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Author

Morley, M.

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PUB - 429

April
1989

LBL COMPUTING NEWSLETTER

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BERKELEY, CALIFORNIA 94720

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NAMES AND 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

Director: Stewart Loken (SCLoken)7474 50B 2232E
Deputy: Sandy Merola (AXMerola)7440 50B 2232C

COMPUTING AND COMMUNICATIONS RESOURCES

Head: Ken Wiley (KGWiley)7083 50B 2258E
Laboratory-wide network planning:
Bob Fink (RLFink)5692 50B 2258E
Office of Computing Resources:
Dave Stevens (DFStevens)7344 50B 2258F
LBLnet Manager: Sig Rogers (SGRogers)6713 50B 2258G
Telephone Services: Sam Gibson (FSGibson)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 (FMAatchley)5455 50F 113
Deputy: Harvard Holmes (HHHolmes)5742 50B 3238C
Central Office5871, 2 50F 125

VMS SYSTEM

Eric Beals (ERBeals)5351 50F 143
System Manager (GPJohnson)6211 50B 1225

UNIX SYSTEM and DISTRIBUTED PRINTING

Craig Eades (WAEades)6569 50B 3233
UNIX (DHCleveland)5336 50F 115
DISTRIBUTED PRINTING (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

GRAPHICS

Nancy Johnston (NEJohnston)6945 50F 145

NETWORKING

Darren Griffiths (DAGriffiths)6966 50F 146

COMPUTING FACILITIES

Connecting a Remote Terminal (ACHart)7444 50F 29
Graphics6945 50F 126
Operations Area5211 50B 1215
Develcon Problems & Terminal Repair
(PGMurray)5354 50B 2259

COMPUTING APPLICATIONS

Applications Group
Head: Jerry Borges (JTBorges)5568 50F 44

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
Burlingame	415-588-3043	
Vallejo	707-644-1192	
Antioch	754-8222	
Fremont	490-7366	
Pleasanton	462-2101	

MFE Consulting Number is 422-1544

Newsletter Closing Date is **Friday, April 14, 1989**
Address all communications for the Newsletter to login nooz@ux1.lbl.gov.

Editor: Maggie Morley

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LBL COMPUTING NEWSLETTER

COMPUTER CENTER CLASSES

April 1989 - June 1989

COMPUTING SERVICES CLASSES

Bldg. 50B, Rm. 1237

The following courses are offered by Computing Services. There is no charge for these classes. To enroll, obtain your supervisor's approval and then contact Pat Bean, x7008.

April 19	Electronic Mail: Survey 10 AM - Noon	June 14	UNIX: Intro (Continued) 9 AM - Noon
June 12	UNIX: Bare Bones Intro. 9 AM - Noon	June 15	UNIX: Text Formatting Intro. 9 - 10:30 AM
June 13	UNIX: Using <i>vi</i> 9 AM - Noon		

WORKSTATION CLASSES

The following courses are offered by the Workstation Group. There is no charge for these classes. To enroll, obtain your supervisor's approval and then contact Carole Casaretto, x6585. (Those classes with asterisks (*) appended are already full.)

IBM-PC: Bldg. 50B, Rm. 1237		Macintosh (continued):	
April 18, 20, 25, 27	Microsoft <i>Word</i> for the PC 3 - 4:30 PM	May 9, 11, 16, 18	Beginning <i>MS Word 3.01</i> 1 - 2:30 PM
April 18, 20	PC-DOS 10 - 11:30 AM	May 10, 12	Basic Intro. to <i>FileMaker</i> 1 - 3 PM
April 25	Kermit File Transfer 10 - 11:30 AM	May 17	Intro. to <i>HyperCard</i> 10 - 11 AM
April 27	Introduction to PC Mail 11 AM - Noon	May 22, 24	<i>HyperCard</i> - Creating Cards & Stacks 10 - 11:30 AM
Macintosh: Bldg. 50B, Rm. 1229		May 22, 24, 26	Beginning <i>Excel Spreadsheet*</i> 1 - 3 PM
April 4, 5, 6	Introduction to <i>MacDraw II*</i> 10:30 AM - Noon	June 6, 7, 8	Intro. to <i>MacDraw II</i> 10:30 AM - Noon
April 5, 7	Basic Intro. to <i>FileMaker*</i> 1 - 3 PM	June 14, 16	Basic Intro. to <i>FileMaker</i> 1 - 3 PM
April 11, 13, 18, 20	Beginning <i>MS Word 3.01</i> 1 - 2:30 PM	June 26, 28, 30	Beginning <i>Excel Spreadsheet*</i> 1 - 3 PM
April 19, 21	Basic Intro. to <i>FileMaker*</i> 1 - 3 PM	July 24, 26, 28	Beginning <i>Excel Spreadsheet</i> 1 - 3 PM
April 24, 26, 28	Beginning <i>Excel Spreadsheet*</i> 1 - 3 PM		
April 25	Intro. to <i>Claris CAD</i> (†) 1 - 3 PM		
May 2, 3, 4	Intro. to <i>MacDraw II*</i> 10:30 AM - Noon		
		(†) Prerequisite for Intro. to <i>Claris CAD</i> : user <u>must</u> have prior experience with <i>MacDraw II</i> or other CAD drawing experience.	

LBLnet NEWS

Bob Fink
Sig Rogers

Kinetics FastPath Connections to LBLnet

Macintosh systems are typically networked together and to LaserWriters with various AppleTalk twisted-pair wiring schemes (i.e., LocalTalk and PhoneNet). When access to/from other systems is required, a connection to LBLnet is the easiest solution. To provide the interconnection a "router" or "gateway" is used; the specific one in use at LBL is the Kinetics FastPath.

Services available through a FastPath are Distributed Printing, shared access to LaserWriters, TOPS, AppleShare and other inter-Macintosh file sharing, and, eventually, mail forwarding from the central LBL mail system to Macintosh systems.

The Kinetics FastPath has evolved over the last several years into a robust product, with help from LBL staff Theresa Breckon, Van Jacobson, and Craig Leres. The LBL software enhancements to the FastPath are essential to its performance, reliability and services on LBLnet. Therefore, the Network Advisory Group (NAG) has recommended the policy that FastPath software be installed by a single service function which is Craig Leres (of RTSS) and the various folk that assist him.

Computing Services, Workstation and LBLnet staff support this policy since it provides for services needed by Laboratory staff and guarantees the reliability of LBLnet. Part of the reliability issue is to insure that AppleTalk EtherTalk protocols are not used on LBLnet (see LBLnet News, May 1988), and that AppleTalk is encapsulated in Internet packets. Other important services provided are AppleTalk Zones, TCP/IP Subnet support, and proper routing mechanisms.

To assist users and to guarantee the adherence to this policy, Computing Services and the Workstation group jointly support a Kinetics Administration function. Any user needing a Kinetics service should request it through Bob Rendler. Bob will see that the FastPath is ordered and physically installed properly on LBLnet, that its software is installed by Craig Leres's staff, and that it is fully checked out for successful operation on LBLnet.

It is very important that users do not buy a FastPath without coordinating with Bob Rendler. It is also essential that no user ever try to install a Kinetics FastPath on LBLnet, as this will lead to immediate problems for all users of LBLnet.

Distributed Printing on Apple LaserWriters

The Distributed Printing service provided by Computing Services now provides service to over 75 printers, many of which are Apple LaserWriters interconnected to LBLnet through Kinetics FastPath gateways. This service allows printing support from any LBL computer system that is attached to LBLnet and supports TCP/IP.

The administration of this service is also provided by Bob Rendler. Therefore it is appropriate that you should contact Bob Rendler for information whenever you have any questions about Distributed Printing, whether it is to Apple LaserWriters or not.

MSRI Now On LBLnet

The Mathematical Sciences Research Institute (MSRI) is now connected to LBLnet, and to the rest of the Research Internet. This connection has been made via a 64 kbps twisted-pair circuit between Proteon routers located at LBL and MSRI.

MSRI will be addressed as MSRI.GOV though they are physically a subnet of the LBL Internet and will receive their Domain Name Service from LBL.

Network Contact Information

LBLnet planning: Bob Fink, x5692 rlfink@lbl

LBLnet new installations:
Ted Sopher, x4559, x5354 tgsopher@lbl

LBLnet trouble calls: x5354

LBLnet comments or trouble reports: lblnet@lbl

For Decnet administration:
Darren Griffiths, x6966

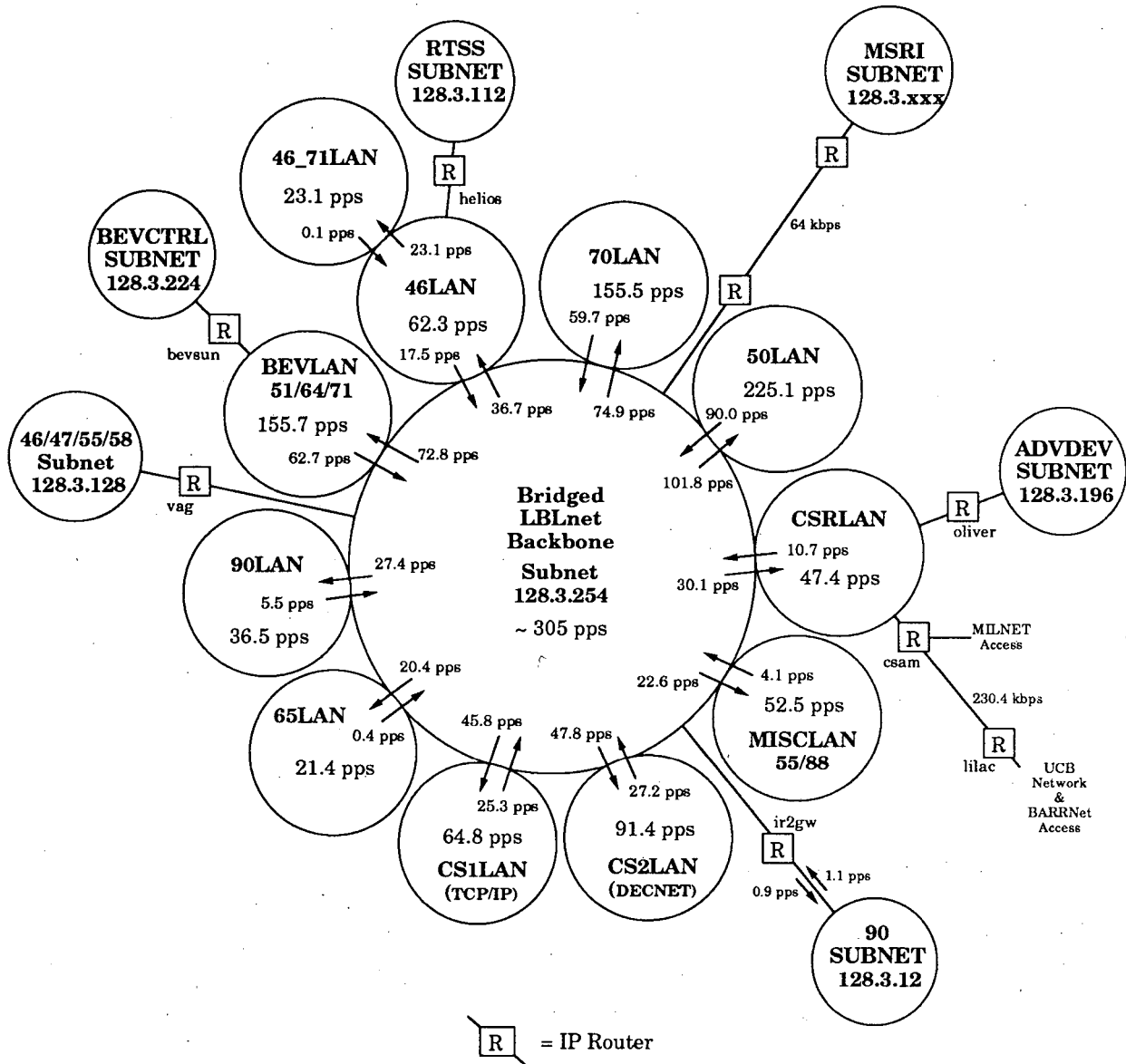
For Internet administration:
Darren Griffiths, x6966 dagg@lbl
and send a copy to ip-request@lbl

For IBM PC and Macintosh network administration:
William Jaquith, x4388 wjjaquith@lbl
or Richard LaPierre, x4692

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

Distributed Printing and Kinetics FastPath
administration and requests:
Bob Rendler, x5629 rarendler@lbl

LBL Postmaster for Lab-wide mail: postmaster@lbl



pps = packets per second; all figures are monthly averages

no figures are available for routed subnets at this time

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

Note: Each circle shown above is a separate Ethernet that is interconnected to the others via a bridge (or router if indicated) that provides forwarding of packets based on address.

LBLnet Activity February 1989

ICSD/CCR

Fink/Rogers

GRAPHICS NEWS

ALL ABOUT X - PART I

Nancy Johnston

One of the latest jargon phrases coming from computer hardware and software vendors is that "___ supports X". What is X? Why would you need or want it? How do you use it? What systems will it run on? What is an X Window Manager? What is an X toolkit?

These and other questions will be answered over the next few months in a series of articles on this subject. This month's article will describe X and why people are interested in it. Later Newsletter articles will address the other questions.

X or the X-Window System is a network-transparent window system designed at MIT as part of Project Athena. With X you can be running your application on one computer system, and that application can open a window (or many windows) on a workstation running X or X Display terminal running elsewhere on the network. X lets you control your application code by sending mouse or keyboard input back to your program. For example, in the near future, you could be running your interactive modeling program on one of the VAX Cluster machines. That application could open a window on your Sun 3/50 and plot a series of graphs. You could use the mouse on the 3/50 to send back coordinate points of interesting areas to the program running on the VAX for further processing.

X is an industry standard. Recently, many hardware and software vendors have joined with MIT to form the X Consortium which administers the release of the public domain X Window System code, as well as the contributions of the various supporting vendors. Membership includes Adobe Systems, Apollo Computer, Apple Computer, DEC, IBM, Hewlett Packard, Sun Microsystems, etc. X runs under UNIX, VAX/VMS, MS/DOS, MACos, etc.

Because it is the first "standard" window system, is distributable, and can run on a variety of hardware platforms, X is desirable to a wide-range of people. Applications were difficult to port before if they made heavy use of vendor-specific buttons, dials, scrollbars, and other interactive user interface schemes. Each vendor had its own non-portable window system that was totally different from another vendor's system and in some cases impossible to port to another environment (e.g., MACos). Now this task is not only possible but easy. It's not perfect yet, and we will discuss this in a later article.

X11R3 is the current release of X. The 11 denotes the version number. A version is changed only when the X protocol is changed. The R3 denotes the release version. Release versions can contain bug fixes, new routines, etc. Release versions cannot change the X-protocol.

X was designed to be extensible. Currently graphics are supported with 2D primitives but a 3D extension (called PEX) design has been accepted by MIT and is currently being developed. Another extension, the ability to handle Display PostScript, is being considered.

X is divided into a client and server relationship. Your application is the client. The X server runs on the machine that provides a bit-mapped display (color, monochrome, or greylevel). The server acts as an intermediary between you and the display. It can handle multiple-client requests to the same window or to different windows. The client and server can communicate over any reliable fast communication medium, e.g., Ethernet, serial line, shared memory, or pipes. The last two are used if both the client and server are running on the same machine. The X protocol is asynchronous and the client and server can be sending information to each other simultaneously. Currently, when X is running over LBL's Ethernet, it uses either TCP/IP or DECnet as the Ethernet protocol.

Basically, what happens is that your application generates requests to open window(s), manipulate them, and display information in them. You get notified by the server when the user at the display has generated keyboard or mouse input, resized the window, iconified it (temporarily made it smaller), etc. Based on what happened, your application (or the program you are using) acts on that information. The program can also make a request to ignore certain kinds of input.

An application does not generate the X-protocol directly, but uses an interface library called Xlib. Because Xlib itself is still very low level, a variety of higher-level interfaces have been written. These higher-level libraries are called toolkits. A toolkit has the code necessary to create useful items (called widgets or gadgets). The widgets or gadgets can be things like a button, scrollbar, or dial box. They are much simpler for the application programmer to use. In next month's article we'll start talking about toolkits.

If you'd like more information about X, there are articles and books available. The USENET NEWS topic for X (rn) recently had a bibliography posted to it, and I will redistribute it to interested parties. The Computing Services library also has a few copies of a very good 3-volume book on using Xlib and the uwm window manager. Interested parties can look that over and buy it. One copy is available for loan.

Forward comments and questions to me at x5093 or

VMS Mail lbl::NEJohnston

Unix or NEJohnston@lbl.gov
Software Tools Mail

SOFTWARE UPGRADE FOR TELLAGRAF AND DISSPLA

Claudette Lederer

As of April 15, 1989, the logon versions of both Tellagraf and Disspla will be upgraded:

- The logon version of TELLAGRAF will be V 6.1
- The logon version of DISSPLA will be V 10.5.

You can access these newer versions before April 15, if you wish. Use the following migration symbols at the system prompt:

SETUP_NEWTAG (for TELLAGRAF)
SETUP_NEWPLA (for DISSPLA)

As you migrate to these new versions you will need to make the following changes:

TELLAGRAF users: we advise you to remake your TAGPRO.DAT files. Here's one way:

- Rename your current TAGPRO.DAT file to, say, TAGPRO_OLD.DAT.
- Then run TAG, and when you answer the prompts for your Primary and Secondary devices, a new TAGPRO.DAT file will be created for you.

DISSPLA users: you'll need to relink your programs. The linking procedure has been simplified to the statement

LINK your_prm,'DISSPLA'

On April 15, 1989, there will be migration symbols to run the old versions of these products, but we don't expect that you will need to do this:

- To run TELLAGRAF 5.1, type
SETUP_OLDTAG
at the system prompt
- To run DISSPLA 9.2, type
SETUP_OLDPLA
at the system prompt

After a short time, we plan to remove these old versions. Contact me if you find you must continue to use either of them (TELLAGRAF 5.1 or DISSPLA 9.2).

Forward comments and questions to me at x6945 or

VMS Mail lbl::CELederer

Unix or CELederer@lbl.gov
Software Tools Mail

UNIX NEWS

SUN NEWS

Dave Cleveland

✓ **A SPRING PROMOTION** (until June 30, 1989) on all current products for education customers is being offered by Sun's Education Products Division. This means discounts for LBL ranging from 33% to 43%:

Order Size (list Price)	Discount Offered
\$30,000 - \$69,999	36% (normally 33%)
\$70,000 - \$99,999	40% (normally 33%)
\$100,000 -	43% (normally 33%)

✓ **SUN'S NEW WINDOW-BASED DESKTOP DOCUMENT APPLICATIONS**, *SunWrite*, *SunDraw*, and *SunPaint*, provide Sun users with low-cost WYSIWYG (What You See Is What You Get) document preparation software.

- *SunWrite* is for multifont text processing and page layout.
- *SunDraw* is for object-oriented graphics.
- *SunPaint* is for creating and editing raster images.

All three are based on the OPEN LOOK graphical user interface, so the screens "look and feel" the same, whether you're working with text or creating charts or illustrations. You can easily "cut and paste" text and images between *SunWrite*, *SunDraw*, and *SunPaint* programs in different windows. Sun's window-based desktop document applications support all PostScript output devices, and let you import graphics using the encapsulated Postscript (EPS) data standard. Like all Sun software products, they run on all Sun hardware platforms.

SunWrite

SunWrite gives you text processing, document formatting, and page composition capabilities in one package. You can create everything from memos to graphics-intensive newsletters and presentations without having to switch between programs. Because it is a WYSIWYG application, text and graphics will look the same in your printed documents as they do on your workstation screen. Using *SunWrite's* style sheets, you can define and store collections of text and paragraph attributes to maintain a consistent style in your documents.

SunWrite lets you choose from all the LaserWriter Plus fonts. You can produce text in any point size from 4 to 72, and can change typefaces to italic, bold, or bold italic. You can set text in small capital letters, and can include subscripts, superscripts, underlining, double underlining, or strike-through text in any document. *SunWrite* also gives you many professional features including up to ten columns per page, widow and orphan control, leading

and kerning control, and support for gray text and backgrounds.

SunWrite has a powerful search-and-replace capability, and allows "wild cards" in search fields, so you can quickly search for and replace any given word or phrase. *SunWrite* also checks your spelling using the Merriam-Webster dictionary from Proximity.

SunDraw

SunDraw lets you create any type of image, from a simple line drawing to a complex layout. You can use *SunDraw* graphics anywhere you need precisely drawn illustrations, figures, charts, or diagrams. Using *SunDraw*, you can create shapes including polygons, precise curves (called Bezier curves), rounded rectangles, ellipses, circles, and arcs. You can use a different line width, pen style, and fill pattern for each shape, and can add arrow heads to the ends of any type of line. *SunDraw* also lets you "zoom in" on areas of your screen, if you need to work in finer detail, and "zoom out," for a broader perspective.

SunPaint

SunPaint provides all the tools you need to create and modify raster image artwork using brushes, patterns, and painting modes. You can use *SunPaint* images to enhance memos, reports, and letters, and to create dynamic presentations and overhead transparencies. Using *SunPaint* is a lot like painting on canvas: you can draw the same kind of objects as you would using *SunDraw*, but with 24 different brush styles. Like Sun's other desktop document applications, *SunPaint* includes pin-up menus, so you can keep your brushes and patterns in sight and within reach while you work on your canvas. You can also use *SunPaint* to retouch scanned images such as sketches, photographs, or artwork. Because the pictures you create in *SunPaint* are saved in raster file format, you can use them with any other application that accepts raster files, including *SunWrite* and *SunDraw*.

LBL prices:

for <i>SunWrite</i>	\$486.50
for <i>SunPaint</i> or <i>SunDraw</i>	\$346.50
for all three	\$696.50

Volume discounts and an education site license are also available.

✓ **FPU2, THE NEW FLOATING POINT ACCELERATOR FOR SUN-4 WORKSTATION FAMILY**, boosts floating point processing performance on all members by as much as 100 percent or more. This add-on board allows SPARC-based Sun-4 workstations and servers to process at speeds up to 2.2 MFLOPS (million floating point operations per second), as measured by single precision Linpack benchmarks.

FPU2 implements a faster division operation and performs square-root functions in hardware. The FPU2 includes a Sun-designed gate array controller and the TI 8847 floating-point processor from Texas Instruments. The FPU2 co-processor board easily fits into a socket on the Sun-4 CPU board. All existing Sun-4 applications that run on the current FPU will run on the FPU2 without requiring any software changes. However, certain applications will achieve their greatest improvement in speed if they are recompiled to execute the square-root function in hardware.

For the Sun-4/260 and Sun-4/280, FPU2 will be offered in new systems as a replacement for the current FPU at no additional charge. It will also be bundled into all new Sun-4/110 packages at no change in price. The board is available immediately.

✓ **\$1,500 BUYS 4MB OF EXTRA MEMORY** with new Sun3/60 and Sun386i orders. This is a 44% savings over list price.

✓ **SUN ANNOUNCES XVIEW TOOLKIT** which gives SunView developers an easy way to port their applications to the OPEN LOOK user interface standard and the X.11 window standard (will ship Q3).

✓ **TEMPEST SYSTEMS** are available for 3/60, 3/260, 4/110 and 4/260.

✓ **SUN MODULA-2 V2.1**, with several new features, is now available for the Sun-3, Sun-4 and Sun386i workstation

✓ **OBJECT-ORIENTED LANGUAGE EXTENSION** for SunCommon Lisp is now available in a public-domain implementation from Xerox PARC. This is shipped with the SunCommon Lisp tape along with a Sun Symbolic Programming Environment interface.

✓ **SUN EDUCATIONAL SERVICES** offerings include

- The **SunOS Internals** course that will cover the kernel and its services (two 3-day sessions begin on May 15 and June 19).

- A 5-day **System Administration** course for SunOS 4.0 on Sun-3s and Sun-4s beginning on Monday of almost every week of the year.

- A new course on the **Administration of the Sun386i** (three 4 day courses begin on April 25, May 30, and June 27).

- Eighteen courses, offered on a regular basis, in Milpitas alone.. For more information call 1-800-422-8020.

✓ **INTERLEAF HAS PORTED TPS 4.0 publishing software** to the Sun386i.

✓ **SCHLUMBERGER GRAPHICS** announces a new **A & B size postscript printer** and **D & E size plotters** that work with all Suns.

For more information on Sun products, call Mitch Beard at x5781 or send electronic mail to

mbeard@ux1.lbl.gov

If you have other questions or comments, please contact me at x5336 or send electronic mail to

VMS Mail

lbl::DHCleveland

Unix or
Software Tools Mail

DHCleveland@lbl.gov

GENERAL NEWS

MATHEMATICA DISCUSSION MEET SCHEDULED FOR APRIL 20

Martin Gelbaum

If you are using *Mathematica*, or if you would like to know more about it, plan to come to a meeting at LBL to exchange insights and information.

Time: ... Thursday, April 20, from 2:30 to 4:30 PM

Place: ... Bldg 50B, Rm. 2222 (The Brown Room).

(This meeting is a re-scheduling of the March meeting, cancelled because of a conference conflict.)

Mathematica is a general system for doing mathematical computation by computer. Some of its features include

- ✓ numerical computations: many common functions, matrix operations, curve fitting, Fourier transform, and integration
- ✓ symbolic computations: expansion and factoring of formulas, differential & integral calculus, symbolic matrix operations, tensor & list operations, and variance
- ✓ graphics: two-dimensional contour and density graphs, three-dimensional contour and surface graphs, and wireframes and shaded surfaces
- ✓ an interactive, symbolic programming environment.

Forward comments and questions to me (x4749) or

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

LBL SPECIAL INTEREST GROUP ON SOFTWARE ENGINEERING

Dennis Hall

An LBL special interest group is being formed on the topic of software engineering. Its goals are:

- (1) To establish a core of expertise in software engineering tools and methods at LBL.
- (2) To evaluate the usefulness of these tools in the Laboratory computing environment.
- (3) To distribute the knowledge and experience gained to the rest of the Laboratory.

Participation is open to anyone. Individuals who are using or planning to use software engineering tools or methods in their software development tasks will describe their activities to the group along with the tools they are using or planning to use. Their experience will be collected to provide an evaluation base for existing software engineering products.

The group will also devote time to structured "walkthroughs," "inspections," "milestone reviews," and the like. This will provide experience in modern software development methodology. It will also add to the evaluation base.

The group will arrange for occasional software engineering colloquia, and will meet to review experience with products as needed.

INTRODUCTORY MEETING

An introductory meeting is scheduled for Wednesday, May 3, at 10:30 AM in the Bldg. 50F Conference Room.

Forward comments and questions to me at x6053 or

VMS Mail	lbl::DEHall
Unix or Software Tools Mail	DEHall@lbl.gov

ELECTRONIC MAIL ETIQUETTE

Alice Brzovic, UC Berkeley

(This article is excerpted with permission from the Berkeley Computing Quarterly, Vol. 1, No. 1, Spring 1989.)

Your office may have a standard format for internal memos, but does it have one for electronic mail? Probably not. Since electronic mail is a relatively recent development in communications, a standard of usage has not been chiseled in stone. Users simply learn by doing.

Several recent articles have examined electronic mail courtesies and customs. Here are some of the suggestions mentioned in these articles. You might want to consider them the next time you use electronic mail.

- **Messages should be concise.** Too much information in one message is a burden on recipients. Screens are more difficult to read than printed letters on paper. Often they have poor resolution and limited scrolling capability. Also, the person reading your mail may have a limited facility, e.g., slow modem, small screen, or old and clunky terminal.
- **Layout is important.** Clean, well-laid-out messages will be easier to read and more effective at conveying what you have to say. Screens make it easy to play graphically with text. While this may be amusing, effective communication should be your first goal in using electronic mail.
- **Keep your discussion focused.** If a new topic is introduced it should be under a separate message with a new subject heading. Unfocused messages will be less effective in conveying necessary information.
- **Label your subject clearly and uniquely.** Unique subject headings make for easy filing, cataloging, cross referencing, and retrieval. Avoid subjects that are too general, such as "my comments".
- **Good subject headings also help recipients prioritize reading their messages.** Some people are at the receiving end of a lot of mail. Unless the subject is clear, interesting, and purposeful, they most likely will postpone reading it.
- **Refrain from using electronic mail for unnecessary broadcasting.** Limit your distribution list, if possible, to the people who need to know what you are discussing. No one likes junk mail. Chain letters, for example, are an inappropriate use of electronic mail and can cause excessive loading of mail facilities.
- **Pay attention to the distribution list before forwarding received mail to someone else.** The recipient might have several copies of that item already. . . . On the other hand, be sure to copy others who may be affected by your message, or who may have information or suggestions to add.
- **Don't expect instant response to your mail.** Not everyone anxiously awaits your message. Although they may have accounts, some people don't check them very often, or even use them. If you are uncertain of a recipient's electronic mail habits, or are not getting any response to your messages, a phone call or memo may be quicker and more effective. Electronic mail is not always a replacement for other communication tools.
- **Assume the messages you send and receive are permanent,** although they may seem temporary. Don't say anything in electronic mail you might not want to appear in your newspaper. You may be discreet, but the person receiving the message may not be.
- **State where you are getting your information, even if you are paraphrasing.** If you are sending information from another source, pay attention to copyrighted material. Copyright laws apply to electronic mail as well as to printed media.
- **Do not alter text, but clearly and correctly mark text that is not your own.** Alterations of a text could confuse the original meaning and embarrass the author.
- **Don't forward confidential mail to others without first obtaining permission.**
- **Be aware that electronic mail might not be as private as you wish** (it works through shared technology). If confidentiality and privacy are very important, it may be advisable and more appropriate to use other communication methods.
- **It is best not to rush writing your messages.** Remember that the recipient will have plenty of time to go over your message. Take advantage of text editors and spelling checkers to compose your text before sending it. This will give you time to organize your thoughts and make sure your text is accurate.
- **Use simple English to get your meaning across.** Carelessly-written electronic mail can be misinterpreted.
- **If you are sending mail to users of a system that is different from yours, remember they may not understand terminology that is quite familiar to you.**
- **Consider sending explanatory attachments to less experienced recipients** — instead of burdening everyone with details — if you are sending to readers with varying levels of expertise.
- **Try (however), to refrain from adding too many attachments to your electronic mail.** Large bulky messages tie up the network and are difficult to read and digest.
- **Avoid trivial responses unless you really have something important to say.** It is not necessary to respond to everything you receive.

- **Take time to comprehend what is being written before responding**, especially if the message makes you angry. The diversity of backgrounds, cultures, opinions, and writing abilities in electronic mail users sometimes make understanding difficult. If you don't understand a particular item, let the sender know rather than jumping to incorrect conclusions.
- Remember that you are not interacting with a machine, but with someone who is as sensitive as you are.

References

If you would like to read more on electronic mail etiquette, see *Towards an Ethics and Etiquette of Electronic Mail*, by Robert Anderson and Norman Shapiro, Rand Corporation, July 1985.

THE HELP DESK

QUEUEING UP

Lam Wong

In the interest of promoting best use of computing resources and optimum turnaround on the cluster, we offer the following suggestions:

- **Good Citizenship**

We'd like to encourage users to submit (numbers of) concurrent long batch jobs to **just one or two nodes** on the cluster (e.g., "CSA5_ECONOMY" "CSA3_STANDBY") at one time, so that other users can still use the rest of the machines on the cluster.¹

- **Balancing the Load**

We'd like to encourage users to submit jobs to generic queues unless a particular job *must* run on a specific machine. Jobs submitted to "BATCH\$ECONOMY," for instance, are distributed evenly across the queues, and would be executed on a first-come, first-serve basis, as a slot opens up on the cluster's economy queues — in other words, in good time. When a job is submitted to a particular queue, it may be stuck behind a bunch of other jobs queued there, waiting for execution, even though the queues for the other nodes might be vacant.

Forward comments, and questions to me at x4786 or

VMS Mail lbl::LHWong

Unix or LHWong@lbl.gov
Software Tools Mail

TRY UNIX

ON YOUR NEXT BIG PROJECT

Marv Atchley

Planning a new application? Think about using Unix.

If you are planning to write a new program that will require a significant amount of CPU cycles, you may wish to consider Unix instead of VMS. The CSA cluster is almost saturated, and we have considerable unused Unix capacity.

Because of free-market competition among Unix hardware manufacturers, Unix CPU cycles have become at least an order of magnitude less expensive than VMS. For this reason, it is possible that the next major expansion of CPU cycles for the Computer Center will be Unix, even though the large base of VMS applications at LBL require us to support VMS indefinitely.

Forward comments and questions to me at x5455 or

VMS Mail lbl::FMAtchley

Unix or FMAtchley@lbl.gov
Software Tools Mail

¹When we recently reduced charges for committed users on ECONOMY Batch and STANDBY Batch, some users quickly submitted many long simulation jobs to ECONOMY queues on all nodes. Because only 2 ECONOMY jobs can run on a node at one time, the queues went into near gridlock.

PHYSICS NEWS

Werner Koellner

- **PHYSICS UTILITIES**

Access to the Physics Utilities, including the CERN Library, the PAW (Physics Analysis Workstation) Library, and the various Physics Utilities HELP Libraries is available after executing the DCL command

@Physics\$Manager:Setup_Phys

We recommend that you include this line in your Login.Com file.

- **HELP**

When you type

Help @Physics_Utilities

you'll see a list of utilities for which help text is available under "Additional information available". You may also type

Help 'subtopic'

where 'subtopic' is one of the utilities listed, to get help directly on a particular utility.

New and Updated entries are: PAW and TOPDRAWER.

- **CERN LIBRARY**

Object libraries are updated at unpredictable times. Changes are documented in the CERN Computer Newsletter, and sometimes also in the directory **Cern\$Inform**. In some cases, a previous version of an object library is available as **xxxxx.OLD**. The following Object Libraries have been updated recently:

COMIS Version 1.05
 GRAFLIB5 (Hplot Vers. 5.04/13,
 Higz [mgks],
 Tvvax [mgks],
 Gkspack)
 HIGZ Version 1.06/05
 HBOOK4 Version 4.05/02
 HIGZ_ATC (LBL Version 1.6)
 HIGZ_DI3000 Version 1.06/05
 HPLOT5 Version 5.04/13
 KUIP Version 1.60/03
 PACKLIB (Ffread Vers. 3.06)
 PACKLIB4 (Hbook4 4.05/02,
 Ffread 3.06)
 PAW Version 1.05/03
 PAW_ATC LBL Version 1.6
 SIGMA Version 1.00/01
 ZEBRA Version 3.59/12

- **GEANT**

GEANT, a system of detector description and physics simulation tools, is available as part of the CERN Libraries. For novice users, a collection of sample programs is available.

Version 3.12.25 is the default version. The logical name **Cern\$Geant_Lib** points to the appropriate object library file. The files **GEANT310.*** have been removed. The recommended link procedures are **Cern\$Library:Geant.Lnk** using **GEANT.OPT**. Please type

HELP GEANT

for additional information.

- **PAW**

At LBL, the program **PAW** is primarily being maintained in the full GKS version, named **PAW_ATC**, although the mini-GKS version as well as a DI3000 version, are also available. **PAW_ATC** uses the ATC-GKS interface, whereas **PAW_DI3000** uses the Precision Visuals DI3000 interface, which can be used only on CSA2. Both versions make a large number of output devices available to the user.

Standard executable programs of **PAW_ATC**, **META-PAW**, **PAW_DI3000**, as well as **PAW**, are available in **PAW\$LIBRARY**. If desired, users may link their own versions by using or modifying the procedures **PAW\$LIBRARY:PAW_ATC.LNK**, **PAW_DI3000.LNK**, or **PAW.LNK**.

These procedures use corresponding linker options files, e.g., **PAW_ATC.OPT**. With **PAW_ATC**, graphics output may be directed simultaneously to the screen and to a Metafile for subsequent processing via the program **METAPAW**, and also simultaneously, and selectively, to a **POSTSCRIPT** file.

Most recent improvements are documented in files **Cern\$Inform:Paw.News***. The latest of these is **PAW.NEWS1052**. An updated **PAW Manual** (dated Sep. 13, 1988) is available from the Computer Center Librarian. A new general **Users Manual** should become available shortly. **NOTE: PAW_ATC needs to be relinked for running on machines using VMS 5.x.** A standard executable for VMS 5.x is available in **Paw\$Library:Paw_ATC.VMS5_EXE**. Type

HELP PAW.

for additional general and detailed information.

- **HIGZ_DI3000**

The HIGZ graphics interface is now available for interfacing with the DI3000 graphics package. Note that DI3000 is available only on CSA2. To see the requirements for linking and running HIGZ with DI3000, please see the files and procedures

Cern\$Library:Higz_Di3Exam.For,
Higz_Di3Exam.Com, and **Higz_Di3Exam.Run.**

The appropriate object library is **Cern\$Library:Higz_Di3000.Olb.** Independent linking can be done using **Cern\$Library:Higz_Di3000.Lnk.**

- **TOPDRAWER**

As previously announced, a more recent, and versatile version of TOPDRAWER, a graphics and data analysis program, supported as part of the Physics Utilities has been obtained from John Clement of Rice University. It is still under further development here at LBL. New additions are

- drivers for output destined for the IMAGEN,
- a driver which produces output for POSTSCRIPT devices in their native language (ADOBE),
- a set of shorthand device mnemonics for the command SET DEVICE.

A preliminary user manual is available in **TOPDRAWER\$LIBRARY:TOPDRAWER.DOC,** and may be printed on any hardcopy device. For more info, type

HELP TOPDRAWER

- **PROBE_LIBRARIES**

Probe_Libraries is a command procedure, available as part of the miscellaneous Physics Utilities. It allows you to examine all entry points in all libraries referred to in a series of linker options files. It lists all entry points in all libraries, as well as repeated entry points among the libraries. For information type

HELP MIS_PHYS

- **SWING**

Swing is a VAX/VMS utility for graphical display, and for moving about in a directory tree. It allows you to rename, move, and delete subdirectories. This program is part of the miscellaneous utilities. For details type

HELP MIS_PHYS SWING

- **POISSON**

POISSON contains four main programs and subroutines to solve the Poisson or Laplace Equation in 2-dimensional space, primarily for Magnet Design applications. To link one or all of the programs FORCCR, LATTCT, POISCR, or TRIPCR, use the procedure

@Cern\$Library:Poisson.Lnk

A sample program may be executed by typing:

@Cern\$Library:Poisson.Tst

This is still under development, particularly with respect to a DI3000 version.

Forward comments and questions to me at x4389 or

VMS Mail lbl::WOKoellner

UNIX or WOKoellner@lbl.gov
Software Tools Mail

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:

Does LBL have a users' manual for *mathematica*, and if so, where do I find it? I suspect that the program would come in handy in a project I am working on. Also, is there on-line documentation or a tutorial?

RESPONSE:

Computing Services offers a beta release of *Mathematica* on UX1, a Sun 3/280.

You can get a brief tutorial on the use of *Mathematica* from the shelves by the Help Desk in 50B/1275; further, "man math" on UX1 gives a barebones introduction to the program. The fundamental text on *Mathematica* is "*Mathematica - a System for Doing Mathematics by Computer*" by Stephen Wolfram, Addison Wesley, 1988. This book is available through the Computing Services Library, x4242.

The LBL Computing Newsletter will report updates and so on.

MESSAGE:

Is a version of *lisp* or some *lisp*-like language available on CSA? thanks.

RESPONSE:

There is Franz *LISP*, opus 42, running on CSA. It will probably be there when we move to Version 5.x as well. You should have the following symbols defined:

```
$ lisp ::= $franzexe:vmislisp vmslisp
$ liszt ::= $franzexe:vmsliszt vmsliszt
```

MESSAGE:

Many years ago, the LBL computer center used to have files of world geographic coordinates for drawing maps. Are these still available and how can I get them?

RESPONSE:

The NCAR graphics package on the VAX cluster and UX1 and UX3 has a geographic database. You can draw the continents with or without country boundaries and the United States with or without state boundaries. Large lakes are also drawn. A variety of map projections are available in NCAR if you also need the drawing routines.

On the cluster, see HELP GRAPHICS NCAR for more information.

MESSAGE:

Are there any plans to support X11 on the cluster?

RESPONSE:

The basic answer is yes, but I am sure the question is more detailed. For example, X11 is supported by DEC under VMS Version 5.1, which will be brought up on the cluster in late May. I am sure that *DECnet* is the supported transport mechanism for X11 (and not initially TCP/IP). The toolkits that DEC distributes include Xt and the *DECWindows* toolkit. Other toolkits could probably be brought up by us, or you, depending on the time involved.

MESSAGE:

I have some .COM files on CSA that run automatically every day. These jobs run *Tell-a-graf* programs which means they must run on either CSA1 or CSA4. They are now "hard-wired" to use CSA4. When CSA1 or 4 is down (i.e., for maintenance), is there a way my programs can test to see which of CSA1 or 4 is up and submit the job on the machine that is available?

RESPONSE:

Try adding the following to your .COM files:

```
$ ON ERROR THEN GOTO try_csa2
$ IF F$GETSYI("NODENAME","CSA4") .EQS. -
  "CSA4" THEN SUBMIT/
  QUEUE=CSA4_NORMAL
```

MESSAGE:

I have a question about batch jobs submitted to the VAX cluster. What happens if I have several batch jobs going on at the same time creating and deleting a file with the same name in the same directory? Is the creating/deleting process specific or is there a possibility that I will run into problems? The file in question is used as a temporary file to create text for a mail message which is subsequently sent out during the batch jobs.

RESPONSE:

A common method used to create a "unique" file name is to get your process identification number, and tack that number onto the base name of your file:

```
$ temp_mail_file = "temp_mail" + ""F$GETJPI("",
  "PID")"
```

Then, refer to the temporary file by the symbol "temp_mail_file", as in

```
DELETE/NOCONFIRM 'temp_mail_file'
```

(The single quotes are required to tell DCL that "temp_mail_file" is a symbol.)

Thus, various batch jobs can create and delete their own

mail files without conflicts because each batch job is a separate process.

MESSAGE:

If I override the cpu time limit default in a batch queue (say BATCH\$ECONOMY), and specify several hours for CPUTIME, will my job run at a lower priority than others with shorter CPUTIME limits in the same queue? In other words, does it pay to estimate the cpu time needed for a job carefully? I've been playing it safe by estimating the cpu time needed and then doubling it, and I'm afraid my jobs run too slowly as a result.

RESPONSE:

The value of /cpudefault or /cpulimit of a job/queue does not influence scheduling priorities. Thus, how fast your job runs has nothing to do with how you specify those values. Jobs in any given batch queue are started in the same order they are submitted.

MESSAGE:

I would like to access ARPAnet open bulletin boards. As of now, I'm using some of the CSA cluster e-mail resources but not much else. I'm fairly well up-to-speed with my personal computer and this communication package. Can you suggest a plan of action?

RESPONSE:

On CSA, there is a program called "tc" for "teleconference"; the command "man tc" explains how to use it. The command

```
dir st_root:[msg.tc].tc
```

shows the teleconferences online, some of which have restricted readership.

MESSAGE:

I fingered someone's account and it said
New mail received Thu Mar 2
unread since Mon Mar 13

I am used to finding the "unread since" date earlier than the "new mail" date. Does this message mean the person logged in last on March 13 but didn't read his/her mail?

RESPONSE:

Yes, this does mean that the user was logged in on March 13 but did not read e-mail received on March 2.

MESSAGE:

Why can't the MFE command tell me what is going on at the NMFEC? When I type "MFE" or even "MFE/full", all I get is some information what seems less than useful. For example, often the system is very bogged down or it takes a great deal of time to NETOUT a file.

I assume that the problem is at the NMFEC end since our VAXes are perfect! But, it shouldn't be a difficult task to get network information (speed, etc.) from both ends. It would be nice to know how things are going and which machine is up.

RESPONSE:

According to MFE, there are no plans to implement a VAX-based program by which a user on our cluster can tell the state of the MFE Crays. The best way to tell whether a given Cray is running is to login to that machine.

A variety of problems have made the MFE Crays unreliable to date:

1. Hardware and software problems with the disks for the Cray 2's, many of which have supposedly been fixed.
2. One of the Cray 2's (the B machine) was the first of its kind ever built, and therefore is more buggy than later versions.
3. The machines are very heavily loaded, with up to 160 jobs at a time running on them.

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

UP FRONT

[26.4.1]

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
Software Tools Mail: WKSG@lbl.gov

We hope this alternative (to the telephone) will help users with problems or wanting to share helpful hints.

[26.4.2]

WHERE WE'RE AT

The Workstation Laboratory, home of several Workstation members as well as the Workstation Lending Library, is located at Bldg. 50B, Rm. 2231. It's open from 8 AM to 5 PM Monday through Friday. We're here to help; call us (x6858).

[26.4.3]

MATHEMATICA MEETING RESCHEDULED FOR THURSDAY, APRIL 20

Due to a conference conflict, the *Mathematica* Discussion Group (originally set for March 23) has been rescheduled for Thursday, April 20 from 2:30 to 4:30 PM in Bldg. 50B, Rm. 2222 (The Brown Room). If you are using *Mathematica*, or if you would like to know more about it, plan to come to this meeting to exchange insights and information.

[26.4.4]

MAC DEMO APRIL 4

Representatives from Apple Computer, Inc. will be at LBL to answer questions and help with hands-on demonstrations of their new products.

- Macintosh IIcx
- Apple Two-page Monochrome Monitor
- Apple Macintosh Portrait Display
- Macintosh SE/30.

TIME: 10 AM through 1 PM
Tuesday, April 4, 1989

PLACE: Bldg. 70, Rm. 191
(The Conference Room)

Please stop by the Conference Room to try out these new products. For additional information, contact Bruce Burkhart (x6858).

[26.4.5]

DEMO APRIL 19: REAL-TIME SIGNAL ANALYSIS ON THE MACINTOSH

Representatives from Spectral Innovations will be at LBL to demonstrate MacDSP, a floating-point DSP (digital signal processor) board that turns a Mac II into a real-time workstation.

Time: 10 AM Wednesday, April 19

Place: Bldg. 70A, Rm. 3377
(The Conference Room)

The NuBus interface board uses AT&T's DSP 32 floating point processor chip and data acquisition modules mount directly onto the processing board. The presentation will address the design features of the board, followed by a live demo of the three levels of software available. Software includes:

- a C compiler for developing custom algorithms;
- an application library of over 100 routines for a variety of signal processing functions;
- a low-level assembler for time-critical applications.

For more information, contact Richard LaPierre (x4692).

[26.4.6]

TRADING POST

Items advertised here are for Laboratory use only and must be purchased with a valid account number. Unless we hear from traders, items will be listed here just once. For more information about these ads, contact Bruce Burkhart, x6858.

1. **For Sale:** Apple ImageWriter LQ Printer, almost new. Price: negotiable. Contact: Don Hopkins, x6627.
2. **For Sale:** Diablo 1640 Daisy-Wheel Printer (IBM-DOS environment), good condition. Price negotiable. Contact Richard LaPierre, x6858.
3. **For Sale:** Diablo 630 Daisy-Wheel Printer (IBM-DOS environment), good condition. Price negotiable. Contact Richard LaPierre, x6858.
4. **Wanted:** 20 MByte External Hard Disk with cable for a Mac Plus computer. Reasonable price. Contact: Chuck McParland, x6956.



[26.4.7]

IBM-PC TRAINING AT LBL

This month, the Workstation group will begin conducting some training classes for IBM PC users. Initially, we're offering the following:

- Microsoft's *PC Word*
- Introduction to DOS
- File transfer and terminal emulation using *Kermit*
- Using the IBM-PC as a terminal for electronic mail.

We hope that these proposed offerings will meet the needs of our IBM-PC users. A schedule of the classes and enrollment information is given on Pg. 3 of this issue.

The classes will be held in ICSD's Terminal Room (Bldg. 50B, Rm. 1237). (Schedule is posted there). The IBM PC-XTs as well as the VT 240 terminals in the room are available to all LBL employees when there are no classes in session. For more information, contact Carole Casaretto, x6858.



[26.4.8]

TIMELY TIP: SPRING AHEAD

Hey there, PC users: Daylight Savings time is coming. Don't forget to Spring Ahead on Sunday, April 2 (at 2 AM, if you're up).

- (1) **PC-AT Owners:** you have to run the Setup program to set your clock. The program is on the Diagnostics disk supplied with your system. The disk is usually stored in the rear of the Guide to Operations manual.
- (2) **PC-XT Owners:** if you have a standard AST Board, you run the AST-supplied program SETCLOCK.COM as follows:

```
C> SETCLOCK <cr>
```

It will respond

```
resident DATE/TIME processor loaded
```

```
Current date is 4/02/89
```

```
Current time is 02:01:22.07
```

Now, issue the following DOS Time command

```
C> time <cr>
```

It will respond with the current time and prompt you to enter the new time.

```
Current time is 02:01:22.07
```

```
Enter new time; 03:02 <cr>
```

While you're in SETCLOCK, you can also change the date, if you so desire. Issue the following DOS Date command

```
C> date <cr>
```

It responds with a date and prompts you to enter the new date.

```
Current date is Sunday 04-02-1988
```

```
Enter new date; 04-02-1989 <cr>
```



[26.4.9]

TROFFERS PLEASE NOTE:

Troff users who have their own UNIX workstations or IBM PCs with XENIX, or even DOS, may be interested in these products.

- *Sqtroff*
SOFTQUAD PUBLISHING SOFTWARE.
SoftQuad, Inc., \$1295 LBL price, UNIX/XENIX.
sqtroff expands font mapping, kerning, and font metrics support; it allows macro names of up to 128 characters and extensive aliasing; the drawing preprocessor is expanded; and there is support for reproduction of bitmap and PostScript image files. Supports mm, mv macros, and others, and has eqn, tbl, chart, and draw preprocessors.

- *Eroff* and *Eview*

Elan Computer Group., Inc., \$1795 on Sun; \$695 on DOS with one printer driver.

First of all, Elan produces the best *troff*-type documentation I've ever seen, which isn't saying a lot, but it's something. In addition, *eroff* has enhanced support for AT&T Documenter's Workbench preprocessors, utilities, and macros. Finally, and MOST IMPORTANT: *eview* allows previewing of output on the screen. If I'd had this back in the days when I was a frequent *troffer* (back before computer graphics were even invented), I might not have become a *troff*-phobic.

X-windowers may look forward to a new Elan product, *Express*, which promises something that looks a lot like WYSIWYG editing (this is a promise we cannot verify)

Contact Workstation Group member Claudia Madison (x6858) for more information



[26.4.10]

NCSA TELNET

... From RTSG's Craig Leres

As a particular lbl host moves around, its internet address changes, causing problems for people who "hardwire" internet addresses in their **config.tel** file.

For example, if you have a line like:

```
name=pistachio hostip=128.3.254.167
```

in your **config.tel** file, you will now find it impossible to telnet to pistachio since its IP address has changed to

128.3.12.50. So, when possible, it's a good idea to avoid putting this kind of information into **config.tel**. It's not necessary to include internet address information, TELNET automatically uses a nameserver to do the name-to-internet address mapping. However, to use this feature, you must type the full domain name of the host (for example, **pistachio.ee.lbl.gov**) or else utilize one or both of the features listed below.

One way to avoid having to type the full domain name of a host you wish to connect to is to create some aliases in your **config.tel** file. For example:

```
name=pistachio host=pistachio.ee.lbl.gov
```

allows you to type the simple name "pistachio" to connect to this host.

Another more powerful shortcut is to define a "default domain" in your **config.tel** file. For example:

```
domain="lbl.gov"
```

sets the default domain and allows you to use simple names like "ux1" and "csa1" without having to create aliases. In these cases, TELNET automatically adds the "lbl.gov" extension in its request to the nameserver and comes up with the right address.

When running on a Mac gatewayed through a Kinetics box to the ethernet, it is not necessary to put "nameserver" or "gateway" entries in your **config.tel** file; telnet gets this information from the K-box which gets the correct defaults from the KIP administrative host. If you use a PC or a Mac with a directly-connected ethernet interface (i.e. not a k-box) then you do need to put nameserver and gateway information in your **config.tel** file.

A copy of Telnet 2.2, along with the recommended configuration (**config.tel**) is available from the Workstation Group. It can also be copied from the WKSG1 Apple Server.

The important changes included are:

- The default zone is set to "lbl.gov"
- It has aliases for some hosts not in the "lbl.gov" zone.
- Ftp is disabled by default.
- The values for mtu, maxseg, and rwin have been determined to be optimal.
- The zone keyword specifies "" instead of a named zone. "" means "the current zone" and so it is position independent, that is, you can use the same **config.tel** from Macs on k-boxes that are in different zones.
- It has optional information useful when running telnet on a PC or a Mac with a direct ethernet card.



[26.4.11]

VIDEOS AVAILABLE AT THE MAIN LIBRARY

If you were not able to attend Roy Kerth's recent talk on "Macintosh FONTS, PRINTERS, and THEIR FOIBLES," you can view a video tape of the event. A copy of this tape is available at the Main Library Circulation Desk (Bldg. 50, Rm. 134, x5621). The Library also has a portable color cassette player available for viewing cassettes.

The Library can also lend you a video tape of the recent NeXT demo and the New Word 4.0 Features presentation



[26.4.12].

TIMELY TIP: **SPRING AHEAD**

MAC Users. Daylight Savings time is coming. Don't forget to Spring Ahead on Sunday, April 2 (at 2 AM, if you're up). To set your clock:

- (1) Select the Apple icon.
- (2) Go to Control Panel
- (3) Click on the hour in the Time Window.
- (4) Click once on the up arrow.
- (5) Click on the Clock icon.
- (6) Close



[26.4.13].

WHICH MAC TO BUY: APRIL 2, 1989

With the introduction of the new Mac SE/30 and Mac IICx, there may be some questions concerning what to buy, now. Price is always important, but performance and possible compatibility may be key to your needs.

With the recent flood of new Apple products and their frequent cost updates, your Workstation Group staff is continually evaluating the best prices and system configurations.

Stop by the Workstation Lab (Bldg. 50B, Rm. 2231, x6858) to pick up our current recommendations on purchases of Macintosh computer systems.

Besides price, other important factors to consider when planning your purchase include: memory upgrade, speed, large screens, and future expandability. Get all the facts, call us today.



[26.4.14].

HERE'S QUICKLETTER

... A Review by Ardent Advocate Bruce Burkhart

QuickLetter, from WORKING SOFTWARE, INC., Santa Cruz, 408-423-5699, retails for about \$125.

QuickLetter is touted as "brilliantly designed, nearly flawlessly implemented, and well marketed." It creates letters and envelopes and meets most needs as a Desk Accessory (DA). It is not a full-featured word processor, but it is a nice little letter- and memo-writing tool with some great features.

Besides the standard Mac text-editing tools, your *QuickLetter* DA layout can contain a logo or any other graphic as a heading. Positioning the graphic is tricky, but the folks at Working Software Inc., have assured me that a future update will correct this problem. Other features include:

- a small eye icon: click on it to go to Preview mode.
- easy text manipulation: you can move it anywhere on the page by clicking on it and dragging.
- option for printing - or not printing - the graphic or letterhead.

These are just a few of the understated and elegant features I found in *QuickLetter*.

QuickLetter does envelopes. And it prints them better than any full featured word processor yet. Envelopes can have graphic or text return addresses, and two special message areas. One at the top center and one at the lower left. This very impressive LaserWriter envelope-creation and -printing feature should put one more nail in the typewriter's coffin.

This DA also has an Address Book for name, address, and phone numbers. Information from this little database can be automatically pasted in for salutations, and addresses for envelopes. There is a fast & effective search function, and you can import address data into the Address Book from other sources.

Now for a real plus! Use *QuickLetter* within the LBL Electronic Mail system. If you are like me, typing more than a line or two in the VAX text editor is painful. Now, it's a simple Mac "cut and paste" operation. While in Versaterm, drop down into *QuickLetter* and compose your memo or letter in a less hostile environment. When finished, "cut or copy" - return to E-mail - and "paste" in your *QuickLetter* text. This operation has been tested successfully within all the E-mail systems at LBL. Now, writing lengthy messages is almost a pleasure! (Well, almost!) You should remember, however, that *SmartQuotes* are not retained when pasted in E-mail. Also, you need to use smaller-than-normal line lengths in *QuickLetter*. Lines that are too long do not transfer properly.

For formal correspondence, the Workstation Group maintains a *QuickLetter* stationery file with the UC unofficial seal and LBL address letterhead. See me for a copy. (My thanks to Mark Galvin at Working Software for his help in setting this up.)

QuickLetter ships with a working copy of *SpellsWell* (a small 60,000-word dictionary) and a demo copy of *FindsWell*. This slick DA is compatible with the MacII, IIX, and is MultiFinder-friendly.



[26.4.15]

HYPERCARD CORNER

... from Workstation member Bruce Burkhart

Merging Stacks...

Less than perfect planning of a HyperCard project sometimes means starting a new stack here, then there, and sometimes everywhere. This is particularly true if more than one person is working on a project. Putting all the pieces together can be a project unto itself.

Although a HyperCard project can consist of one or more stacks, it is more efficient to present one complete stack to a user. There are several approaches you can use when merging stacks:

1. Simply "cut & paste" one card at a time

This first method is fast and easy if you're not dealing with lots of cards, but it could present a problem or so. There is no direct way to "cut" a card from a stack A and "paste" it in as the first card in stack B. Solution:

- Paste the card from stack A as the second card in stack B.
- Then delete the first card in stack B, so that the "second" card becomes the "first" card.

This is a bit roundabout, but it works. Always remember, merged cards from stack-to-stack retain their original backgrounds. (How stack resources transfer is currently under study.)

2. Write a script to merge your stacks

If the size of your stacks precludes the one-by-one approach, write a script to merge your stacks. A "copy/paste" operation within a repeat loop is used in the sample script below. To apply it,

- create a temporary new button named "Merge" on the first card of your stack A and
- then copy the script under the mouseUp handler in the button.
- Now, click on the Merge button, and you are prompted to "Select Stack to be Merged to this Stack." When the doMenu "Open Stack..." line is executed in the handler, a "destination" dialog box appears.

- Find, and open stack B.
- When HyperCard finishes executing the script, both stacks are merged, with stack B following the last card in stack A. When you are all finished,
- remove the Merge Button.

Note: be careful, the following script does not have any "error traps" or other protections that a polished, finished script should have to protect you from ending up in a HyperCard "black hole."

```

on mouseUp — Merge Button
— This script will merge all of stack B
— behind stack A (the stack with the
Merge Button)
put the long name of this stack into stackA
Answer "Select Stack to be Merged to this Stack
doMenu "Open Stack..."
put the long name of this stack into stackB
lock screen — faster data transfer & hide card—
activity
set cursor to watch
repeat with i=1 to the number of cards
  go to card i
  doMenu "Copy Card"
  go to last card of stackA
  doMenu "Paste Card"
  go to stackB
end repeat
unlock screen
go to first card of stackA
end mouseUp

```

3. Purchase a commercial product to do the job.

Stack Cleaner by Softworks, Inc., might be a third possible alternative. This commercial HyperCard set of utilities (retail price: \$99) includes a merge-and-split stack option, and several other less useful routines. The split stack option is particularly interesting. Cards from a stack can be selected in non-sequential order and the selection is then merged into a new stack. The *Stack Cleaner* set of utilities is available in the WKSG Lending Library. Right now, we are looking at other shareware and commercial products.

THE BMUG NEWSLETTER

This month, in addition to regular HyperCard news, I would like to talk about the newly-released *Winter/Spring-1989 BMUG Newsletter*. First of all, this 384 - page "Newsletter" is really a book — if you go by weight. It's published twice a year by the Berkeley Macintosh Users Group: a year's subscription is \$40. To get on the mailing list, contact the BMUG offices, 415-549-2684.

The Newsletter is a series of articles submitted by users.

who readily express their viewpoints on virtually everything that affects them as computer users. Articles for this most recent issue include data on BMUG resources, hardware, telecommunications, hacking, information tools, and— most interesting — commentary on Apple Corp, all aspects. The Newsletter is richly endowed with lots of illustrations, and includes an informative set of Appendices.

BMUG's credo is: "We're in the business of giving away information." And that they are.

In the **BMUG Resources Section**, several articles stand out. In particular, "Choice Products," put together by "Team BMUG". Here, dozens of hardware products are listed with pros and cons about each item. Some very colorful. ("Does the fan noise in your monitor sound like an industrial vacuum cleaner sucking up a jello spill?" You get the idea.) On a more serious note however, the article on the "System 6.0 Expose" is a great one, as it nicely describes the files on the System Tools and Utilities disks, a **MUST READ**.

In the **Hardware Section**, a dozen articles cover various Mac equipment: you may find these informative, and even useful.

In the **Telecommunications Section** there is a complete list of the Bay Area Bulletin Board names, phone numbers, locations, and comments.

The **Hacking Section** will interest programmers and hackers of course. Heavy stuff.

The **Information Tools Section** is a mixed-bag of articles, some incredibly informative for the Mac user, for example, "INITs, DAs, & CDEVs: A Beginners Guide". And some not so important, "Beyond Dark Castle: A Review." However, on the whole, there are many interesting and useful reviews.

The **Commentary Section** is my favorite. Here, Mac users full of love and hate vent their joys and frustrations over the Macintosh experience.

The **Appendices** contain a Bibliography, Newsletter Glossary, and a very useful BMUG Shareware Library Index. This issue included an inserted BMUG HyperCard Library Index. In addition, a disk, which includes a variety of some useful -and not so useful -utilities, applications and demos, is included with the Newsletter,

Stop by the Workstation Lab (Bldg.50B, Rm.2231) to inspect this edition, and get additional details for putting yourself on the BMUG Newsletter subscription list.

Workstation Software Lending Library/Complete

The Macintosh and IBM PC software listed below can be borrowed for one week for evaluation. It is not to be copied!! The Workstation Group lets you keep these packages for one week at no charge. If not returned after the 8th day, there will be a \$100 charge plus the software cost recharged to your account. To check on the availability of, or to make a software reservation, call the Workstation at x6858.

APPLICATION CATEGORY	APPLE MACINTOSH	IBM PC-XT-AT
Communications	Kermit V0.8 ** TOPS for the MAC V2.0 VersaTerm V3.2	DECnet DOS V1.1 Kermit V2.30 PC-VT V8.4 SmartTerm 240 v2.0a ** TOPS for the PC V2.0
Database Application Generators	dBase Mac v1.0 FileMaker II Reflex Plus V1.0 4th Dimension V1.04	dBaseIII Plus dBaseIV QUATTRO R:BASE V2.1
Demo Programs	dBase MAC FoxBASE+/MAC FreeHand by Aldus MacLab MacSpin MacTeX MathType MGM Station Cad Mystat/SYSTAT PowerPoint ProCite biblio Reflex Plus by Borland StatView SE+, II SIMUL VersaCad (MAC SE only) WordPerfectx	Adobe Illustrator GENIFER Galaxy V2.3 Javelin PLUS Legend Lotus Agenda Lotus Manuscript MiniTK Solver Mystat/SYSTAT PerSoft ProCite biblio SAS Spectra Calc SuperProject Expert Third V1.9 PageMaker v3.0 Intro to SQL*Tutor Vuwriter Scientific
Disk Backup Utilities	DiskFit V1.4 FastBack V1.02 HFS Backup V2.02 Redux V1.0	BackEZ! V1.0
Drafting	MacDraft V1.2b 2/24/88 MiniCad Plus	
Drawing and Design	Aldus FreeHand V2.0 Canvas 2.0 * Claris CAD V1.0 Cricket Draw V1.1.1 Cricket Graph V1.3 Cricket Paint * Cricket Presents V2.0 Fontastic Plus V1.0 Fontographer V2.3.2	DrawPlus HP Charting Gallery V1.0 Harvard Graphics V2.1 HP Drawing Gallery V1.0 HP Laser Plotter Laser Combo V1.0 Lotus Freelance V1.0 Lotus GraphWriter V1.0 MS Chart V2.0

	FullPaint V1.0	MS PaintBrush v1.0
	Graph Painter v1.06	MS Show Partner
	Haste V1.0	
	Illustrator 88	
	Image Studio V1.5	
	LaserTalk V1.0	
	MacDraw II v1.0v4	
	MacPaint V2.0	
	MiniDraw DA v2.03	
	Pict-O-Graph V1.0	
	Pixel Paint V1.0	
	SuperPaint V2.0	
	TS Graph	
Equation Generators	Expressionist v2.0	Math Edit V1.1
	MacEqn V2.1	
	MathType V1.04	
	Math Writer v1.3	
Fonts	Adobe Screen Font Library	HP Cartridge Fonts:
	LBL Fonts V1.0	A,D,E,V,Z
	Princeton Font 4.0L	HP Soft Fonts:
	SciFonts V2.5	Letter Gothic
		Prestige Elite
		TmsRmn & Helvetica
General Languages and Tools	Aztec C Compiler V3.40B	Macro Assembler v5.1
	Language Systems:	MS Fortran v4.1
	Fortran and MPW v2.1	MS Basic Compiler v6.0
	Lightspeed C V2.01	MS C Compiler v5.0
	Lightspeed Pascal v2.0	MS Quick Basic v3.0
	MacFortran/020-Absoft v2.4	MS Quick C v1.0
	MS Basic V1.0	Q-DOS II
	MS Quick Basic	RM Fortran v2.0
	* Turbo Pascal V1.1	True Basic V2.0
		Turbo Pascal v5.0
HyperCard	HyperCard V1.2.1	
	HyperDA V1.1	
	Hyper-XCall v1.01	
	Icon Factory 1.0	
	Port Authority II	
	Reports! V1.0	
	101 Scripts & Buttons	
	Stack Cleaner v1.01	
Instructional	Personal Training Systems:	ATI Teach Yourself:
	Audio Cassette & Disk	Lotus 1-2-3 V2.0
	"Learn Excel" (9 courses)	Cdex Training Program:
	"Learn HyperCard" (4 courses)	Lotus 1-2-3 V1.0a
	"Learn PageMaker 3.0" (4 ")	PC Tutor
	"Learn Illustrator88" (4 courses)	MS Word Adv. Training
	"Learn Word" (3 courses)	dBASE IV training
	"MacTeach" (4 courses)	Intro & Intermediate
	FlipTrack Learning Systems:	
	"How to use Word" (4 courses)	

Mathematics/Statistics	DataDesk Pro v2.0r1 KaleidaGraph v1.1 Mathematica v1.1 Milo v1.0 Parameter Manager Plus Passage v(e.02) Passage II v1.07 StatView 512+ v1.2	TK Plus Solver
Organizational Tools	Acta V2.0 MacProject II More II Think 'n Time V1.0	GrandView V1.0 Harvard Project Manager V3.01 TimeLine V3.0
Presentation Graphics	Aldus Persuasion v1.0 Cricket Presents V2.0 Full Impact v1.0 PowerPoint v2.00A Ready-Set-Show V1.0 Trapeze v2.1	Draw Applause v1.0 Master Graphics Chart Master Diagram Master Sign Master
Spreadsheets	Excel V1.5 MacSQZ V1.51 Panorama v1.0 101 Macro's for Excel Trapeze v2.1 Full Impact v1.0	Excel V2.0 Lotus 1-2-3 V2.01: In Word V1.0 Lotus HAL & Metro Learn & SpeedUp Funk Worksheet Util
Technical Publishing/ Page Layout	PageMaker V3.0 PageMaker Templates V2.0 Quark XPress V2.0 * Ready-Set-Go! V4.5 SpringBoard Publisher v1.0	BYLINE v1.0 PageMaker V1.0a Ventura Publisher V2.0
Utilities	AnyText/AnyGraph V1.4 Comment v1.0 * EndNote v1.1 Fedit Plus V1.0 FontLiner v1.0 FontSizeer v1.0 HFS Navigator v1.0 Interferon v3.1 * Microsoft Works v2.0 PrintWorks for the MAC * The NightWatch V1.03 Thunder! v1.0 OpenIt! PC Tools for the MAC MultiDisk V1.1 ReadIt! v1.06h QuicKeys V1.1 Sensible Grammer V1.1c Sentinel V2.0 SideKick V2.0 SmartScrap & The Clipper Spelling Coach Pro	DeskSet v1.0 Carousel V1.0 Double DOS DW Laser V1.3B MS Windows/286 MS Windows/386 Norton Utilities V4.0 Nvelope v1.0 PICNIX PCUNIX Polaris Forms V1.0 SideView V1.0 SoftWare Bridge V3.1 The Trading Post

Stepping Out V1.0
StuffIt V1.5.1
SuitCase v1.0
SuperGlue v1.0
SUM

Word Processing/Editors

FullWrite Pro V1.0
MacWrite v5.0
MindWrite v1.12
MS Word v3.02
Textures V1.01
WordPerfect V1.0
WriteNow 2.0

DisplayWrite4 V1.0
Lotus Manuscript V1.0
MS Word V4.0
MS PageView V1.0
PC/VI V1.11
Total Word V1.0
T3 TRIAD v2.1
WordPerfect V5.0
* Ami v1.0

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LBL COMPUTING NEWSLETTER

SIGN UP FOR THE NEWSLETTER

Attention LBL employees: If you use the Computer Center's UNIX or VMS system, or if you are an 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

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Information and Computing Sciences Division
Lawrence Berkeley Laboratory
Computer Center Library - MS 50F
One Cyclotron Road
Berkeley, CA 94720