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PUB-429

For Reference

Not to be taken from this room

Volume 25, Number 5
May 1988

LBL
COMPUTING
NEWSLETTER

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NAMES & NUMBERS TO KNOW

From on-site, dial <xxxx> From off-site, dial (415) 486-<xxxx> From FTS line, dial 451-<xxxx>

INFORMATION & COMPUTING SCIENCES DIVISION

Acting Head: Sandy Merola (AXMerola)7440 50B - 2232C

COMPUTING AND COMMUNICATIONS RESOURCES

Head: Ken Wiley (KGWiley)7083 50B - 2258E

Office of Computing Resources:

Dave Stevens (DFStevens)7344 50B - 2258F

LBLnet Manager: Sig Rogers (SGRogers)6713 50B - 2258G

Telephone Services: Sam Gibson (PSGibson) 4234 80A - 103

ADVANCED DEVELOPMENT PROJECTS

Head: Dennis Hall (DEHall)6053 50B - 3238

WORKSTATION GROUP

Group Leader: Richard LaPierre (RLLaPierre) ...4692 50B - 2245

Software Evaluation & Acquisition6858 50B - 2231

COMPUTING SERVICES

Head: Marv Atchley (FMArchley)5455 50F - 104

Asst. Head: Serge Polevitzky (SIPolevitzky) ...4389 50F - 142

Central Office5871,2 50F - 106

VMS SYSTEM

Eric Beals (ERBeals)5351 50F - 143

System Manager (GPJohnson)6211 50B - 1225

UNIX SYSTEM

Dave Cleveland (DHCleveland)5336 50F - 115

System Manager (RJCochran)5565 50F - 127

DISTRIBUTED PRINTING

Bob Rendler (RERendler)5629 50F - 119

System Manager (RJCochran)5565 50F - 127

USER RESOURCES

Jerry Borges (JTBorges)5568 50F - 144

Accounting7008 50B - 1232A

HELPDESK5981 50B - 1272

Math Libraries4749 50F - 114

Library/ Document Sales4242 50B - 1232B

Opening a New Account (PSBean)7008 50B - 1232A

UNIX and Cluster

Software Evaluation & Acquisition5568 50F - 144

COMPUTING FACILITIES

Connecting a Remote Terminal (ACHart) ...7444 50B - 2249A

Graphics6945 50F - 126

Network Coordinator (WDJaquith)4388 50F - 109

COMPUTING FACILITIES (Continued)

Operations Area6211 50B - 1215

Develcon Problems & Terminal Repair

(PGMurray)5354 50B - 2259

COMPUTING APPLICATIONS

Applications Group

Head: Jerry Borges (JTBorges)5568 50F - 144

CENTRAL ELECTRONIC MAIL FACILITY

FIRST INITIAL-MIDDLE INITIAL-LAST NAME is the standard recipient format in Lab-wide mailing address.

Examples: VMS: lbl::JASmith

UNIX: JASmith@lbl.gov

Software Tools: JASmith@lbl.gov

DEVELCON

DEVELCON Access Names

[VAX 8650's (GENERIC)CSA]

VAX 8650 (VMS)CSA1

VAX 8650 (VMS)CSA2

VAX 8650 (VMS)CSA3

VAX 8650 (VMS)CSA4

VAX 8650 (VMS)CSA5

SUN-3 / 280 (UNIX1)UX1

SUN-3 / 180 (UNIX3)UX3

SUN-3 / 180 (ISD)ISD

Dial-up Access Numbers

All Machines - 300 BPS486-4959

All Machines - 1200 BPS486-4979

All Machines - 2400 BPS486-4969

Local TYMNET Access Numbers for DEVELCON

	1200 bps	2400 bps
Oakland	430-2900	633-1896
Walnut Creek/Concord	935-0370	935-1507
San Francisco	974-1300	543-0691
Santa Clara	408-980-8100	986-0646
Palo Alto	415-366-1092	361-8701
Vallejo	707-644-1192	
Antioch	754-8222	
Fremont	490-7366	
Pleasanton	462-2101	

MFE Consulting Number is422-1544

Newsletter Closing Date is Monday, May 16, 1988

Address all communications for the Newsletter to login nooz@ux1.lbl.gov.

Editor: Maggie Morley

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SCHEDULES FOR COMPUTER CLASSES

IN THE TRAINING ROOM, BLDG. 50B, RM. 1237

or

IN THE BUILDING 50F CONFERENCE ROOM

Jerry Borges

The following computer classes are to be offered by Computing Services. Most of these are free. There is a charge for those classes with the figure (¥) appended. (See Pg. 11 of this Newsletter).

To enroll, obtain your supervisor's approval and then contact Pat Bean (x7008). If you have questions about what's being offered, or suggestions for other computer-oriented topics, contact Jerry Borges (x5568).

DATE	TIME	DESCRIPTION	INSTRUCTOR
May 19	10-11 AM	Electronic Mail: UNIX and msg	William Jaquith
May 19	11 AM-NOON	Electronic Mail: VMS	William Jaquith
May 26 & 27	9 AM-4 PM	FOCUS: Basic Report Preparation (¥)	Information Builders
June 15 & 17	1-3 PM	Introduction to VAX/VMS	Marty Gelbaum
August 9, 11, 16, 18	9:30 AM-NOON	Beginning T _E X	Jerry Borges
Sept. 19 through 23	9 AM-5 PM	Intermediate T _E X (¥)	T _E X Users' Group

IN THE MAC TRAINING ROOM, BLDG. 50B, RM. 1229

Carole Casaretto

The following computer classes will be offered by the Workstation Group. There is no charge for these classes. To enroll, obtain your supervisor's approval and then contact Carole Casaretto, (x6858). Those classes with asterisks (*) appended are already full.

Call now to sign up for classes later in the year. For more information, see THE WORKSTATION SCENE in this Newsletter. If you have any questions regarding these classes or suggestions for other computer-oriented topics, contact Richard LaPierre (x4692).

DATE	TIME	DESCRIPTION	INSTRUCTORS
May 10, 12, 17, 19 May 10, 13, 17, 19	1:00-2:30 PM 3:00-4:30 PM	Beginning MS WORD 3.01*	Karla Savage, A. Soulsburg Claudia Madison, Jean Wolslegel
May 18	10:00 - 11:00 AM	Introduction to HyperCard	Bruce Burkhardt
May 18	1:00 - 3:00 PM	Beginning Excel Charts	Nancy Travis, Carole Casaretto
May 23, 25, 27	1:00 - 3:00 PM	Beginning Excel Spreadsheet*	Nancy Travis, Carole Casaretto
May 23, 25	10:00 - 11:30 AM	HyperCard-- Creating Cards and Stacks	Bruce Burkhardt
June 14, 16, 21, 23	1:00-2:30 PM 3:00-4:30 PM	Beginning MS WORD 3.01	Karla Savage, Carole Casaretto Claudia Madison, Jean Wolslegel
June 27, 29, July 1	1:00 - 3:00 PM	Beginning Excel Spreadsheet	Claudia Madison, Dana Conant

LBLNET NEWS

Bob Fink
Sig Rogers

Macintoshes on LBLnet

The Apple Macintosh has become a significant support tool at LBL. There are now over 500 Macs and more than 30 AppleTalk twisted-pair Local Area Networks (LANs) interconnecting them and providing shared access to LaserWriters. Nine of these AppleTalk LANs are connected to LBLnet via Kinetics FastPath AppleTalk gateways. These gateways allow communication via LBLnet between Macs and LaserWriters on different AppleTalk LANs and to larger mainframe computer systems at LBL and elsewhere.

Connecting Macs to networks is expected to continue at a rapid pace. Currently there are several commercial Mac to mainframe software products (e.g., PacerShare and CommUnity for VMS). Though many of these products offer attractive functionality, there are serious network performance and failure implications with some of them when they are used in large heterogeneous network environments such as LBLnet. Observations of network performance degradation caused by certain Mac products have prompted development of a plan regarding the use of these products in the LBLnet environment.

Background of the Problems

There are several problems associated with broadcast traffic on LBLnet:

1. Broadcast traffic on LBLnet is seen by, and must be processed by, each system attached to LBLnet. This creates an increasing processing load in each host as the overall broadcast rate increases.
2. Broadcast messages occasionally cascade into feedback loops causing broadcast storms (of more than 1000 packets per second). These storms essentially saturate systems attached to LBLnet with processing overhead, often necessitating restarting of some systems that die of the overload.
3. Broadcast traffic above a certain level interferes with the booting process of diskless Sun workstations.

Most commercial products now offered for Mac to mainframe support use EtherTalk (Apple's

AppleTalk protocol for Ethernet). Unfortunately, the EtherTalk software supplied by Apple has the undesirable property of generating too much broadcast traffic. At least once every 10 seconds each AppleTalk gateway generates an RTMP packet (AppleTalk routing packet). In a local AppleTalk to Ethernet gateway using EtherTalk, the gateway propagates these RTMP packets from the local AppleTalk network onto LBLnet.

Also, whenever a Mac is booted, it tries to re-establish its previously valid AppleTalk node number on its local AppleTalk network. The EtherTalk gateway broadcasts this over LBLnet causing a flurry of response messages. In addition, Apple LaserWriters periodically broadcast printer availability messages which are propagated from the local AppleTalk network onto LBLnet.

Kinetics Gateway Implementations

The problems described above have been observed by other institutions and partial solutions have been implemented. The Kinetics FastPath gateway software developed by Stanford, Columbia and others has been placed in the public domain (known as the KIP CAP software enhancement for the Kinetics FastPath). This software uses the DoD Internet protocols and eliminates most of the broadcast traffic.

Direct Attachments to Ethernet

There are several hardware interfaces which directly connect a Mac SE or Mac II to Ethernet with several software alternatives for each interface. Most commercial software supplied with these products implements Apple's EtherTalk protocols. These products generate the same network traffic and cause the same problems mentioned earlier.

Currently, there are only a few software packages for these interfaces that do not have these faults. One of them is a public domain software package called NCSA Telnet (which includes FTP). The NCSA package utilizes DoD Internet protocols and can operate on a Mac connected to either LBLnet directly or to a local AppleTalk network using the KIP CAP Kinetics gateway.

Additional alternatives are becoming available, e.g., the CommUnity DECnet end node package. The CommUnity package uses only DECnet protocols on an Ethernet and thus will work on a Mac directly

attached to LBLnet but not on a local AppleTalk network since the KIP CAP Kinetics gateway uses the DoD Internet protocols, not DECnet.

The Plan for Macintoshes on LBLnet

The Network Advisory Group (NAG), a Laboratory-wide group that advises on technical operations and management issues affecting Laboratory-wide networking, has reviewed the issue of Macintoshes on LBLnet with assistance from the Computing & Communications Resources Department, Computing Services and the Workstation Group. All concur with the following plan:

- Only approved versions of KIP CAP modified Kinetics FastPath gateways should be allowed to connect local AppleTalk networks to LBLnet at this time.
- Only tested hardware and software should be used to implement direct or gatewayed Mac connections to LBLnet.
- Testing should be done by the Workstation Group of any new Mac hardware and software before approval is given for its use on LBLnet.

The Workstation Group will act as a facilitator for all activities regarding connection of Macintoshes to LBLnet. Please contact Richard LaPierre (x4692) for more information. See the article "WE ARE HERE TO HELP" in the Workstation Scene section of this newsletter.

Network Contact Information

LBLnet new installations: Ted Sopher, x4559 or x5354

LBLnet trouble calls: x5354

LBLnet comments or trouble reports: lblnet@lbl

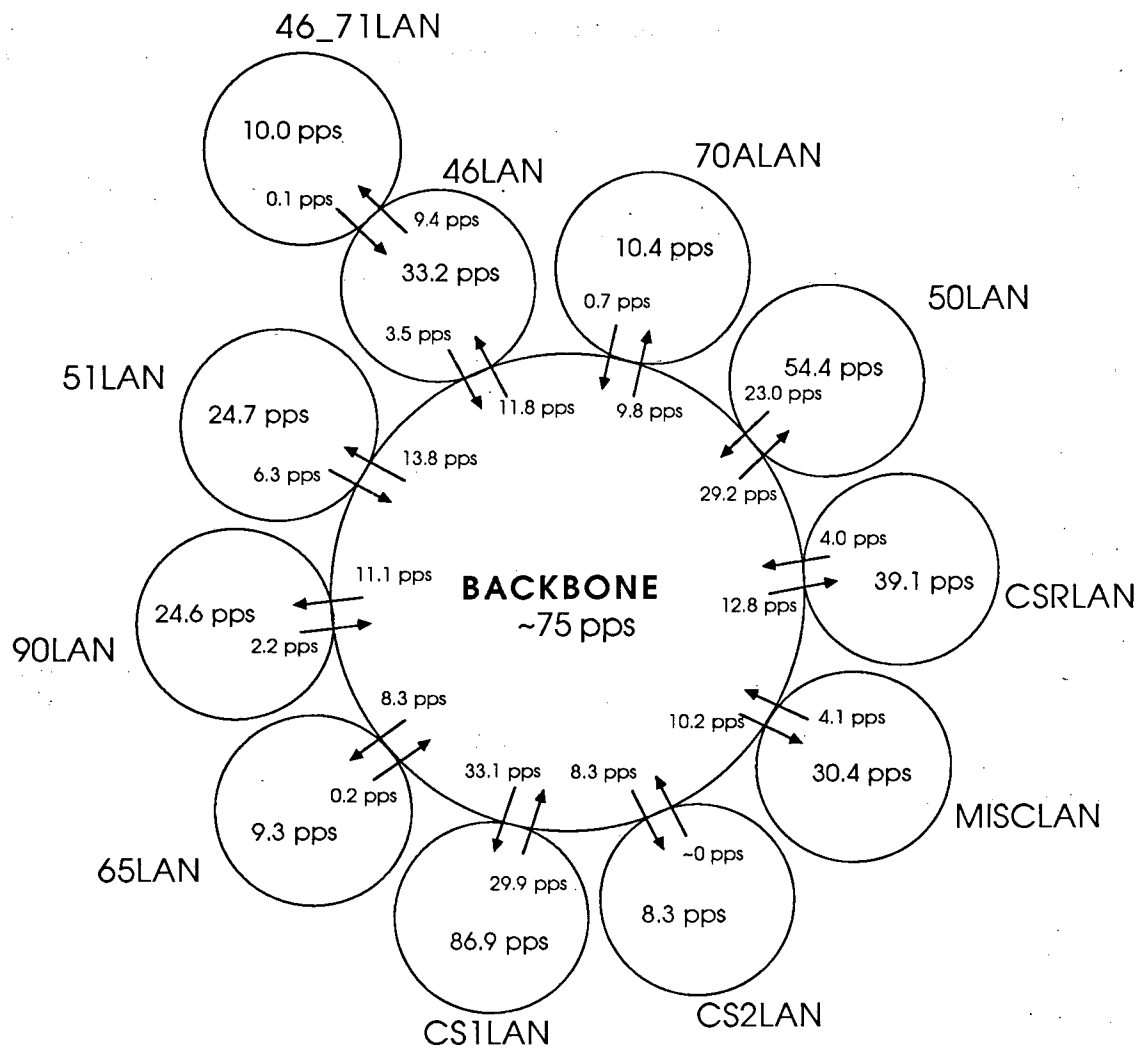
For Decnet administration: William Jaquith, x4388

For Internet administration: Darren Griffiths, x6966

For IBM PC and Macintosh network administration: Richard LaPierre, x4692

To contact the Network Advisory Group (NAG): nag@csam.lbl.gov

If you are in doubt about whom to call, call:
Bob Fink , x5692, Serge Polevitzky, x4389, or
Sig Rogers, x6713



pps = packets per second; all figures are monthly averages

arrows represent packet flow through a LanBridge
from one LAN to another

Note: Each ellipse shown above is a separate Ethernet that is interconnected to the others via Digital LanBridge-100 devices that provide forwarding of packets based on a learning algorithm that minimizes traffic between networks to those packets addressed to computers on another Ethernet.

LBLnet Activity March 1988

ICSD/CCR

Fink/Rogers

THE NETWORK ADVISORY GROUP (NAG)

William Johnston

The Network Advisory Group is an open membership, technical advisory group that discusses and makes recommendations on all aspects of computer networking at LBL. The purpose of the NAG is to:

- (1) Provide an open forum for discussion of problems and plans for LBL's networks. For example: migration to the Internet Domain Name System, IP subnets and gateways, Ethernet broadcast problems, mail issues, protocol implementation problems, and gateway issues for external networks like the MilNet, the LBL-UCB link, ESNet, and the X.25 based networks;
- (2) Provide technical advice to the several groups with management responsibility for components of LBL's networks, and;
- (3) Most importantly, provide for a collaborative effort and consensus mechanism among the users of LBL's networks, the technical development and support staff of LBL's networks, and the managers responsible for LBL's networks.

The NAG discussions are typically about the technical aspects of LBL networking, and all who are interested or have relevant concerns are invited to attend. The current membership of the NAG includes 23 people from several LBL divisions. The NAG meetings are normally held from 2 to 4 PM every Thursday in the 50F Conference Room. There is also a document which provides notes and references for the NAG discussions.

For more information about the NAG or about the document, send mail to

VMS Mail:	lbl::wejohnston
UNIX or Software Tools Mail:	wejohnston@lbl.gov

POSTMASTER'S CORNER

William Jaquith

This is the Postmaster's Corner. We'll answer frequently-asked Electronic Mail questions here.

You can also get answers to your Electronic mail questions by sending them to Postmaster or PostOffice on the CSA cluster.

This month there will be two Electronic Mail classes offered. (See Page 3 of this Newsletter). The first class covers UNIX & msg mail and the second class will cover VMS mail.

QUESTION:

I do not know the address of the person to whom I want to send mail. How can I find his electronic mail address?

ANSWER: There are several possible services you can use to find user/login/mail names. These services vary from computer to computer.

◦ FINGER ON UNIX

On the UNIX system, use the command **finger** to find information about users on the local computer. **finger** can also find information on remote UNIX systems when used with the **rsh** command. **finger** displays information about users. Unfortunately it gives information only on an exact match (the command is not a string search command). Here is an example on UX3. You type

```
ux3> finger william
```

and it responds

```
Login name: wdt    In real life: William Thompson
Directory: ...
```

The user's login/user/mail name is after "Login name:". In this example, William Thompson's login/user/mail name is "wdt". Mail can be addressed to wdt on this computer and it will be delivered to him.

◦ RESOLVE ON THE VMS CSA CLUSTER

On the CSA cluster use the software tool called **resolve** to locate valid user/login/mail names. This command is a string search and will return several columns of information. The first column is the login/mail/user name. The last column is the user's full name. You can send mail to the name in the first column. An example: If you type

```
CSA> resolve sharon
```

it responds

```
sharonj LBL114:[sharonj] [123,987] "sharon jamison"
```

In this example Sharon Jamison's mail/login/user name is "sharonj." You can send mail to her as sharonj from the CSA cluster using either VMS Mail or Software Tools msg.

◦ LOOKUP

Computing Services also has the **lookup** service available on UNIX computers UX1, UX3, ISD, and VMS CSA cluster computers. This service looks in the LBL Central Electronic mail database to see if a person is listed there. (Note: the LBL Central Electronic mail database is a *voluntary* listing and not everyone has elected to be listed in the database.)

The **lookup** command is a string search. The following command can be issued from either UNIX or CSA.

```
ux1> lookup burg      (or)
csa> lookup burg
```

Response would be

```
RMBurgess Robert M. Burgess Applied Science ...
```

In this example the string search on 'burg' finds Robert M. Burgess registered in the LBL Electronic mail database. Mail can be addressed to his mail name, RMBurgess. It's most likely that this mail name is different from his actual user/login name. The database does the translation from the mail name to the user/login name where the electronic mail will be delivered.

Mail to the LBL Central Electronic mail database is normally addressed to the node LBL or LBLGOV. So the best address to use for Robert Burgess is:

```
RMBurgess@lbl.gov
```

If you send mail to RMBurgess it will automatically be delivered to the computer where he prefers to read his electronic mail.

If these methods of locating an electronic mail/login/user name do not work, you'll probably need to resort to physical mail or to a phone call. There have been proposals to have on-line databases that users at remote sites can probe for information like mail addresses. Such on-line databases may come in the future; there are some experimental versions similar to **lookup** running at sites on the networks.

The model that electronic mail often follows is physical mail. In this model, in order to send mail, you must first get your correspondent's address.

If someone wants your electronic mail address, here is the information to provide to him:

If you are registered in the LBL Electronic mail database:

Milnet/internet/ARPA	- FMLastname@LBL.GOV
HEPnet/SPAN/DECnet	- LBL::FMLastname
Bitnet	- FNLastname at LBL
MFEEnet	- FMLastname@LBV

If you are on UX1, UX3, or ISD, and are not registered in the LBL Electronic mail database:

Milnet/internet/ARPA - login@UX1.LBL.GOV

I have used UX1 in the example; you can substitute UX3 or ISD. You have no HEPnet, Bitnet, or MFEEnet address because UX1, UX3, and ISD are not members of these networks. You can receive mail from these other networks only if your correspondent uses an electronic mail gateway or the LBL Central Electronic Mail Database.

If you are on the CSA cluster, and are not registered in the LBL electronic mail database:

Milnet/internet/ARPA	- login@LBL.GOV
HEPnet/SPAN/DECnet	- LBL::login
Bitnet	- login at LBL
MFEEnet	- login@LBV

Users on CSA can substitute the node name CSA3.LBL.GOV for LBL.GOV in the Milnet/internet and CSA for LBL in the HEPnet. The names LBL in the Bitnet and LBV in the MFEEnet do not have aliases.

This is the sort of information you should get from your remote correspondents so that you can send mail to them. The key information: the mail/user name, the network, and the computer name in that network.

Q UESTION: How large a file can I mail?

A NSWER: The VMS Mail does not have a file size limit. Some of the Milnet/internet mail systems have file limits of 100,000 bytes. The Software Tools MSG file limit is 100,000 bytes. Mail systems impose size restrictions in the interest of providing timely mail delivery. If very large files can be sent through the mail, long queues can develop.

The Bitnet asks for a voluntary size limit of 300,000 bytes. In addition, files are queued and transmitted smallest files first. If you are using the Bitnet to mail large files, you should not expect that they will be transmitted as quickly as small files.

Mailer systems mail ASCII text. They are not typically designed to deal with binary files. If you are moving

image or binary files, you probably should be using file transfer mechanisms like FTP, COPY, RCP, or BSEND.

NOTE:

Users on CSA who are creating or modifying their \$forward. or \$mailinterface. file should not use the UNIX editors *vi* or *ed*. The correct editors to use are the VMS editors, like *edt*. The reason for this is that the UNIX editors add a second dollar sign to the file name.

...Hermes...Postmaster

Forward comments or queries to William Jaquith (x4388) or

VMS Mail:	lbl::Postmaster
UNIX or	
Software Tools Mail:	Postmaster@lbl.arpa

TAC ACCESS: A HELPFUL SERVICE

William Jaquith

LBL is a member of the Milnet. Computer users on the Milnet can take advantage of a Milnet service called TAC Access. This is very similar to the Tymnet service. Please refer to an article in the March 1988 LBL COMPUTING NEWSLETTER for more information.

You'll find additional information on the CSA cluster. See the files

etc:[000000]tac-access.registration
etc:[000000]tac-phones.list

for information that comes from SRI-NIC.ARPA.

If you would like to be registered for TAC Access, please use the template that is the last 8 lines of the file etc:[000000]tac-access.registration. Complete the required information and forward it to:

TAC-Registrar@LBL.GOV

Forward comments or questions to me (x4388) or

VMS Mail:	lbl::WDJaquith
UNIX or	
Software Tools Mail:	WDJaquith@lbl.gov

GRAPHICS NEWS

FIRMWARE UPGRADE OF TEKTRONIX 4208 COLOR TERMINALS

Claudette Lederer

Firmware and keyboards of the Tektronix 4208 color terminals located in the Computer Center user area have been upgraded (to V 11) to add DEC VT200 Terminal emulation. These terminals now combine the familiarity of DEC text editing with Tektronix color graphics.

The VT200-style keyboard provides the standard Tektronix editing and function keys, plus a VT200-style layout, DEC user-defined function keys, and VT200-style text editing keys.

For more information, see the VT200/3179G ENHANCEMENTS FOR 4200 SERIES COMPUTER DISPLAY TERMINALS Operators' Supplement in the User Area.

Forward comments and questions to me (x6945), or

VMS Mail:	lbl::CELederer
UNIX or	
Software Tools Mail:	CELederer@lbl.gov

... Time to Move On

COMPUTER CENTER'S GRAFPAC SUPPORT

Claudette Lederer

Grafpac is an old graphics software package that was developed at LBL. This software has been available on the VAX/VMS cluster for those users who have not yet converted to one of the more modern graphics packages like Disspla, Tellagraf, Cuechart, DI3000, or PicSure.

However, development of Grafpac was halted long ago, and the source code has long since been removed from the CSA Cluster. The Computer Center's driver support of Grafpac has been limited to those listed in the GRAFPAC writeup by D. Cahn (April 6, 1984). This means that any Grafpac driver not listed in this document is NOT supported by the Computer Center.

Users should note that the Computer Center does NOT support any Grafpac driver that allows the user to write a file of Tektronix commands.

The Computing Center plans NO new development on Grafpac and recommends that old programs using it be converted to the more modern packages listed above.

Forward comments and questions to me (x6945) or

VMS Mail:	lbl::CELederer
UNIX or	
Software Tools Mail:	CELederer@lbl.gov

COMPUTING SERVICES NEWS

INPUT FOR DECUS

Jon Forrest

I will be attending the DEC User's Society (DECUS) Meeting in Cincinnati in May. The DECUS meeting is a very good place to find answers to questions and to communicate with the people who create and maintain DEC software and hardware products.

To those of you won't be going to this meeting: I'm willing to take any questions or comments you may have with me and try to get responses to them. Call me (x4991) or send me anything you want me to bring to DEC's attention.

VMS Mail: lbl::JLForrest
 UNIX or
 Software Tools Mail: JLForrest@lbl.gov

FOCUS CLASSES IN MAY

Bert Albrecht

We will be offering BASIC REPORT PREPARATION, Course No. 102 from Information Builders Inc. on May 26-27 from 9 AM to 4 PM in the Divisional Training Room, Bldg. 50B, Rm. 1237. This course provides the student with skills needed to create reports from FOCUS databases.

Cost for the course is approximately \$200. The list of users wanting to take this new Beginning FOCUS class is growing. If you'd like your name added to that list, call Pat Bean now (x7008) to register.

VMS Mail: lbl::HCAlbrecht
 UNIX or
 Software Tools Mail: HCAlbrecht@lbl.gov

TEX CLASSES COMING UP

Maggie Morley

• Beginning T_EX

A Beginners' course on the T_EX typesetting system will be given at the Laboratory in August by Jerry Borges. (See Class Notes on Page 3). It is designed to be a practical introduction for those with limited, or no, exposure to T_EX.

• Intermediate T_EX

A 5-day class in Intermediate T_EX will be given in the Division's Training Room (Bldg. 50B, Rm. 1237) during the week of September 19-23, 1988 by an instructor from the T_EX Users' Group. It will be comprised of equal parts of lecture and laboratory sessions, including many practical exercises. Topics to be covered include:

- paragraphs: more complicated paragraph shapes, paragraphs with labels, hanging indentation;
- boxes: more complex interaction between glues and \hboxes;
- math mode: greek letters and special symbols, delimiters, displayed equations;
- controlling line and page breaking; simple tables.

Prerequisite: Beginning T_EX or equivalent knowledge.

Cost for the course will depend on the number of students enrolled. It is expected to be between \$200-\$400 per student.

Space is limited so be sure to enroll early to save a spot (call Pat Bean, x7008).

For more info, contact Jerry Borges (x5568), or

VMS Mail: lbl::JTBorges
 UNIX or
 Software Tools Mail: JTBorges@lbl.gov

ERROR HANDLING IN THE NAG MATHEMATICAL LIBRARY

Marty Gelbaum

Mark 12 of NAG includes some features for error handling that let you take the appropriate action depending on the value returned in IFAIL. The key is how you set the integer variable IFAIL *before* you call the NAG routine.

HARD FAIL OPTION

If you set ifail = 0 *before* calling the NAG routine, then, to quote the NAG manual, "EXECUTION OF THE PROGRAM WILL TERMINATE if the routine detects an error." This is the so-called *Hard Fail Option*. For example, should you try to invert a singular matrix with the routine F04AEF, NAG prints the following message and halts the program:

```
** ABNORMAL EXIT from NAG Library routine F04AEF: IFAIL = 1
** NAG hard failure - execution terminated
FORTRAN STOP
```

SOFT FAIL OPTIONS

Two kinds of *Soft Fail Options* allow you to choose what to do depending on the value of IFAIL. If you use either of these two methods, program execution will continue after errors in the NAG routine, barring an error that the operating system itself will not tolerate. These options are

◦ Silent Exit

If you set ifail = 1 *before* calling the NAG routine, no error message is output even when errors occur. Therefore, should you try to invert a singular matrix using F04AEF after setting ifail = 1, NAG will not issue any error message at all; it will set ifail = 1.

◦ Noisy Exit

If you set ifail = -1 *before* calling the NAG routine and errors occur, NAG issues an error message like the one below, which was produced after F04AEF was called to invert a singular matrix.

```
** ABNORMAL EXIT from NAG Library routine F04AEF: IFAIL = 1
** NAG soft failure - control returned
```

Notice that IFAIL has been set to 1.

Some routines output explanatory error messages immediately before this "standard" error message.

Naturally, you need to test the value of IFAIL if you use either of the *Soft Fail Options*.

Forward comments and questions to me, X4749, or

VMS Mail:	lbl:M_Gelbaum
UNIX or Software Tools Mail:	M_Gelbaum@lbl.gov

"r n" - THE UNIX READ NEWS PROGRAM

Dave Cleveland

Rn is a UNIX program that allows UX1 and UX3 users to read news messages from a nationwide network called Usenet.

Simply type the command *rn*, and information about it and its features will be displayed on your terminal screen. Next, you will be prompted to type either *y* meaning that you want to read the first newsgroup now, *n* meaning that you want to read the next newsgroup, or *q* to quit. If you are not interested in a particular newsgroup, type *u* to unsubscribe. Newsgroup commands include:

<i>y</i>	Read this newsgroup now. Hitting the space-bar has the same effect.
<i>n</i>	Go to the next newsgroup with unread news.
<i>p</i>	Go to the previous newsgroup with unread news.
<i>g newsgroup</i>	Go to <i>newsgroup</i> ; subscribe to <i>newsgroup</i> .
<i>u</i>	Unsubscribe from current newsgroup.
<i>c</i>	Catch up; mark all newsgroup articles as read.
<i>q</i>	Quit.

When you type *y* to read a newsgroup, the first article or message will be displayed. At the end of each article you will be prompted to type either *n* meaning that you want to read the next article, *p* meaning that you want to read the previous article, or *q* meaning that you want to quit reading articles in the newsgroup. Article commands include:

<i>n</i>	Scan forward for next unread article. Hitting the space-bar has the same effect.
<i>p</i>	Scan backwards for previous unread article.
<i>j</i>	Junk this article and mark it as read.
<i>s filename</i>	Save by writing the article to <i>filename</i> .
<i>q</i>	Quit.

For a list of all of the *rn* options, read the UNIX manual entry for *rn* by typing *man rn*. For a printed copy, type

itroff -Pap4 -man /usr/man/man1/rn.1

Note that the printer "ap4" is in 50B-1215; you may want to substitute the name of another printer,

perhaps one closer to where you work.

Although it is currently not possible to post articles or replies to the network, it will become possible in the future. Stay tuned.

Forward comments or questions to me, x5336, or

VMS Mail:	lbl::DHCleveland
UNIX or	
Software Tools Mail:	DHCleveland@lbl.gov

SERVING SUN DISKLESS WORKSTATIONS

Lam Wong

UX3 is available as a server for Sun diskless workstations, providing the SunView Window environment and VT100tool. We will provide regular disk backup service for workstation users' files.

Current recharge rate is \$300/month plus normal UNIX file storage costs. However, we are looking at ways to reduce that figure.

Forward comments and questions to Lam Wong, x4786 or

VMS Mail:	lbl::LHWong
UNIX or	
Software Tools Mail:	LHWong@lbl.gov

TEX and LaTeX ARE AVAILABLE ON ISD

Marty Gelbaum

The TEX and LaTeX text-processing software are now available on ISD. These are V 2.0 of TEX and V 2.09 of LaTeX; these are the same versions that are available on UX1 and UX3. The commands are available as

tex
latex

BibTEX is also available.

We plan to update these programs in the next three months; for example, we plan to install V 2.9 of TEX at that time.

Forward comments and questions to

VMS Mail:	lbl::M_Gelbaum
UNIX or	
Software Tools Mail:	M_Gelbaum@lbl.gov

CERN LIBRARY UPDATES ON VMS

Werner Koellner

- Access to the Cern Library, to the corresponding HELP Libraries, and, in fact, to all maintained Physics Utilities is available, after executing the DCL command

`@Physics$Manager:Setup_Phys`

It is best to include this line in your `Login.Com` file.

- `Cern$Library:GENLIB.OLB` has been updated. A number of obsolete routines have been removed. The former version of the library is available as `Cern$Library:GENLIB.OLD`. Type

`help cern lib`

for details on available Object Libraries.

- PAW, the Physics Analysis Workstation, is still in its test mode. Long writeups for PAW and its associates, including writeups for `HBOOK4`, `HPL0T5` and `HIGZ`, are available at the Computer Center Library (Bldg. 50B, Rm. 1232B, ×4242). Type

`help paw`

for details.

Forward comments or questions to me, (×4398) or

VMS Mail: `lbl::WOKoellner`

UNIX or
Software Tools Mail: `WOKoellner@lbl.gov`

SUN DOCUMENTATION AVAILABLE AT THE LIBRARY

Maggie Morley

Documentation for the Sun Workstations is now on sale at the Computing Services Library, (Bldg. 50B, Rm. 1232B, ×4242).

Manuals available include

- the complete set of Sun Systems Manuals,
- the Commands Reference Manual,
- Sun Fortran with VAX/VMS Extensions,
- Editing Text Files,
- Programming Utilities,
- UNIX Interface Reference Manual.

You can also order other standard Sun manuals there. Cost of the documents will be charged to your Computing account.

NOTES FROM TROUBLE MAIL

Dana Conant, Computing Services

Following are further examples of typical exchanges from our on-line UNIX and VMS trouble mail facilities.

MESSAGE:

How do I get rid of mail.mai;1 in my collection?

RESPONSE:

In general, it is not wise to delete the MAIL.MAI file in your home directory, because VMS mail writes your mail messages there.

MESSAGE:

Is it possible to send mail from a DECnet machine over internet? I have my mail forwarded off the cluster to a MicroVAX and would like to be able to respond to people using VMS mail from there. Is there a way to send it or a gateway to which I could send it?

RESPONSE:

Try using this address format:

lbl:"user@node.domain"

CSA will work as well as LBL. The st%"..." is the correct syntax to use when on the CSA cluster and using VMS mail to send mail to a domain site. The syntax when not on the CSA cluster is as above.

MESSAGE:

Is there a manual available on the graphics language of the Talaris laser printers, or the Imagens, or Apple LaserWriters? I would like to combine text and graphics on one page. Thanks.

RESPONSE:

The graphics language of the Talaris is QUIC; that of the Imagen is IMPRESS, although both machines understand Tektronix 4014 code. The language of the LaserWriter is PostScript. PostScript is the most widely supported of these three languages; you can obtain books on its use from the Computing Center Library.

MESSAGE:

Is it possible for one to print a PostScript graphics file at LBL? Failing that, is it possible for one to translate a PostScript file to a dvi file?

RESPONSE:

If your file does NOT reference some other PostScript file, you can print it by

LPR -Pdevice filename

where "device" is one of the many Apple LaserWriters on the distributed printing network or one of the two Varityper VT600 printers. The on-line HELP article called "LASERPRINTER," subtopic "LOCATIONS," lists the names and locations of these printers. If your file references some other file, you should edit the named file to prepend the referenced file.

There are no facilities for converting PostScript to DVI format here; the latter format is the output from T_EX. We can print DVI files on the PostScript, Imagen and Talaris printers here.

MESSAGE:

I keep getting a warning when I try to invoke Tell-a-Graf from CSA4: "THIS COPY IS NOT AUTHORIZED ON THIS COMPUTER..." On which computer can I run TAG?

RESPONSE:

You can run Tell-a-Graf (TAG) on CSA1 and CSA4; you are using the default version of TAG, which will be replaced soon by a better version. I'd suggest starting to use this better version right away; currently, you have to use the following command ONCE in your login session before using it:

SETUP_NEWTAG

MESSAGE:

How do I create a log file of my interactive session? Is SET HOST/LOG the only way? Can I suspend/resume the log file at will?

RESPONSE:

SET HOST/LOG is a good method; so far, it doesn't seem possible to "suspend" the log file at will since DECnet does not support a "suspend" command. Some virtual terminal commands (telnet, for example) do allow the user to "suspend" the session and thus return to his/her "home" machine. However, the current version of telnet on CSA does not have a "log file" option.

You can save part of your session when you use programs like Versaterm from a Macintosh as your terminal interface. There is a limit on the buffer that stores your screen interaction.

MESSAGE:

Who wrote *units*? Can it be updated from here easily? It would be very useful if it had more energy units. Any ideas?

RESPONSE:

Units was written at UC Berkeley about eight years ago. There is no need to modify the program; it reads a database file, just as the man entry indicates, called "usr/lib/units". You can make the units program read from your own database file by

`units mydatabase`

where "mydatabase" is your database file.

The simplest way to get started is to copy /usr/lib/units to some directory of your own and edit it; you'll see the essence of it right away. You can check out what happens when you use your own version by updating its currency conversion factors.

MESSAGE:

I was trying to logout of the UX1 system by typing "logout" and the message "There are stopped jobs" came on the screen. What does this message mean? I was sending messages under UX1 "mail." Were the messages sent or what?

Also, how do you exit after you get "there are stopped jobs." The computer will not accept "logout."

Thank you for your help.

RESPONSE:

It means that you have jobs that were stopped (<ctrl z> stops a process). You can resume the job by typing "fg." If you don't care to resume the stopped job, then just type "logout" one more time after the message, and you should be able to log out.

MESSAGE:

Why are UX1 and UX3 in the domain "csd"? Aren't they in "lbl.gov"? I just used "ypcat hosts" this morning and it worked.

RESPONSE:

"csd" is the Yellow Page domain name; it has nothing to do with the internet domain or sendmail domain.

MESSAGE:

I am running a program on the CSA cluster and I want to stop it during its execution. I know I need the PID number

(which seems to be changing with time) and issue a command. Say I know the number, what command should I use to stop the programming from running any further?

RESPONSE:

When you know the process ID number and you'd like to stop a job, try

`STOP/ID=pidnum`

If this doesn't work, send mail to *trouble*.

MESSAGE:

I am using an adm3a terminal and telnetting from campus. When I log into CSA, I get a message "terminal type unknown". VI does not operate properly, indicating an incorrect terminal type setting.

I have been unsuccessful finding the correct command using helpfiles. I have tried "set terminal/device=adm3a" and infinite variations thereof. Can you help?

RESPONSE:

Note that your login.com contains the line

`$ SET TERM/INQUIRE`

which the VMS documentation specifically warns works only with DIGITAL terminals. The ADM3A, trustworthy as it is, is definitely *not* a Digital terminal. Therefore, you should remove that line from your login.com if you use an ADM3A.

Put the following in your login.com or run the command interactively after you log on:

`$ @SYS_UTILITIES:ADM3A_SETUP`

(Obviously, omit the "\$" if you run it interactively.) This will make VMS, VI, and CSA programs as happy as they can be with the ADM3A. I've used that setup repeatedly with very good results.

If you want wider distribution of your comments or questions, we encourage you to send them to trouble since it is seen by a wide range of people, including Divisional management.

To use trouble, enter the VMS, Software Tools, or UNIX mail system and send mail to the address

`trouble<cr>`

We won't, of course, include any user's name in the exchanges. . . . Ed.

THE WORKSTATION SCENE

[25.5.1].....

● WORKSTATION GROUP ELECTRONIC MAIL

Workstation Group members can now be reached from the VMS cluster or the Computing Division's UNIX machines by sending mail to

VMS Mail: lbl:WKSG

UNIX or WKSG@lbl.gov
Software Tools Mail:

We hope this alternative (to the telephone) will help users who have problems or who want to share helpful hints.

[25.5.2].....

● P²R - DO IT ELECTRONICALLY!

It's Performance/Progress Review time again. You can obtain the updated electronic versions of the PPR forms for the Macintosh (*Word 3.01*, *MacDraw*, *MacWrite*), *TEX*, *Nroff/Troff*, and Wang, at TID (x6705). ASCII files are also available for you to format on your favorite IBM word processor. Macintosh and IBM versions are also available at the Workstation Lab (Bldg. 50B, Rm. 2231, x6858). Bring or send a disk.

Please note: This is the updated version of the template used last year. If you used that template last year, you *must* use this year's version (there have been textual changes).

[25.5.3].....

● RESUME TEMPLATE FOR THE MAC

As noted in last month's Workstation Scene, the latest version (*Word 3.01*) of the template for the "Annual Supplement to the Professional Résumé" is now available for MAC users. Employees who must fill out this form every year can have a copy of the template by bringing a disk to the Workstation Lab, 50B/2231.

[25.5.4].....

● NOT QUITE THE TOTAL WORD

In last month's WORKSTATION SCENE, we promised you a review of *Total Word*, the latest release from Volkswriter. Unfortunately, your Volkswriter reviewer, R. LaPierre, has not had an opportunity to get to this package. (What is that about never putting anything in writing?)

However, all is not lost. Ted DeCastro of EH&S has evaluated the product and is very pleased with its capabilities. Volkswriter users will undoubtedly find the new enhancements to be well worth the \$95 upgrade price. The "look and feel" of *Total Word* is the

same Volkswriter style and that alone is worth the upgrade price. If you would like to talk about this latest release, feel free to give Ted DeCastro a call at x5251.

[25.5.5].....

● WE ARE HERE TO HELP

In this month's LBLNET NEWS column (Pg. 4) we discuss some of the issues involved with connecting Macintoshes to the LBLnet. In the article, we also summarize the plan for connecting Macintoshes to the LBLnet. The Workstation Group will act as a facilitator for connecting Macintoshes and IBM PC's to the LBLnet. Our aim is to provide you with "one-stop" shopping: we will

- Brief you on the acceptable hardware and software,
- Provide you with sample purchase order information,
- Arrange for LBLnet connections,
- Obtain the required Internet and/or Decnet address assignments, and
- Arrange for the installation of the gateway software if you are purchasing a Kinetics FastPath box.

Please give me a call (R. LaPierre x4692) if you are considering connecting to the LBLnet or if you just want to talk about the experiences other Macintosh or IBM PC users have had connecting to LBLnet.

[25.5.6].....

● MICROSOFT WORD SPECIAL

Microsoft is offering a special promotional package of *Word*, its popular word processing package for the Macintosh and the IBM PC. This package will be available for \$40 until the end of June.. This offer to academic institutions may be extended, but as we go to press it appears that it is only good through the month of May. The only item missing from this promotional offer is the booklet *Learning Microsoft Word*; most Microsoft Word users I have spoken to will never miss it.

For additional information or to place an order, contact the Workstation Group at (x6858) to place your order.

[25.5.7].....

• WORD ON MAC: "MERGE PRINT" HINTS

◦ CALLING ALL FILES

... Patricia Bullocks at the Bevatron forwards a most creative hint:

Patricia's problem: to create twenty different letters of about four paragraphs each. One of the four paragraphs is specific to each letter; otherwise the letters are identical.

The **Merge Print Include** command allows inclusion of a particular document file, but the *Word* documentation makes no mention of how to use a single merge-print document to call twenty different files.

In her data file, Patricia added a field that names the document file containing each letter's individualized paragraph. For example, **Letter A** calls a document named "Paragraph 1," **Letter B** calls a document named "Paragraph 2," and so forth. Her data file looks something like:

NAME	ADDRESS	INCLUDE DOC
PersonA	AddressA	Paragraph 1
PersonB	AddressB	Paragraph 2

Her merge print document file looks like a regular letter merge print file. Where an individualized paragraph is supposed to come in, she has the command:

«INCLUDE«INCLUDE DOC»»

which delivers the correct document file for each letter.

(Patricia reports also that the included file can be a graphics file.)

◦ BLANKETY-BLANK

When you read in various mac-azines that it's impossible to fill in blank lines when using *Word Merge Print* command, don't believe it. It is possible to control printing of blank lines, it's just not very much fun.

◦ WORD ON MAC: "SEARCH/CHANGE" HINT

It's possible to search for the ASCII code of a character in *Word* by preceding the ASCII number with a caret (upper-case six). ^32, for example, searches for a blank space; ^1 finds graphics elements.

We don't even have to know the ASCII code. If we select the element of interest and type **Command-Option-Q**, then *Word* will display the ASCII code at the bottom left of the screen.

Call Claudia Madison (x6858) if you have questions, or, especially, if you have other helpful hints.

[25.5.8].....

• HYPERCARD CORNER

Interest in *HyperCard* is growing quickly. New applications are multiplying. In anticipation of great things to come, WKSG will present a monthly *HyperCard* "section." We'll cull through our sources and give you a summary of the past month's goings on, and some tips too.

◦ New Versions

HyperCard, V 1.2 will ship in May; V 2.0 is planned for August of this year. V 1.2 will include more than support for Apple's CD-ROM (it ships in May too). We've heard rumors of additional new features, including -- viewing scripts within a card, dialog-box style when selecting a button box, and other goodies. *HyperCard* users are very fortunate that Bill Atkinson and Apple got together for future enhancements of *HyperCard*.

◦ HyperExpo and StackMart

Past rumors of a *HyperCard* show like the MacExpo have become a reality. The first, and hopefully annual, HyperExpo and StackMart is planned for June 11-12, 1988 at the Civic Auditorium in San Francisco. There will be two days of seminars, displays by commercial vendors and other good things. More details next month.

◦ Reports

Leave an opening or weak spot in a software product and someone will quickly step in with a fix. Case in point, "Reports," from Activision, a report generator for *HyperCard*. For about \$70, you can get print-outs with pizzazz. V 2 of *HyperCard* should improve the report generation capabilities. But if you can't wait, try "Reports." We should have a copy in the lending library soon.

◦ HyperLink Magazine

While cruising the aisles at last month's PC Faire (at Moscone Hall in San Francisco), we came across a booth for "HyperLink" magazine. Most PC junkies seemed to be passing it by in disdain, but we took a closer look and found what we considered to be a diamond in the rough. This magazine could grow into a great little reference resource for *HyperCard*, with lots of sample programs and tips. Your Workstation member picked up the initial copy and we will keep succeeding subscription copies in our reference library.

A Faire observation: did you ever think you'd see so many MAC's sitting along side PC's in the booths at the PC Faire? (Not at IBM's booth, of course).

◦ MacRecorder

Farallon Computing has come up with the software and hardware for integrating digitized sound into *HyperCard* stacks. *MacRecorder* is now available, and retails for \$199. The package contains two programs:

HyperSound and *SoundEdit*. The hardware is a small box with a microphone and buttons that plug into the modem or printer port of your MAC. Put it all together and it's easy to put sound into a stack. The WKSG Lab has a demo stack of *MacRecorder*. Stop by for a copy: listen to their sales pitch.

◦ HyperCard Training Calendar

In addition to the regular HyperCard classes in the Workstation Group's Mac Training Room (see the *Schedule of Classes* on Pg. 3 of this Newsletter), Apple holds HyperCard and other classes in its Menlo Park, San Francisco, and Pleasanton offices every month. Stop by the Workstation Group Lab for a copy of Apple's Northern California Training Calendar. The classes are day-long and there is a nominal fee.

[25.5.9].....

● MAC HAZARD - BE CAREFUL!

It may be worth repeating what was said in an article in "Macintosh Today," April 5, 1988, Pg. 18.

Keep your desktop clean.

Remember, when copying complete disks, the Apple System ignores anything left on the desktop. Although the data is resident in the disk, the operating system does not include "exterior" files in the disk catalog, nor during copying routines. You could lose data.

Now, the Apple system makes the copy operation very easy and almost painless. Most MAC novices and even experienced users do it with almost reckless abandon. Drag that icon on another and that's it. Well, that may not be just it!

If you routinely leave folders and programs out on the desktop, (and I've seen plenty of screens with icons all over the place), you could get into trouble in the copy process. And with the advent of more and larger screens, the temptation to pile more icons on the desktop is even greater.

To lessen the hazard, clean off your desktop early and often. Hopefully, Apple will correct this system weakness in a subsequent system update. However, an update could be sometime off, so don't wait. Keep the desktop uncluttered and keep those folders organized.

[25.5.10].....

● MAC GOODIES

... Workstation Group Member Claudia Madison looks at some MAC software.

◦ AnySucker (Thoughts about *AnyText* & *AnyGraph*)

There's one born every minute and I'm definitely the one for the minute I was born.

Compatible Systems Corporation *AnyText* and

AnyGraph were among few file Apple File Exchange translators touted at MacExpo. They were billed as "universal" file translators and promised, at a most reasonable price, to translate any IBM PC word processing or graphics file to any MAC word processing or graphics format. In a simple-minded way, they do. On the IBM end they actually capture printer output to disk, and only IBM Graphics printer output at that. On the MAC end they translate that output to *MacWrite* or *MacPaint*.

AnyText doesn't do a bad job of maintaining the minimal formatting the IBM graphics printer is capable of. While it doesn't match the translation efficiency of *Software Bridge*, which we've been using--and will continue to use--for translations, *AnyText* might be worth a try for people who use PC word-processing programs not supported by *Software Bridge*. I tested it with *PC Write*, for example, with middling success.

◦ Stepping Out

Billed as a "screen extender," *Stepping Out* by Berkeley System Design is a nifty program for those who get tired of scroll scroll scrolling along dinky MAC screens. *Stepping Out* latches on to a fairly good-sized hunk of MAC memory to draw virtual large screen images. (Users can determine (within the constraints of memory size) how big this virtual screen will be.) What we see on the real screen is a small part of the memory-screen. As we approach the physical screen edge with the mouse pointer, more of the screen appears, FAST. Key combinations give reduced, magnified, or reversed views of the screen. This means that working with a word-processing document in landscape mode no longer involves painful scrolling across the screen. And what it does for *Excel*! Imagine a window that shows A1:M72 instead of the regular MAC screen window of A1:F20.

Before you step: Programs that don't allow re-sizing of windows won't take advantage of *Stepping out*; screen saver programs most probably will get confused; use *MacDraft 1.2A*, other graphics programs might not work. *Stepping Out* works as promised on *MAC PLUS* and *MAC SE* (without large screens), but don't even think of trying it on a *MAC II*, which this program causes to step all the way out to never-never land.

◦ Quick Keys

Quick Keys by CE Software eliminates a lot of mousing around and a lot of typing, too. Not only can mouse movements (called "mousies"--ugh!) be recorded and played back as keystrokes (individually or in series), but text can also be stored for retrieval with a single key combination. Name, department name, phone number, etc. can be stored this way for quick recall. And current date and time can also be assigned a key

sequence--and can be played back in any of a number of formats.

With *Quick Keys* comes *Dialog Keys*, allowing simple keyboard movement around dialog box buttons; and *Quick Access*, an entire application designed to create whole sets of keyboard/mouse macros which are stored as disk files. We can create a set for the desk top and different sets for various applications. Several starter sets, for both regular and extended keyboards, come with the program.

◦ **Squeeze Play** (Thoughts about *MAC SQZ!*)

MAC SQZ! by Symantec could be a real boon to MAC users who find their *Excel* files outrunning available disk space. It also provides a handy method of annotating (briefly) changes to *Excel* worksheets, keeps a history of dates changes were made, AND allows file level (not protected cell level) password protection.

The basic squeezer comes in two parts--an init and a desk accessory. In addition there is a tools application (to read and print the history file and to change various settings), and an Apple File Exchange translator for doing batch squeezes and unsqueezes.

A 128.5 K file squeezed down to 24K. Reading the unsqueezed version back into *Excel* took 8 seconds; reading the squeezed file took 10 seconds.

BEWARE: This doesn't work with *MultiFinder*. Also, it works on worksheets only, not charts.

[25.5.11].....

● **MULTIFINDER & FINDER STARTUPS**

... For the user with a MACful of RAM memory using *MultiFinder*.

If you are using *MultiFinder* most of the time, and need to restart to run a *Finder* application now and then, here's how to change back to the *Finder* without having to re-create the start-up set.

If you are in *MultiFinder* and want to run a *MultiFinder*-hostile program, just return to the *Finder* and select **Restart** from the **Special** menu. As the machine reboots, hold down the **Command** key. Your MAC will bypass *MultiFinder* and run the *Finder*, so you can launch your incompatible program and use it.

When you're finished, return to the *Finder* and select **Restart** again. You'll jump right into *MultiFinder*, with all your start-up applications launched as usual.

[25.5.12].....

● **CAMERA-READY?**

Creating camera-ready, oversize sheets on a LaserWriter printer is impossible. It turns out that creating camera-ready, oversize sheets on an Apple ImageWriter LQ printer is impossible, too. These printers can only print specific paper sizes, and that seems to be that.

We can, however, create large sheets if we use the LaserWriter, an enlarging copier machine, and some simple math. The strategy is basically to print the largest size area possible on the LaserWriter and then enlarge that on a copy machine.

The Workstation Group has a document that details this strategy and gives examples. Call Claudia Madison (x6858).

YES I would like to receive the Computing Newsletter

NAME

ADDRESS

.....

CITY
STATE

ZIP

PHONE

COMMENTS

.....

Return to:.....Newsletter - MS 50F
Lawrence Berkeley Laboratory - University of California
Berkeley, CA 94720
Attention: NL MAILING LIST

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SIGN UP FOR THE NEWSLETTER

Attention LBL employees: If you use the Computer Center's UNIX or VMS system, or if you are a owner or user of a PC or a MAC, you should sign up to receive the Laboratory's Computing Newsletter. It contains useful information about our systems and has a helpful Workstation News section (supported by the Information and Computing Sciences Division's Workstation Group), offering support and helpful hints for PC users. This is also a place for you to send questions and comments. To add your name to the Newsletter Mailing List, contact Irene Partyka, x4242, or

VMS Mail: lbl::IMPartyka

UNIX or
Software Tools Mail: IMPartyka@lbl.gov

Lawrence Berkeley Laboratory
Computer Center Library
MS 50F
University of California
Berkeley CA 94720

VOGUE LA GALERE

... Rabelais "