions.

UNPACK splits a character or numeric string variable into several string variables. It is more efficient than a series of RESET and MOVE instructions.

- Full support for Datapoint's 8600 processor has been added. This allows easy migration of a customer's DATASHARE application to the 8600 processor. The 8600 support requires DOS.D 2.7 and ARC 1.7.
- Two new list controls have been added to WRITE statements to aid data entry applications. One, *LL, causes characters to be written from the string only through the logical length rather than the physical length; *PL reverses an *LL.
- When running an 1800/3800 with 9462 MPCA, a maximum of 8 ports can be configured.
- Serial printer support off the ICA on an 1800/3800 is allowed for DATASHARE local printing.
- The print line width has been increased to 156 characters to allow a full width print line on 12 pitch printers and compressed print on 160 and 45 cps printers.
- By option, records written via ISAM writes can be record compressed.
- The EDIT verb has been enhanced at the request of customers with international operations. Now the currency symbol can be changed from a dollar sign (\$) to some other character. The role of decimal point and comma can also be interchanged.
- The ability to provide a user translate table to define octal characters greater than 0177. This is useful for

reading output from foreign devices, and is used only for disk.

- Now programs can click on background interrupt, printer interrupt, DATABUS code page fault, and index sector request.
- From ACALL, you can now examine the following DATABUS flags: EQUAL, EOS, OVER, and LESS.

Improved Software

The areas where the software has been improved include file handling, print spooling, display/keyin/print, traps, 1800 with 9320, ROLLOUT, SLAVES, and UPS.

Ordering

DS6 1.2 can be ordered as an upgrade to Model Code

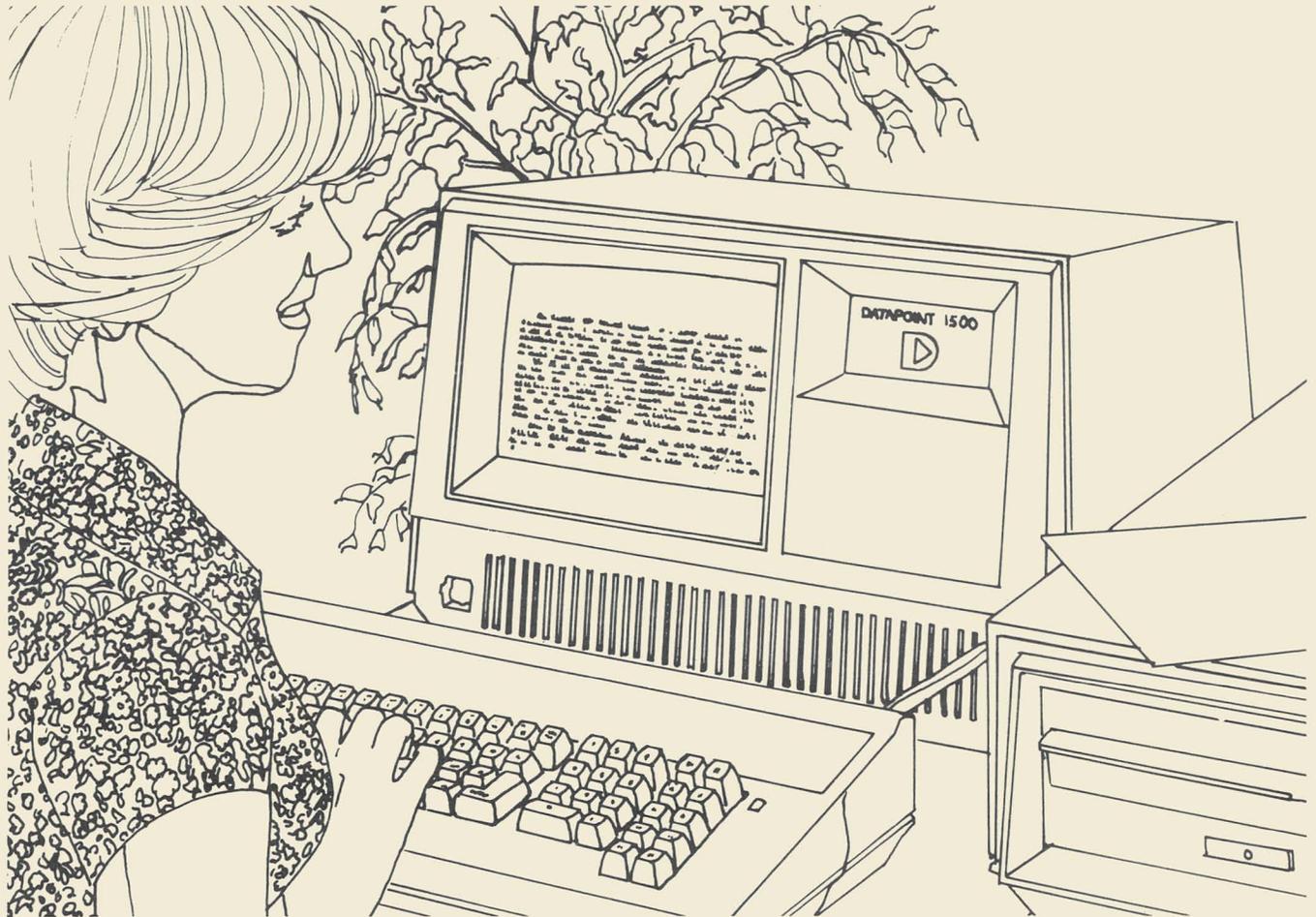
9828. Customers currently paying monthly software maintenance on DS6 are eligible to receive DS6 1.2 for a media charge only. Program media available are cassettes (4), SSSD diskettes (2), or DSDD diskettes (1). No user's guide changes were made.

Some Additional Information

Because of the number of changes made to DS6, you must reconfigure to run DS6 1.2. The companion release, DBCMPLUS 3.2, is available on cassettes (2), SSSD diskettes (1), or DSDD diskettes (1).

AIM users must recompile all programs using AIM. The syntax has not changed, but some of the internal code has. AIM support requires DBCMPLUS 3.2, AIMDEX 2.6.2, AIMDEX 2.7, and DS6 1.2.

UPS support with DS6 1.2 requires UPS 2.1. Synchronous SLAVE requires DSSLAVE 1.2.

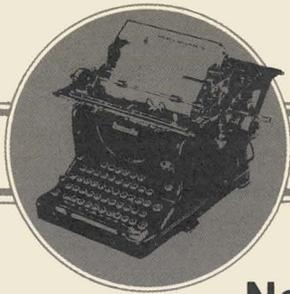


Expanded Communications Capabilities for 1500

New communication software (EMGRS15) has been released for the 1500 processor to provide emulation of Honeywell's G-115 remote terminal. EMGRS15 operates in a half-duplex mode over dial or leased lines at speeds of 1200 to 4800 bits per second (bps).

The execution of this program requires at least 32K random access memory (RAM) and executes as the main program under DOS.H. For those who have concurrent job processing requirements, the 1500 processor with 64K of RAM will support this capability.

For further information, contact your local Datapoint representative.



OFFICE APPLICATIONS

New Products Announced in New York

On November 16, Datapoint announced three new products for Attached Resource Computer® (ARC™) network users during a press conference in New York.

The new products are the 9680 Color Business Graphics system, which allows a user to create images on a color monitor and reproduce them on paper, color slides, prints, and transparencies; the 9660 Laser Printer, an intelligent electro-photographic non-impact printer with high throughput and high printing quality; and the 9498 Facsimile Communications Interface, which allows Datapoint processors to transmit and receive images through facsimile devices.

Color Business Graphics



The 9680 Color Business Graphics system allows ARC users to dynamically create, display, print and photograph color graphic images. It incorporates a high resolution 512 x 482 pixel display monitor, a graphic input tablet with stylus, and a system controller. Optional peripherals include a color dot matrix printer and two models of film recorders capable of exposing film for producing 35mm slides or prints, 8x10 color prints and 8x10 color transparencies.

Graphics information can be input to the 9680 system via either the tablet and stylus or the system processor keyboard. Additionally, since graphic information is

stored in standard Datapoint disk file format, it can be transmitted and handled like any other ARC file.

Software capabilities have been designed into the 9680 Color Business Graphics system, making it easy to use by non-technical individuals and requiring no user programming.

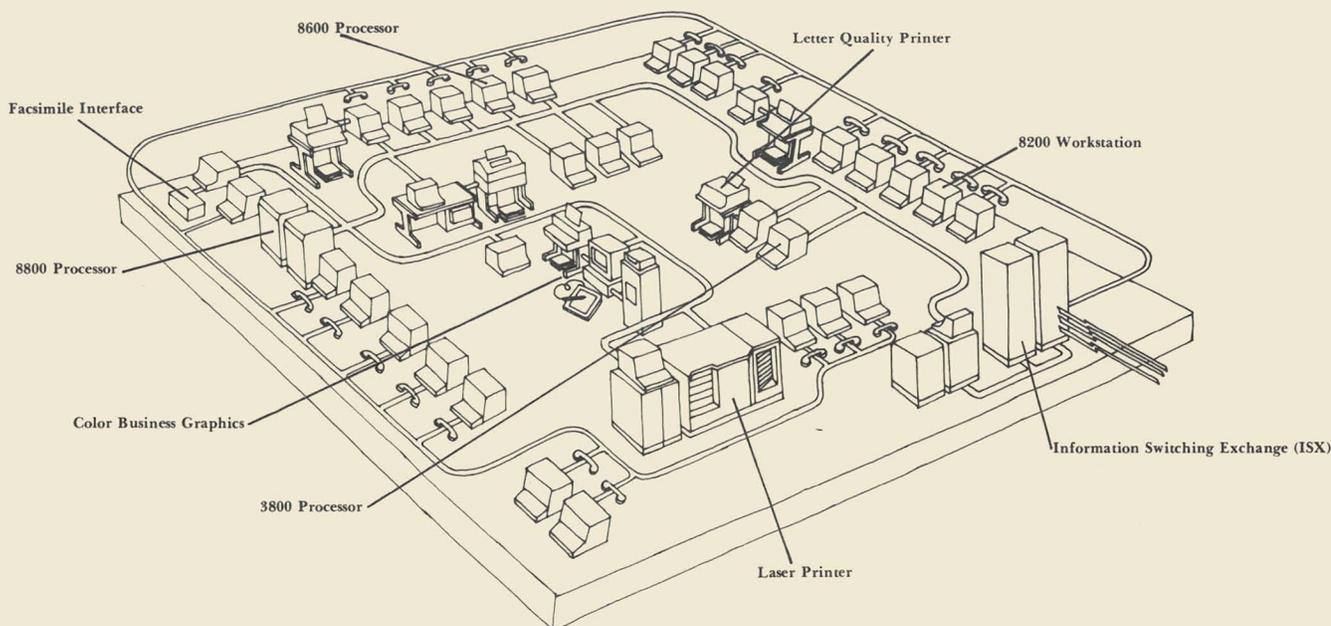
9660 Laser Printer



With a 9600 Laser Printer, a user anywhere in an ARC network can initiate the printing of documents with specific selections of type fonts and page orientations. The user can also specify the use of any combination of the five types of paper that can be simultaneously loaded into the Laser Printer's input drawers, with routing to specific output bins.

The print images produced by the 9660 are formed from a dense matrix of tiny dots, or "pixels." Pixels are arrayed 480 to the inch horizontally and 240 per inch vertically. The actual printed images are formed by converting that data stream into a modulated laser beam that is swept across a photo-sensitive image transfer drum. Printing is on a wide range of papers or transparency material.

The 9660 can print on either one or both sides of the paper. Printing is performed at a rate of 20 surfaces per minute, or about 1300 lines per minute. The 9660 can



The New Integrated Electronic Office

print not only in the standard "portrait" mode, but also in "landscape" mode, where the printing is parallel to the paper's longer dimension.

The 9660 includes five input paper drawers so that different paper types, sizes, colors, and letterheads can be available for immediate use. Up to 32 different character sets can be used on any one page.

The standard 9660 has an output module with 10 paper output bins, and up to seven additional output modules may be added. Documents can be directed to a particular bin under software control. Lock boxes are available that fit into the output bins.

Facsimile Interface



The 9498 Facsimile Communications Interface is a microprocessor-controlled device that can provide the facsimile protocols and format conversions necessary for direct communication with both analog and digital facsimile devices conforming to US1 and CCITT Groups I (analog), II (analog), and III

(digital). It communicates with processors via an RS232C interface.

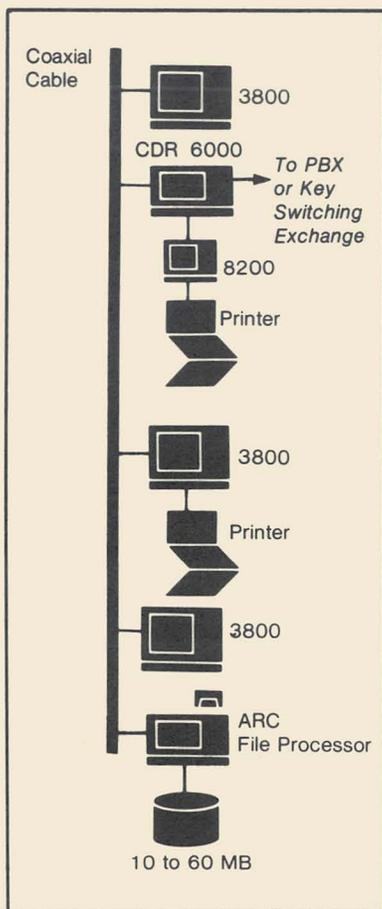
Software in the processor allows graphic images from either a remote or local facsimile device to be stored on and recovered from disk files, providing a sophisticated computer-controlled store-and-forward capability.

The Facsimile Communications Interface also provides the capability of unattended reception, allowing reception of facsimile transmission from multiple remote facsimile devices without operator intervention. The images received are stored automatically on disk for later hard-copy reproduction.

The facsimile system may be further enhanced by adding Datapoint's Electronic Message System (EMS™), and appropriate applications software, to provide the capability of remote electronic mail transmission.

All three products can be ordered immediately. For further information concerning any of these products, please contact your local Datapoint representative.

CDR/CASH Systems Revisited



The CDR/CASH System

Special features of DATASHARE such as MULTILINK™ and phantom ports are integral to the new call reporting products in Datapoint's communications management product line. Both the Call Detail Recorder (CDR) and the Call Accounting System for Hotels (CASH) are written in Datapoint's unique language, and they form a hybrid combination of the traditionally separate categories of Communications Management and Data Processing products.

Call Detail Recording

Both CASH and CDR are designed to record the call detail of an intelligent key system, PBX, or passive line monitor. The systems then assign costs to each call by accessing a diskette- or disk-resident database. Finally, reports may be executed to detail and summarize the call information, in formats suitable to the particular application of each product. With CASH, for example, the reports are designed for presenting a hotel guest with a detailed record of the calls made during his stay and the cost of each call made. With CDR, the reports allow the communications manager to allocate the actual costs of telephone services to the users, be they individuals or corporate entities; the manager has traffic analysis available.

The process described in the paragraph above is dependent upon the stream of call records from the telephone system. This asynchronous bit stream is passed over a standard RS232 interface to the communications adaptor of the CASH or CDR processor (the products are available on both the 1800 and 6600 series processors). Through DATASHARE's MULTILINK line driver facility, the data stream is received into the system.

While the format of these records may vary from one telephone device to another, the format that CASH or CDR expects from a particular PBX may be easily entered into the system's parameter file. It is a phantom port within the DATASHARE system that performs the tasks of reformatting these records and writing them to a call history file, which serves as the basis for reporting.

Performs Many Tasks at Once

At least one actual port (console on the 1800 or an 8200 terminal on the 6600) is required for database entry and

Continued . . .

report execution. The ability under DATASHARE of allowing multiple ports to execute commands simultaneously becomes particularly important in the CASH system, where hotel administrative requirements can call for a number of terminals (guest check-in by room clerks, guest billing by cashiers, and administrative reports) all of which may be executing at any time during the day, without the necessity of rolling out to the Disk Operating System, and without loss of call detail.

Working With the System

In addition to CASH's built-in reporting features, the standard facilities of DATASHARE also allow it to feed the basic element of its reports (the costed call record) into another data processing system for combination with other reporting elements for comprehensive reporting. For example, some hotel front-office accounting systems are directly connected to the telephone company's automated time-and-charges service (HOBIC), and the systems post the calls directly to the guest ledger without manual intervention. CASH can also send such a costed

call record (in the identical format to that of the HOBIC system) for automatic posting, with one significant difference: the cost contained in the CASH call record may be the retail rate at which the hotel wishes to price the call (under the FCC's new resale rulings) even though the actual cost to the hotel may be a lesser amount (due to DDD or alternate facilities routing).

The CDR, the product for general commercial application, also further benefits from the characteristics of DATASHARE. Within the CDR DATASHARE system, other DATABUS programs are able to execute simultaneously. This means that, within certain constraints and with adequate memory provision, the manager has at his disposal a standard business processing system able to serve other applications and not just a limited-function call reporting device.

One specific and ready-made application that may be incorporated along with the CDR is the Telephone Directory Package of Datapoint's Communications Management Information System, also a product based upon DATASHARE.



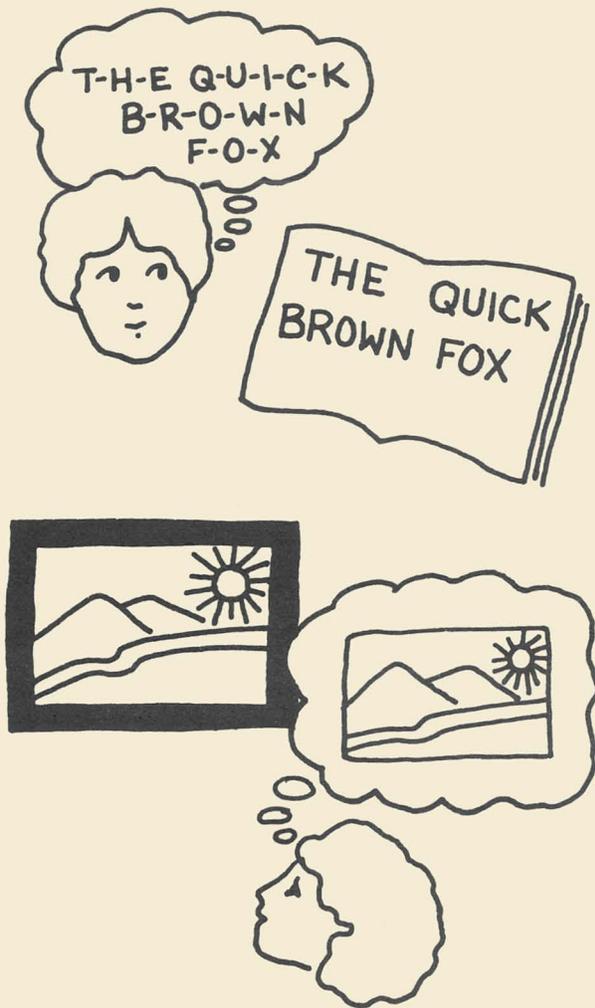
The New Member of the Integrated Electronic Office — Color Business Graphics

We at Datapoint have committed our resources to provide you with the Integrated Electronic Office. The concept of providing total office integration, and the consequent improvement in office productivity, requires an understanding of what an office is and what functions are performed there. Basic office activities, regardless of the specific industry, are telephone calls, meetings, preparing memos and letters, copying and routing, filing and retrieval, business data processing, and other information flowing functions. In other words, an office is an information pathway. To provide the most effective and efficient flow, we must use as many channels of communication as possible and maintain sufficient control for cross channel communications.

Four Types of Information

There are four basic information formats, or channels: Statistics, Text, Audio, and Visual. Datapoint has a full breadth of products to provide all formats. And more importantly, with the Attached Resource Computer (ARC) network, orderly cross channel communications are easily attained. Although each communications channel is important, each is superior for specific functions. This article provides an insight into the Color Business Graphics System, a powerful person-to-person information tool for visual communications.

Data, written words, and speech are all serial forms of communications, and we receive them as single bits of data. Our minds must collate these "bits" to grasp the true concept of the information we receive. This is a slow process. Typically, we can write at about 100 words a minute, read at 350 to 500 words a minute, and speak at about 250 words a minute. We can comprehend visual aids at over 40,000 comparable words a minute, since pictures travel directly into the conceptual part of the brain. By using color for emphasis, we can retain pictures much faster and with infinitely better detail than by trying to comprehend the written word.



We read words one letter at a time, but we can grasp a picture in an instant.

Business Graphics for Displays

By using business graphics in displays, we can avoid poring through reams of statistical reports we receive periodically. Compacting the data into understandable, clear charts allows you to present information that most everyone will remember. In this way, all levels of management can review operations regularly with the information presented in simple graphs instead of spending time dissecting pages of reports.

Until recently, good business graphics were very expensive and time consuming, involving either a staffed graphics department or an interface to an outside vendor. With computer-generated business graphics, we have the tool to generate visuals in a economical and timely manner.

Datapoint Business Graphics

The Datapoint ARC Color Business Graphics System (CBG) is the newest addition to the Integrated Electronic Office, providing the fully interactive generation, production, and display of powerful graphics and presentation visuals. As a system that is part of an ARC dispersed processing network, the CBG system lets you generate graphs directly from any data file on the ARC and store all graphs and pictures in standard ARC files. Thus, images can be manipulated as text/data files for retrieval or transmission to any other CBG system on the ARC system, either directly or via EMS.

Until recently, producing business graphics was costly and time consuming. The ARC CBG system is provided as a "turnkey" system that requires no user programming and minimal operator training. Using English-like commands and fully explained screen prompts, you can easily generate presentations. The "key operator," or more highly trained person, can provide the next level of refinement to the finished pictures.

You can generate charts interactively by inserting information into the displayed "menu." Once you've developed a chart, you can store it indefinitely. You can even update the existing data to produce a new visual aid or update the same chart with different information. Since different types of charts are required for business displays, the CBG system offers bar charts, pie charts, word charts, and line graphs for variety. Each one has its own unique application to emphasize time and/or quantity comparisons.

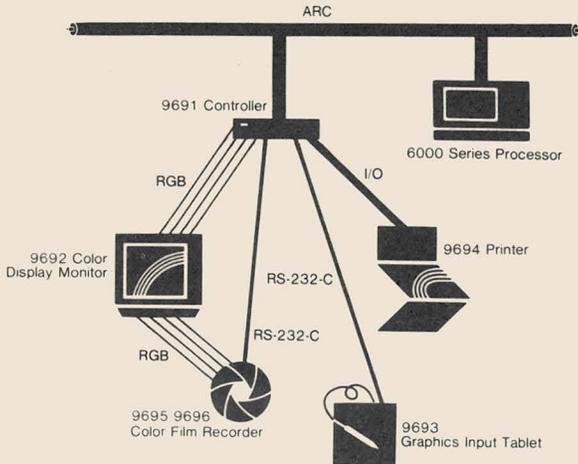
Pictures are as easy to draw as the charts. With the CBG system, you get a "light key" menu from which to choose those of the specific sixteen colors you want to use in the picture. You can also determine the type of elements you want to draw, such as straight lines, rectangles, circles, curves, and free form sketching or tracing, and the type style you want to use, choosing from over twenty fonts. In addition, you can move, copy, enlarge, reduce, rotate, and erase any of the elements of a picture. Text is entered into a picture using an ARC applications processor. Other "help" features include magnifying selected areas of the picture so you can place objects exactly where you want them and have full control of color for each element in the picture. Once you've created a picture, it can be stored, copied, edited, sent, deleted, or printed.

More Flexibility

Additional features include the ability to rearrange pictures or charts in any sequence, including repeating

Continued . . .

images and playing back an arranged "script" with selectable delays between pictures, to provide animation. Optional output packages, such as the color printer or the film recorder, can provide the hard copies you require. The color printer provides eight-color representations of the screen images, and the film recorder provides either 8x10 prints or transparencies, and/or 35mm exposures, depending on the model you choose.



Typical Color Business Graphics System

Many corporate departments will benefit from the availability of this communications tool. CBG offers the user a fast, easy-to-use system that is totally interactive and requires no programming or specialized operator skills.

Typical departmental uses include:

Business Planning

- Forecasts
- Business proposals
- Trend analysis

Sales Management

- Monthly sales trends
- Customer presentations

Financial

- Financial trends
- Return-on-investment
- Break-even analysis
- Monthly and quarterly reviews

Marketing

- Market share
- Forecasts
- Pricing and volume analysis
- Market segmentation
- Demographic studies

Manufacturing

- Inventory tracking
- Shipping schedules
- Materials requirements planning reports

Corporate Communications

- Brochures
- Sales promotional materials
- Mailings to customers
- Corporate information to personnel
- Presentations

Training

- Course preparation material
- Course presentations

For further information concerning the Color Business Graphics System, please contact your local Datapoint representative.

Corrections for IEOS Supervisor's Users Guide

We've been told that there is misleading information in the *IEOS Supervisor's Users Guide* (Document No. 50547) concerning naming documents from one sub-directory to another, with ultimate distribution in another library.

On page V-1 there is a reference at the bottom of the page to OUTPUT the document that is to be named to system. If you look on page V-2, paragraph 4, it explains the procedure for adding this document into another library.

This procedure is incorrect! If you want to transfer an IEOS-created document to another library, through DOS, the COPY command must be used. The OUTPUT command does not take any of the IEOS formatting along with it. It strips off all primary and embedded secondary formatting. If you try to copy an OUTPUTed document into a library, it will ask if you want to convert it. This will put a new line command for every line of text, as if it were reformatting a DOS-created file.

If you want to move information from one library to another, via DOS, make sure you use COPY to move from IEOS to DOS instead of OUTPUT, so the IEOS formatting is preserved.

The best way to move documents from one library to another, if the libraries are in different subdirectories, is to go to the UTILITY menu and MOUNT the other's volume, and then go back and COPY that document from one library to the other, and then DISMOUNT their volume.



OFFICE COMMUNICATIONS

New Features on EMS 1.3

With the new release of the EMS Network Controller version 1.3.1, several major feature enhancements have been added. Among them are:

- Telex support in the U.S.
- TWX support
- Teletype* support
- Retrieval of old messages for retransmission
- More comprehensive accounting facilities

This software is compatible with IEOS 1.4, recently released on the 1800, 3800, and 1500 processors.

Communications with Telex, TWX, and TTY terminals open up several new areas for Datapoint customers. Almost all financial institutions use Telex in daily operations, like transferring funds. Any terminal that functions like a Teletype could be used with the EMS Network Controller. For example, portable terminals

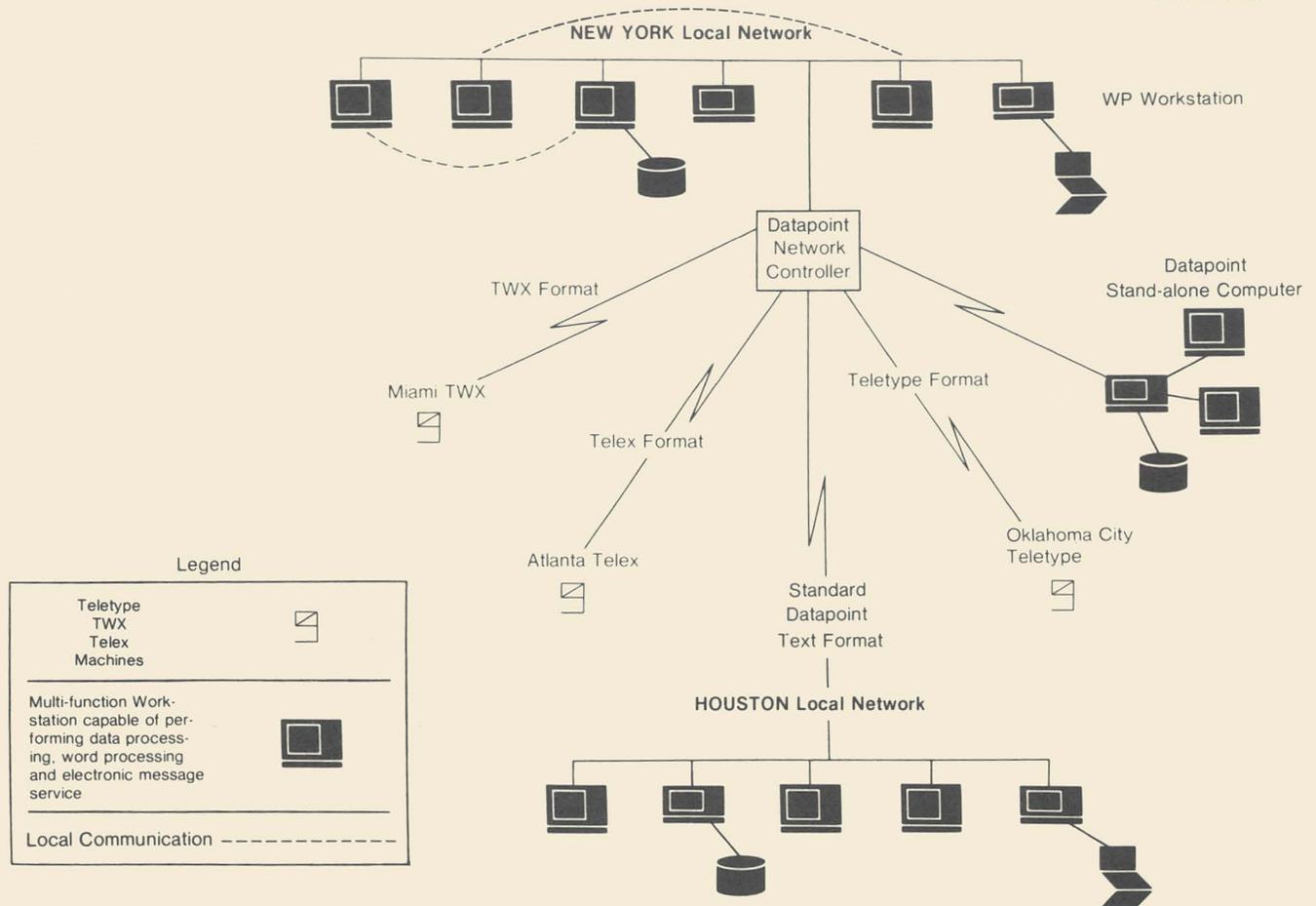
might be used to set up a mail network for salespeople who are on the move. They could call in to send and receive messages from anywhere.

The Network Controller or the remote workstation can originate the call. The remote can either auto-dial or dial manually. The Network Controller will always auto-dial. If the Network Controller's parameters have been set to NO POLL, it will wait for the remote to call in for messages.

The Network Controller is able to send and receive any "answerback" information required by a remote terminal. Answerback is a terminal identification code that is hardwired in some terminals. This code is sent at the beginning and end of messages to insure that you are talking to the machine you want.

*Teletype is a registered trademark of Teletype Corporation.

Continued . . .



Using the EMS 1.3 Network Controller

Teletype Support

The supported set of teletype devices consists of:
Automatic Send/Receive (ASR)
Keyboard Send/Receive (KSR)
Send Only (SO) or Receive Only (RO)
configurations of the Teletype 33, 35, 43

These devices prepare documents for transmission by keyboarding the route and text information required for the messages. A tape is then placed in the teletype's transmitter to await transmission to the Network Controller. Messages are delivered by being "printed" on the teletype's hard-copy device. Either leased or switched phone lines may be used. The Network Controller communicates through a 9462 Communications Adapter.

Since Teletypes are supported, any other product that looks like a Teletype can be accessed within the EMS network. EMS will allow any Datapoint processor that runs UNITERM software to send messages to and receive messages from the Network Controller. Any other asynchronous TTY-compatible terminal may also join in the Electronic Message System network.

TWX Support

The physical connection for TWX is the same as for the Teletype, using a 9462 Communications Adapter for Network Controller communications, over switched or leased phone lines. Either the TWX or the Network Controller can initiate the transmission.

Telex Support

The Network Controller connects through a 9400 Communications Adapter and a Telex Line Adapter (TLA) to access the Telex network. The Network Controller can dial or be dialed by any domestic Telex machine throughout the network.

Message Retrieval

The new message retrieval function at the Network Controller enables the system operator to retransmit messages that may have been lost or received in error. This is helpful at sites that occasionally experience paper-out conditions while receiving transmissions. Under the control of the system operator, messages may be retransmitted on the basis of time and date, message number, or mail station.

Accounting Facilities

The Network Controller has comprehensive accounting facilities to give an accurate picture of the system's usage. Cost information by message, workstation, communications line, or the whole system is available. Usage information, by mailstation and priority of messages sent, is also available. This data is stored in daily accounting files. Previous day's files can be accessed during normal operations. The current day's information is accessed when the system closes down for daily accounting.

Documentation Available

Several User's Guides and Product Manuals are available on EMS and its components:

EMS Network Controller User's Guide,
Document No. 50520
EMS Product Specification,
Document No. 60944

Message Services User's Guide,
Document No. 50519
EMS Manual, Document No. 60882
EMS Product Manual, Document No. 50474
Network Controller Installation Guide,
Document No. 61046.

For further information concerning the new Network Controller and its capabilities, please contact your local Datapoint representative.



Message Service is now available on 1500/1550 Standalone Processors

Datapoint now offers IEOS/MS 1.4.1 on 1500/1550 products. This new software version gives you the added convenience of message services incorporated with IEOS 1.4.1 capabilities. Now you can participate in your existing Electronic Message network as a remote site, or present this new enhancement as an addition to your current equipment configuration.

Inside the diskette box, you will find a printed installation guide to be used as an aid in installing the system.

The equipment required to run IEOS/MS from a remote site is:

1500/1550 with communication capability, synchronous communication lines with 212A, 201C, 208A, or 208B modems.

The following model codes are needed in ordering:

RELEASE ITEMS:

Model Codes	Descriptions
9825	IEOS/MS
20697	(6) Single Sided, Single Density Diskettes
20809	(5) Single Sided, Dual Density Diskettes
20793	(2) Dual Sided, Dual Density Diskettes

IEOS/MS has been released on 1500/1550 Single Sided, Single Density diskettes for transfer to a 9310 or 9320 10 MB cartridge only.

So, if this release is just what you have been looking for, contact your local Datapoint Sales Representative for more specifics.



Using the KSX, Datapoint's Digital Key System

Salesmen, who conduct so much of their business over the phone, need the best phone system available. At the 30-person Memorex Corporation sales office in Culver City, California, the salespeople found they could get what they needed in the form of a digital office phone system from Datapoint.

Prior to moving into the new offices in Culver City, the Memorex salespeople worked in Los Angeles, where they used a straight keyset phone system, with each phone having 20 buttons. "We were way over-trunked," recalled Pamela Huie, administrative services supervisor. "We had to go to 18 trunk lines so that everybody could talk on every phone. It was necessary because the office was divided into two sections, the computer media group and the computer peripherals group. We had started with eight lines for each group, but if someone called for the computer peripherals people and then wanted to talk with the computer media people, that person had to hang up and call back, even though the two salespeople might be sitting nearly side by side. We went to 18 trunks to avoid that," she said.

In March 1981, the office moved five miles, from Los Angeles to Culver City, and to a Datapoint Key Switching Exchange (KSX™).

The KSX had been introduced to the Memorex corporate telecommunications planner in early 1981 as part of a test marketing program, and the system was installed on March 16, 1981. The KSX was officially announced two weeks later. A Datapoint customer education representative stayed at the office for the first day, to show a training film and to acquaint the office staff with the features of the system.

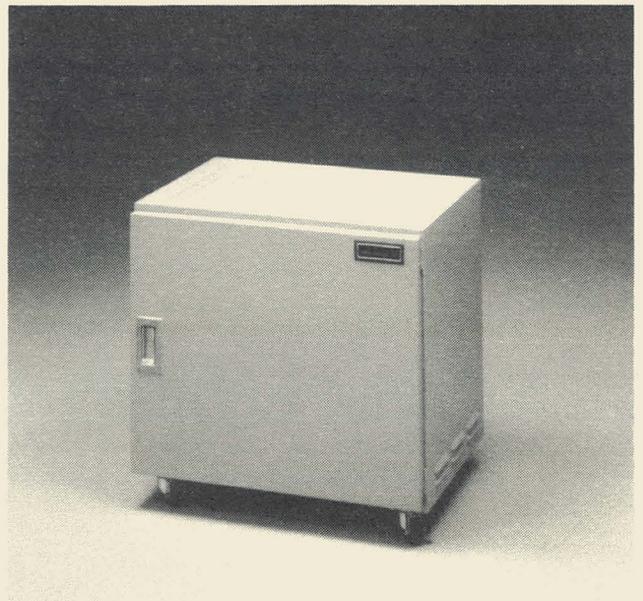
"The salespeople really liked the speed dialing option. You could see them writing out notes of what numbers they had programmed into the phones."

The Hardware

With the Datapoint KSX, the Culver City Memorex office uses 12 trunk lines for the system's 30 phones, a

number Ms. Huie says seems to be about right for the maximum load.

The heart of the KSX system is the Key Service Unit (KSU), a knee-high controller containing the system's computerized switching circuits. The KSU connects the KSX to the public phone system and stores software that determines the details of how the system operates. Datapoint service technicians can access the KSU through the phone lines to change the software as required.



Key Service Unit

A KSX can support as many as 32 phone company trunk lines. Twenty-four of the lines can be two-way, with the last eight being dedicated to outgoing calls. The system can support a total of 128 phones, of which 80 can be Datapoint KEYSET/24™ instruments.

Continued . . .

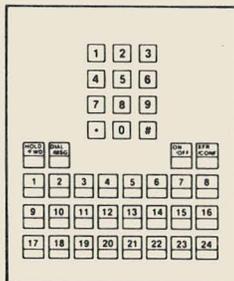


KEYSET/24

In Memorex-Culver City, all 30 phones in the KSX are KEYSET/24 instruments. The KEYSET/24 is the vehicle to access the majority of the features offered by the KSX, such as speed dialing, call transferring, call conferencing, and last number redial. Single-line electronic instruments, that look like ordinary pushbutton phones, are limited to basic functions.

In addition to the 12 standard dialing buttons, each KEYSET/24 includes 24 line keys and four special function keys. To make an outside call, the user lifts the handset, hears the intercom dial tone, and pushes one of the line keys. He then gets the phone company's dial tone.

Each KEYSET/24 has a built-in speaker for handsfree receipt of intercom calls and call announcements, and receipt of system-wide or selective zone paging. Optionally, each KEYSET/24 can be equipped with an external SpeakerBox that provides the additional capability of full-duplex handsfree placement and receipt of intercom and outside calls.



Special Function Keys

The four special function buttons are hold/forward (HOLD/FWD), dial/message (DIAL/MSG), ON/OFF, and transfer/conference (XFR/CONF).



The HOLD/FWD key can be used to place a call on hold by pushing it and hanging up. Calls can be forwarded to another extension by lifting the receiver, pressing the HOLD/FWD key, dialing the number of the new extension, and hanging up. The button can also be used to set up a "do not disturb" situation, by lifting the receiver, pressing the HOLD/FWD key, then pressing the asterisk, and then hanging up. All callers will then get a busy signal.



The DIAL/MSG key is used for the speed dialing feature. Ten numbers can be stored simply by pressing the DIAL/MSG key, dialing the selected code number (0-9), then the desired number, and then pressing the ON/OFF key. A stored number can be used by pushing an outside line button, the DIAL/MSG key, and the code digit for the desired number. If a caller reaches a busy number on an outside call, he can redial the number automatically by staying on the line and pushing the DIAL/MSG button. If the DIAL/MSG button is blinking, it means the system attendant has a message for that extension.



Calls can be transferred by pushing the XFR/CONF button, dialing the new extension number, and hanging up after announcing the transfer.

When on a call to someone outside the KSX system, another extension of the KSX can be connected to make a conference call by pressing the XFR/CONF button, dial-

ing the extension, and pressing the button again after the extension answers. Two outside lines can be connected to form a conference call by dialing the first number, putting it on hold, dialing the second number and putting it on hold, and then pressing the XFR/CONF button.

The Message Center

In most KSX systems, one of the extensions is the message center where the attendant sits. The attendant can see which extensions are in use or access any one of them immediately with KSX's Direct Station Select, a console with 60 buttons.

The message center also illustrates the use of the software parameters that can be programmed into the computer circuits of the KSU. At the Culver City office, the KSU has been programmed so that any call on hold reverts to the message center after 120 seconds.

Software

Software parameters can be programmed into the system through a terminal with a standard RS232 interface, or, in the case of the Culver City office, by calling Datapoint. Ms. Huie would simply call the Datapoint Customer Support Center in San Antonio, over a toll-free number, and the Customer Support technicians would

access the KSU over the phone line to make the necessary changes.

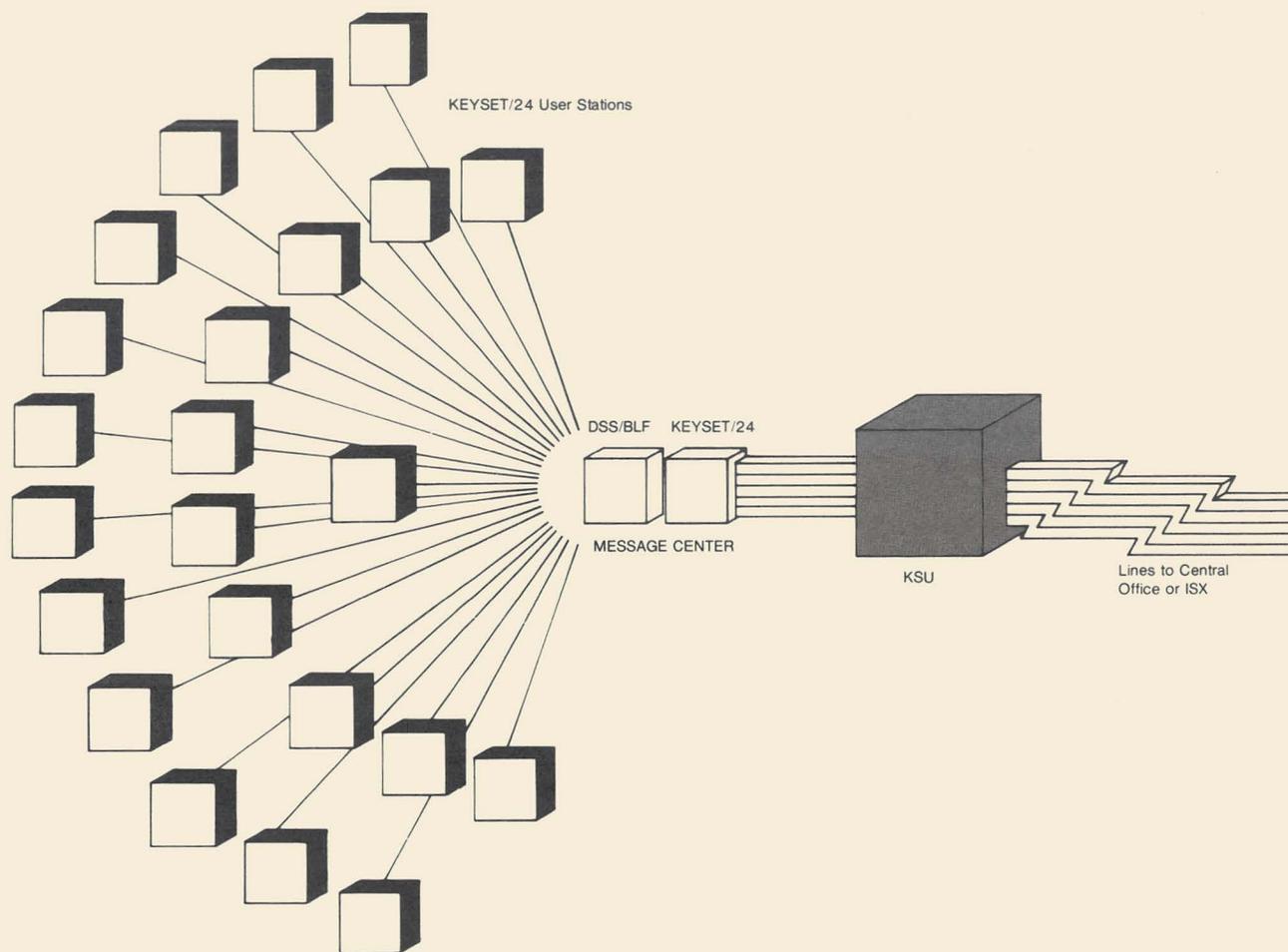
Software parameters can be selected to prevent individual stations from making long distance calls, to allow lines to ring in on selected stations, to restrict use of certain lines by selected stations, and to set up paging zones.

The Results

"What I like best is the automatic redialing feature. If you get a busy number, you just hit the button and you're dialing it again and again," she said. "A lot of the guys really like to use hands-free dialing, they put it in speaker mode to make calls. But I make them switch to using the handset after the call is answered. With 20 salespeople, the office can get pretty noisy," Ms. Huie added.

"But, the very best thing is that when the receptionist is transferring a call, the salesperson doesn't have to pick up the phone. She can talk to that person on the speaker at the extension desired, and the salesperson can push the line number and pick up the call. It's as easy as that," she said.

"Everybody likes the KSX, and it's a definite improvement over what we had," she concluded.



A KSX System

News for Users Groups

As you can see, we've heard from two of you. If you send information concerning your Datapoint Users Group, that information will be printed in the next SOURCE DATA. Let us hear from you — soon!

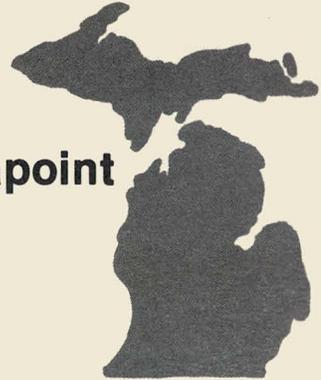


Federal Datapoint Users Form Group

A Federal Datapoint Users Group has been formally established for Federal Datapoint users in the Washington, D.C. and Baltimore, MD metropolitan areas. The users group membership represents over 10 federal agencies and departments. The group holds quarterly meetings. Attendance is free, but advance registration is required. The next quarterly meeting will be held on March 19th at 1:15 p.m. For further information, please write:

Federal Datapoint Users Group
Mail Stop 206
Room 1B411
12201 Sunrise Valley Drive
Reston, VA 22092

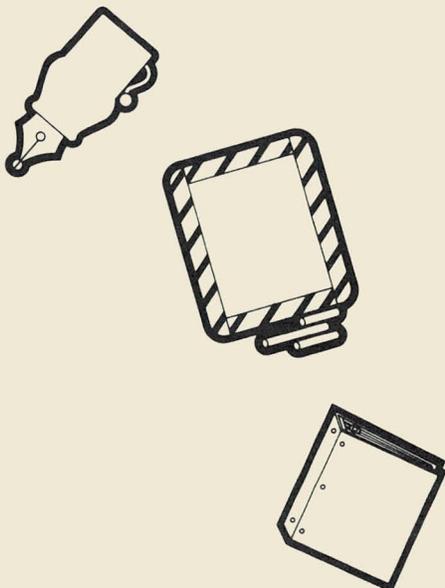
Get in touch if you are a federal Datapoint user in the area!



Michigan Datapoint Users Group

If you're in Michigan, you're in luck. The Michigan Datapoint Users Group, established in 1979, has grown into an active group of over 50 Datapoint users. The group holds quarterly meetings, publishes a newsletter, and maintains a close working relationship with the Michigan branch office. Group president, Thomas Kelly, says, "We are so delighted with our growth and success, that we would like all the Datapoint users in our area to be informed of our existence." Well, now you know.

The next meeting will be held at the Stephenson Club on February 9 at 3:00 in the afternoon. For further information concerning the group, please contact **Mr. Thomas Kelly, President, Michigan Datapoint Users Group 7410 Anthony, Dearborn, MI 48126; (313) 584-7963.**



Customer Education Changes

Effective immediately, registrations for Customer Education classes in New York, Boston, Philadelphia, Arlington, VA, and Atlanta will be taken by Customer Education in San Antonio, at (512) 699-7039. Please call San Antonio for information regarding classes in these areas or to register for any classes.

This is the second step in centralizing all Customer Education registration to the San Antonio offices. If you remember, in October and November, the number for registering for classes in San Mateo, Los Angeles, and Seattle was changed to the San Antonio number. The centralized registration system will be phasing in all facilities within the next few months.

Software Releases

Illustrated below is a Software Release Form. These forms are issued for every new release of a software product. They are sent to Datapoint branch offices in the **Software Operations Newsletter** they receive periodically. **SOURCE DATA** publishes a table of condensed information from releases.

DATAPPOINT COMPUTER SYSTEMS DIVISION
PROGRAM RELEASE FORM

NOTE: LICENSE REQUIRED
 The software item documented on this form is the property of Datapoint Corporation and may be used or transferred only pursuant to the terms of a license agreement between Datapoint and the user.

SYMBOL/VER.REV: DSSLAVE 1.2
DESCRIPTION: DATASHARE Remote Station Interpreter
PURPOSE: A - Corrects problems (bugs)
RELEASE MEDIA: Cassette
 Single-Sided Single Density Diskette
 Single-Sided Double Density Diskette
TOTAL SECTOR SIZE: 240 Sectors
SOFTWARE CANCELLED BY THIS RELEASE: DSSLAVE 1.1
EXECUTION SUPPORT:
 Software: DOS.A/.B 2.4
 DOS.C 2.4.2
 DOS.E/.G 2.6.2
 DOS.D 2.7

Hardware: 1130/1150/1170/1800/3800
Processor: 2200/5000/5500/6000/6600
Minimum Size: 16K
Disk: 9320/935X/936X/937X/938X/939X
Printer: Local/Servo
Other: 9402/9481/ICA
5500/6600 Partition Supervisor Compatible: No

NOTE: CHAIN-CHAINPLS compatible: No
RELEASE
 Previously Released
 1 DMF Cassette
 1 SS/DD Diskette
 1 SS/SD Diskette

RELEASE ITEMS: MODEL CODE
 User's Guide: 50537
 Program Media: 20771
 Program Media: 40439
 Program Media: 20772

DETAILED DESCRIPTION:

DSSLAVE is the remote station interpreter for use with DATASHARE. It is fully 2200 (Asynchronous only), 5500, 6600, 1800, 3800, and ARC compatible. In conjunction with a DATASHARE central station, DSSLAVE will execute programs written in the DATASHARE language, not above DATASHARE language level 3. Installation requires a Datapoint 9402 Asynchronous Communications Adaptor or a Datapoint 9481 Synchronous Communications Adaptor at both the Remote and Central sites or the internal comm adaptor (synchronous) at an 1800/3800 slave site. This DSSLAVE Interpreter uses the newly-revised Asynchronous protocol available in DATASHARE 5 Version 3.3 or DATASHARE 6 Version 1.1 and the new SDLC protocol available in DS5 3.4 and DS6 1.2.

REVISIONS:

1. Added 1800 internal comm adaptor support.
2. Revised SDLC addressing protocol to facilitate satellite comm link connections.
3. Corrected "NAK" problem in sync mode.
4. Corrected end-of-job message.

PROGRAM FILES RELEASED:

DSSLAVE/CMD Object library file
 DSSLAVE/RFM Print file for release form

RELEASED BY: _____
CERTIFIED BY: _____
APPROVED BY: _____

DATE: _____
DATE: _____
DATE: _____

Software Program Releases

<i>Name/Date</i>	<i>Description</i>	<i>Purpose</i>	<i>Model</i>	<i>Media*</i>
AP3270 2.1 Released 11 Nov 81	AP3270 2.1 is the IBM 3277 or 3278 Terminal emulator used in conjunction with AC3271B or ACMLU ARC Communications and Emulation Software.	Corrects problems Adds new features Cancels AP3270 1.1	20781 50599	1 DMF Cassette User's Guide
ARCSYS 1.2 Released 19 Oct 81	Consists of DOS.D 2.7, ARC 1.7 ARCSYS/RFM, ARCSTAT 4.1, ARCOPY 1.3, LINK 2.3, and LIBSYS 2.2	Corrects problems Cancels ARCSYS 1.1	9833 20653 20654 20655 50646 50383 50396 50167 50273 50299	ARCSYS 1.2 10MB disk 25MB disk 60MB disk DOS 2.7 User's Guide ARCSTAT User's Guide ARCOPY User's Guide LINK User's Guide LIBSYS User's Guide ARC User's Guide
CASH I 1.2.1 Released 13 Oct 81	Call Accounting System for Hotels used to retain information concerning incoming calls. Also lists costing information.	Final release Cancels CASH 1.1.2	9840 20651 20652 20654 20655 50631 50654	CASH 1.2.1 7 Single Sided DDD's 2.5MB System Disk 25MB System Disk 60MB System Disk User's Guide CASH 1.2 User's Guide Addendum
CDR I 1.1.1 Released 20 Oct 81	Call Detail Recorder used as a call costing and management system that records details of calls placed through a PBX, calculates their costs, and produces reliable reports for management.	Final release	9839 20651 20652 20653 20654 20655 50630	CDR I 1.1.1 7 DDD's 2.5MB System Disk 10MB System Disk 25MB System Disk 60MB System Disk User's Guide
DBCMP15 3.1 Released 4 Aug 81	DATABUS compiler that compiles programs written in a 1500 subset of the DATABUS language. Compiled programs may be executed with one of the 1500 DATABUS or DATASHARE interpreters.	Adds new features Corrects problems Cancels DBCMP15 2.4	20793 20809 20697 40273 50302	DS/DD Diskette SS/DD Diskette SS/SD Diskette DBCMP15 3.1 User's Guide
DCTAPE 2.2 Released 26 Oct 81	DCTAPE supplies two programs, TIN for input and TOUT for output, allowing the user to place information on tape from disk.	Corrects problems Cancels DCTAPE 2.1	20419 20420 40344 50293	2 DMF Cassettes 1 Diskette DDD User's Guide
DS1500 1.1 Released 7 Oct 81	DS1500 is a high-level, multiuser interactive program that interprets the DATABUS language, operating on the 1500/1550 series processors.	New software Cancels DS41500 1.1	20967 20727 20793 20809 50482	1 SS/SD Diskette 1 DS1500 1.1 1 DD/DS Diskette 1 SS/DD Diskette User's Guide

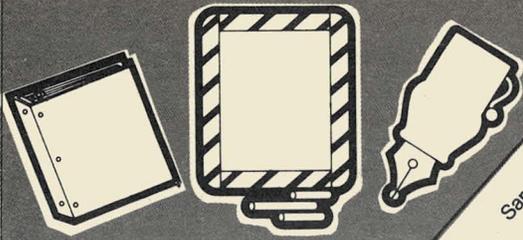
*Media Charge — \$15.00 for one cassette, diskette, or double density diskette, \$125 for 2.5MB disk, \$180 for 10MB disk, \$385 for 25MB disk, \$505 for 60MB disk.

<i>Name/Date</i>	<i>Description</i>	<i>Purpose</i>	<i>Model</i>	<i>Media*</i>
DS3270 2.1 Released 11 Nov 81	DS3270 is the 3270 emulation DATABUS program with ACALL for DATASHARE 5 and DATASHARE 6.	Corrects problems Adds new features Cancels DS3270 1.1, ACAL3270 1.1	20784 50602	1 DMF Cassette User's Guide
DSSLAVE 1.2 Released 5 Nov 81	DSSLAVE is the remote station interpreter for use with DATASHARE. It is compatible with Async 2200, 5500, 6600, 1800, 3800, and ARC.	Corrects problems Cancels DSSLAVE 1.1	20771 20772 40439 50537	1 DMF Cassette 1 SS/SD Diskette 1 SS/DD Diskette User's Guide
IEOS/WP 1.4.1 Released 12 Nov 81	IEOS/WP is the IEOS Word Processor for the 1500.	Final release Cancels IEOS/WP 1.3.1	9822 20697 20793 20809 50502 50547	IEOS/WP (1500) 1.4.1 5 SS/SD Diskettes 2 DS/DD Diskettes 4 SS/DD Diskettes User's Guide Supervisor's Guide
LINK 2.4 Released 11 Nov 81	LINK 2.4 is a companion program to SNAP/3 to link relocatable program modules into program segments.	Corrects problems Cancels LINK 2.3	20293 20366 40308 50167	1 DMF Cassette 1 SS/SD Diskette 1 SS/DD Diskette User's Guide
MINI-ACD I Released 6 Nov 81	MINI-ACD is a compact automatic call distribution telephone switching system.	Final release	20823 80487 50632	Operating System Data Cartridge Tapes User's Guide
MLTC3500 3.3 Released 5 Nov 81	MLTC3500 is a MULTILINK line handler that supports the Burroughs standard-poll/select line protocol.	Corrects problems Cancels MLTC3500 3.2	20400 20402 40432 40470 50281	1 DMF Cassette 1 SS/SD Diskette 1 SS/DD Diskette 1 DS/DD Diskette User's Guide

*Media Charge — \$15.00 for one cassette, diskette, or double density diskette, \$125 for 2.5MB disk, \$180 for 10MB disk, \$385 for 25MB disk, \$505 for 60MB disk.

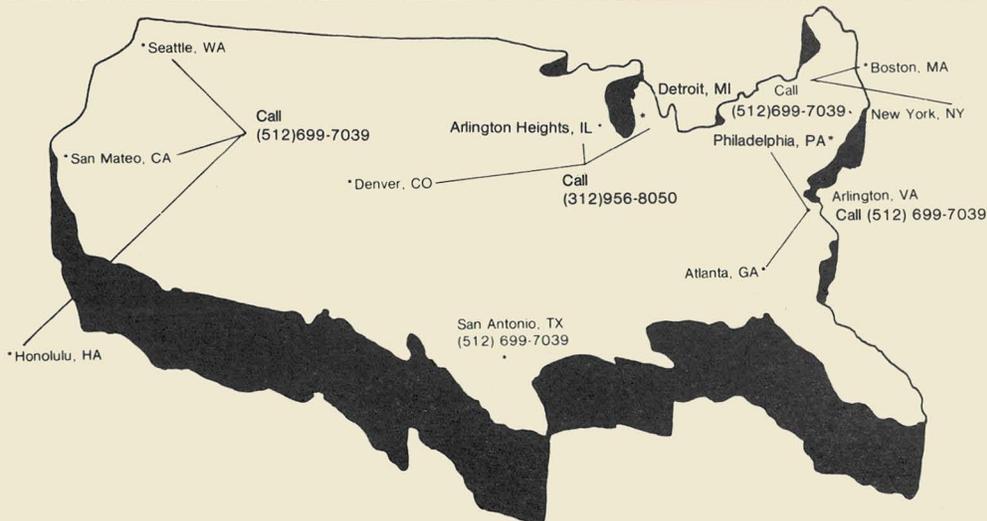
Customer Education Schedule for January & February

Below is the schedule for customer education during the next couple of months. *The Customer Education Course Catalog*, Document No. 60269, contains course descriptions, prerequisites, education center information and cost. Copies are available at your local Datapoint office. Enrollment for courses is handled by the regional education centers as indicated on the accompanying map. General questions about courses may be directed to the San Antonio Education Center.



San Antonio
Seattle
San Mateo
Detroit
Denver
Arlington Heights
Philadelphia
Atlanta
Arlington
Boston
New York

Course	Location									
	Starting Dates									
Introduction to Datapoint Programming	1/11	1/25	1/4 1/25							1/25
Disk Concepts and Operations	1/4 1/18 1/25		1/18			1/18				1/11
Disk Operating System	1/25									1/18
Resource Management System (RMS)	1/4 1/18 1/25					1/4				
DATASHARE	1/18 1/25		1/11	1/11		1/18		1/25	1/25	1/4 1/4
Advanced DATASHARE	1/11					1/4				
Attached Resource Computer (ARC)	1/11					2/1				
Word Processing Concepts and Operation	1/18 1/25		1/4 1/25			1/25			1/18	1/4 1/25
Electronic Message System (EMS)	1/11									
Basic LDCS™	1/25									
Advanced LDCS	1/11									
Automatic Call Distributor (ACD)										



SOURCE DATA Advertising

The advertising listed below is presented without verification or review of any kind by Datapoint Corporation. Datapoint Corporation makes no representation concerning the content of these advertisements or the quality of any product, software, or service offered. Datapoint Corporation reserves the right to reject any advertisement at its sole discretion.

1800 SYSTEM — 120K, 10MB disk (9301), two diskette drives 2MB total, 9462 MPCA, 9022 aux. power, \$20,000
ROMAC & Associates, Mr. W. Irish
 Rochester, New York 716-232-4610



FOX & FOX COMPUTER SERVICES

FOX & FOX COMPUTER SERVICES wishes to announce the availability of S-CHAIN. If you have a DOS function to perform repetitively on a group of files (such as list, copy, sapp, compile), this Databus utility will instantly create a chain, and upon inspection and approval of the operator, execute it.

Price: \$35.00

Write Fox & Fox, P.O. Box 9193, Berkeley, California 94709. Phone (415) 548-0880.

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Parties interested in participating in this new program, call or write:
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 (312) 577-9494

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New DOS Utilities — Speed up your disk maintenance with XCAT, BLOCKKILL, XLIST, XMOUNT, HELP. These expanded utilities cross subdirectories and allow wildcard characters providing for faster and easier disk maintenance. For 30 day trial period, send check for \$75 to **SOFTWARE SERVICES INC.** of ARLINGTON, 3513 N. Powhatan St., Arlington, VA 22213. (703) 532-5679



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Proven Accountant II Software — Nationwide References



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 214-984-0639

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