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NOVEMBER
1990

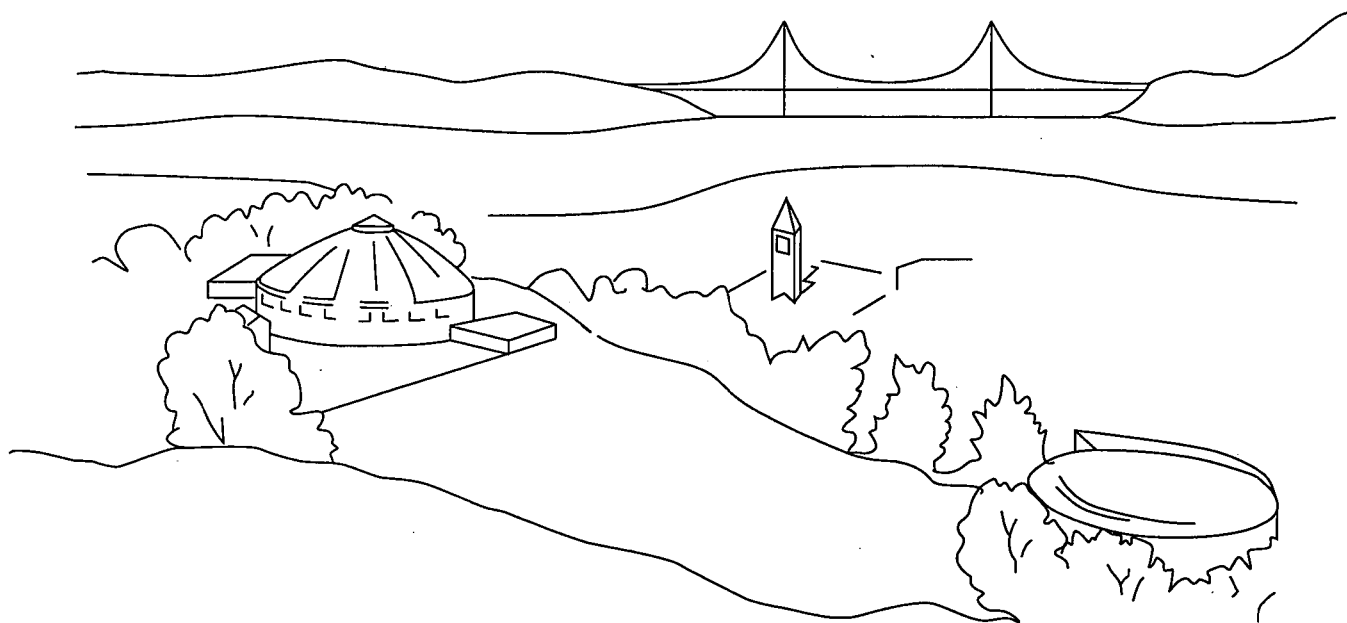
LB COMPUTING NEWSLETTER

PHYSICS LIBRARIES ON UX5 & STARDENT

COLOR & GRAYSCALE PRINTING

NEW MAC MODELS

WINGZ: SPECIAL PROMOTION



1 LOAN COPY
1 Circulates
1 for 2 weeks

Bldg. 50 Library

PUB-429

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Newsletter Closing Date is Thursday, November 15, 1990

Address all communications for the Newsletter to login nooz@ux1.lbl.gov
or put in Maggie Morley's Drop Box in the Workstation Group File Server

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GRAPHICS NEWS

TRUE COLOR PRINTING (KODAK XL 7700)

Nancy Johnston
Bill Johnston
Bob Rendler

Computing Services now has a true-color printer available for producing near-photographic-quality color or grayscale output. 8 1/2" x 11" and 11" x 11" output can be produced on paper or overhead transparencies. The maximum size image is 2048 x 1536 on 8 1/2" x 11" and 2048 x 2048 on 11" x 11". (Scaling is provided to maximize the printing area, and ranges from 0.5 and 4.0 in both x and y.)

Unlike most digital hardcopy devices, which require a continuous tone image to be halftoned prior to printing, the XL 7700 prints continuous tone images using true colors. Thus, while the XL 7700 has a spatial resolution (200 dots per inch) that is lower than that of our other color printers (300 dots per inch), the lack of an intermediate halftoning step more than makes up the difference. For example, on the QMS or Tektronix, the maximum colored image that could be displayed along 8 inches would be 1200 pixels (due to the halftoning process). For the Kodak, 1600 pixels can be displayed.

Halftoning is the process used by printers to represent color images by ink on paper. Color shades are represented with closely-spaced patterns of dots of varying size and color. The dot patterns are kept small enough that the eye cannot distinguish individual dots, but rather fuses a collection into a single color that is intermediate between the colors of the individual dots. Ink printers usually use the subtraction primary color inks (yellow, cyan, and magenta) plus black on white paper to achieve a range of colors.

Computer-driven color printers use an approximation to halftoning that uses fixed size dots (a process sometimes called dithering). In general, the process trades spatial resolution for gray levels or color shades. In general, you have to trade area for gray levels, so that, for example, nine gray levels requires using a 3 x 3 area. This means that your spatial resolution "pixels" are now three times as big, and your 300 dpi monochrome printer has become a 100 dpi, nine graylevel printer.

The Kodak is a thermal dye printer. Tiny heaters built into the print head transfer precise amounts of dye to



Wes Bethel, of ICSD's Graphics Project, examines a color print from Computing Services' Kodak XL 7700 printer.

the receiver. Amounts are proportionate to the density of the tone being reproduced. For color images, the process is repeated for each color. The resulting print is a continuous tone image that resembles a photograph.

The types of files that the Kodak can accept are:

icc VITec ICC Image File Format
plc Plain Color Image File
plm Plain Monochrome Image File
sun Sun rasterfile Format, 8 and 24-bit
rif VITec RIF Object Format

As shown in the next article, "Color & Grayscale Printing", there are a variety of ways to get your file in one of the above formats.

The Kodak is on the Distributed Printing system and uses a special command, called **kpr**. **Kpr**, available on UNIX machines and the VAX/VMS Cluster, allows you to scale, rotate, and center your plot. Color enhancement in the form of gamma correction is also available. (See "**man kpr**" on UNIX and "**help kpr**" on the VAX/VMS Cluster for more information.) The cost per page is \$4.

Forward comments and questions to Nancy Johnston at x5093 or

Unix or
Software Tools Mail: **NEJohnston@lbl.gov**
VMS Mail: **lbl::NEJohnston**

COLOR AND GRAYSCALE PRINTING

... How to get from A to B

Nancy Johnston
Bill Benson

Macintosh and UNIX users who want to produce COLORED or GRAY-SCALED output on paper or transparencies need to know how to get from a file of type A to a printer of type B. We hope this article shows them how.

As we've announced in previous Newsletters as well as this one, (see our accompanying article on the Kodak printer), Computing Services now has three color and grayscaled printers available to users. (The Kodak XL 7700, The QMS ColorScript, and the Tektronix Phaser PX.) They are all on the Distributing Printing system, but each has different printing characteristics, and, in the case of the Kodak, accept different types of input.

In the near future, maybe even by the publication of this newsletter, we will have produced a gallery of sample output from the different printers so users can make their own comparisons. This "gallery" will be posted above the Tektronix and QMS printers in Bldg. 50B, Rm. 1275.

In this article we'll give procedures for working with several of the numerous free and low-cost tools available to manipulate images from one format to another. Not all of them work on all formats: not all of them are optimal for certain situations. (For example, **pbmplus** works well when printing individual windows but we had trouble using it to print the whole screen on the QMS printer).



1. SCREEN AND WINDOW PRINTING FOR SUNS AND MACS RUNNING X11

Suns, Macs, and probably any other UNIX machine running X11 provide various tools for printing the whole screen or an individual window. The tools demonstrated here are:

- screendump** A Sun program for dumping all or part of a frame buffer
- pbmplus** Tools for converting from one graphic file format to another. Distributed with the X11 software and written by Jef Poskanzer. (Available on UX5 in /usr/local/pbm.)
- RLE** This Utah Raster Toolkit handles various graphic file formats and is very useful for image enhancement on color images; it also provides useful control (size and placement) for PostScript output. (Available on UX5 in /usr/local/RLE.)

A. TO PRINT A WHOLE SCREEN:

Printer	Command
Kodak	screendump -8 kpr -s 1.6 1.6 -i sun (The -s option controls the sizing in x and y.)
Tektronix	(unable to handle the large files generated)
QMS	screendump -8 rastorle rleflip -v rleflip -r rletops -C -h 8 lpr -Pqp2

B. TO PRINT A SPECIFIC X11 WINDOW:

Printer	Command
Kodak	xwd xwdtoppm ppmtorast -s kpr -i sun -s 2. 2. (The -s option controls the sizing in x and y.)
Tektronix or QMS	xwd xwdtoppm ppmtops -C -s 8 lpr -Ptp1 (or -Pqp2)

A. TO PRINT A WHOLE SCREEN:

Install "Flash-It" in the System Folder. Then do the following:

- a. cmd-shift-c You specify a screen rectangle which is converted to PICT format and placed in the clipboard.
- b. cmd-shift-s Write the clipboard to a PICT file.
- or
- cmd-shift-p Print the clipboard on a PostScript printer.

B. FILE CONVERSION AND PRINTING

PICT FILES TO PostScript PRINTER

launch "Image 1.31"
 (will not print in color unless you click "Use LaserWriter 6.0" from "Preferences" menu under "Options")
 launch "Use Paint v1.22"

PRINT CLIPBOARD PICT FILES

launch "Microsoft Word" (MS Word 4.0)
 paste
 print

PRINT TIFF (8 BIT GRAYSCALE) ON PostScript PRINTER

launch "Image 1.31"

CONVERT GIF TO PICT FILES

launch "QuickGif"
 launch "Giffer 1.08"

CONVERT X11 DUMP FILE (FROM XWD) OR SUN'S RASTER FILE FORMAT TO PICT

launch "Display X/Sun Rasters" (saves palette with PICT, but doesn't use it for display)

GENERIC INSTRUCTIONS FOR COLOR PostScript PRINTERS

- a) select a LaserWriter from the Chooser
- b) select Page Setup (usually from the File menu)
- c) press the "Tabloid" popup menu and select one of these page sizes:
 - Phaser Letter
 - Phaser Legal
 - ColorScript 100 US Letter
 - ColorScript 100 Tabloid
- d) select Print (usually from the File menu)

SELECT THE PAGE SIZE CORRESPONDING TO THE CHOSEN PRINTER AND MEDIA:

- Phaser Letter, 8.5"x11" media, (8.13"x8.48" imageable area)
- Phaser Legal, 8.5"x14" media, (8.13"x10.82" imageable area)
- ColorScript 100 US Letter, 8.5"x11" media, (8.1"x8.9" imageable area)
- ColorScript 100 Tabloid, 11"x17" media, (10.6"x14.9" imageable area)

Note also that you must have the LaserWriter 6.0 distribution to get color or grayscale output. The distribution consists of three files: LaserWriter 6.0, LaserPrep 6.0, and PrintMonitor 1.3; copy these to the System Folder, replacing previous versions.

The distribution is available from the Graphics folder on the WKSG Server 1 AppleShare server in the lbl zone. (LaserWriter 6.0.1 exists, but does not include page sizes for the Phaser or ColorScript).

Forward comments and questions to

Nancy Johnston, x5093

Unix or
Software Tools Mail: NEJohnston@lbl.gov

VMS Mail: lbl::NEJohnston

or Bill Benson, x5703

Unix or
Software Tools Mail: WHBenson@lbl.gov

VMS Mail: lbl::WHBenson

... *Interactive Data Language*

IDL AVAILABLE ON UX5

Nancy Johnston
Wayne Hurlbert

IDL from Research Systems, Inc., is now available on ux5. IDL is an interactive command driven package which runs under X Windows. Its primary use is the analysis and display of scientific data through its programming, plotting, and image display facilities. A tutorial manual and a User's Guide is available from the Computing Services Library, Bldg. 50B, Rm 1232B (x4242).

IMAGE DISPLAY FACILITIES

IDL can work with grayscale and color images and provides a wide variety of image processing capabilities.

- handles byte, integer, float, double precision, and complex images;
- allows the creation of up to ten windows of any size;
- provides color table manipulation and creation;
- image processing techniques such as thresholding, contrast enhancement, histogram equalization, smoothing, sharpening, filtering, geometric transformations, and more.

SCIENTIFIC PLOTTING

IDL provides 2D and 3D plotting facilities. Some of the features include:

- horizontal and vertical bar charts;
- contours;
- linear-linear, linear-log, log-linear, and log-log scaling;
- shaded surfaces (with light source); surfaces with — hidden line removal;
- multiple plots on a page;
- some control over axis, ticks, symbols, titles, labels, and text;
- curve fitting.

MISCELLANEOUS

The programming facilities are extensive, providing for external user written functions in IDL's own FORTRAN-like language, and in FORTRAN and C (external C functions are available under Sun OS v4.1). Between the supplied library and those which are built in, a wide range of math functions are available. Other features include the journal command, which will save your command history in a file;

To run IDL just type

`UX5 % /usr/local/IDL/idl_setup`

You must be on UX5. The executable script asks for the name of your workstation (VAXstation running DEC Windows, X Terminal or Macintosh running X11), sets the environment for you, and executes IDL.

You can find the IDL-supplied library procedure source in `/usr/local/IDL/lib` and demos in `/usr/local/IDL/demo`. On the next page you will see the result of "playing" with some of the image-processing capabilities. Note: this exercise is for demonstration purposes and was not meant to reflect the "right" way to do things. (In the following code, the `" ; "` in IDL denotes the beginning of a comment.)

Forward comments and questions to me at x5093 or

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

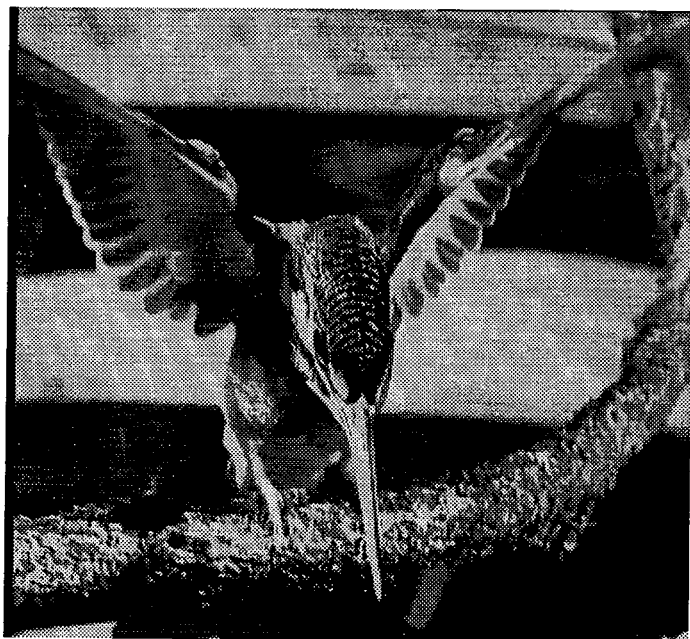
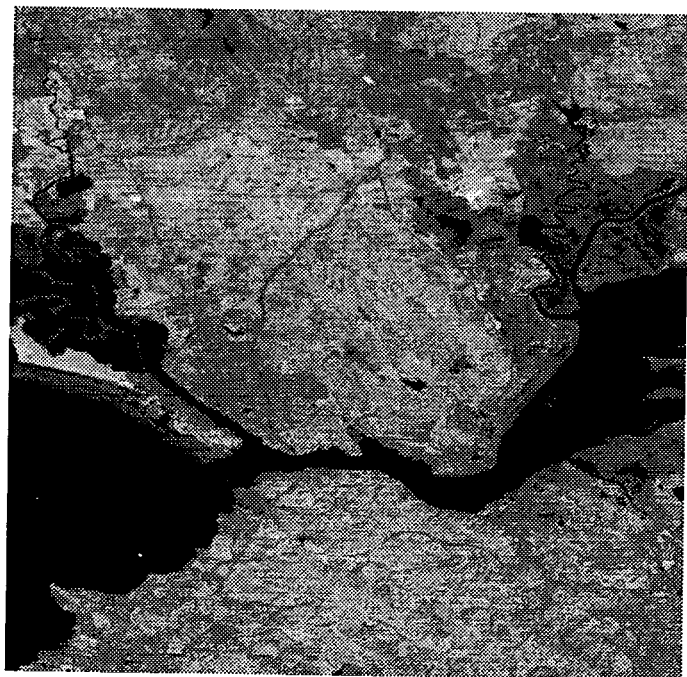


IMAGE #1: BIRD



IMAGE #2: LAND



**IMAGE #3: BIRD & LAND**

```

IDL> bird = bytarr(512,482)-----; Define the arrays for the bird, land,
IDL> land = bytarr(512,512)-----; masked bird, and the array, to hold
IDL> mask = bytarr(512,482)-----; the bird threatening the land mass.
IDL> comp = bytarr(512,482)
IDL> openr,1,'bird.r' -----; Open the files
IDL> openr,2,'landsat.r'
IDL> openr,3,'bird.mask'
IDL> readu,1,bird -----; Read in the data -- 'readu' denotes binary data.
IDL> readu,2,land
IDL> readu,3,mask
IDL> land = land+10 -----; add 10 to the original land to demonstrate
                                ; mathematic operations on originals
IDL> -----; Enhance the contrast because initial land image was dull
IDL> land1 = bytscl(land)
IDL> .run mask -----; load my program
IDL> -----; Run program which uses 'mask' to select which pixel to write to
IDL> -----; 'comp' (a bird pixel or a land pixel).
IDL> mask,land,bird,mask,com
IDL> tv,comp,/order -----; display resultant image

```

FOCUS NEWS

Marilyn Graham

TOOLKIT USERS MEETING

The next **Toolkit** Users meeting will be held at 3 PM Thursday, November 15 in Bldg. 50, Rm. 1237 (the Training Room). On the agenda:

- a) New **Toolkit** features:
 - Sumsets facility, which allows users to specify account groupings when reporting and provides an easy method for producing GLP reports,
 - Travel History, a new file summarizing all trips in the current fiscal year, and
 - Contract Labor, a new file containing hourly effort for all contract labor.
- b) Enhancements to **Toolkit** data files:
 - streamlined data retrieval in the Property Management system, and
 - new fields in the Weekly Effort file.
- c) Questions and planning:
 - bring ideas for future topics, FOCUS questions, etc.

If you are interested in attending the users' meeting, please call Esther Schroeder, x5306 or

Unix or

Software Tools Mail: ECSchroeder@lbl.gov

VMS Mail: lbl::ECSchroeder

FOCUS CLASS IN NOVEMBER

A Basic Report Preparation class will be offered at the end of November. This is a beginning-level FOCUS class designed primarily to help users improve the skills necessary to get the most out of **Toolkit** files. It will include a presentation of FOCUS file descriptions but will emphasize how to generate reports using FOCUS databases. Among the topics to be covered are

- ✓ data retrieval, sorting and printing;
- ✓ record selection;
- ✓ creating temporary fields;
- ✓ subtotalling;
- ✓ performing calculations;
- ✓ report formatting.

The class is scheduled for 5 sessions, each 3 1/2 hours long, during the week of November 26.

If you are interested in enrolling in the class, please call Rita McClean, x5872. For more information, call Marilyn Graham, x5688 or

Unix or

Software Tools Mail: MAGraham@lbl.gov

VMS Mail: lbl::MAGraham

THE HELP DESK

MONITORING BATCH JOBS ON CSA

Martin Gelbaum

Users can follow the progress of their batch jobs on CSA using the following procedure. (This example was all done while logged into CSA2.)

Let's presume you submit a job with this DCL command:

```
$ submit/queue=batch$normal job.com
```

You find out which CSA machine is running your job with this DCL command:

```
$ show que/all/batch *normal
```

which displays something like this:

Generic batch queue BATCH\$NORMAL			
Jobname	Username	Entry	Status
no privilege		615	Holding until 28-AUG-1990 21:00
Batch queue CSA1_NORMAL, on CSA1::			
Jobname	Username	Entry	Status
JOB	JoeUser	88	Executing
no privilege		46	Holding until 28-AUG-1990 12:00
Batch queue CSA2_NORMAL, on CSA2::			
Jobname	Username	Entry	Status
no privilege		35	Holding until 28-AUG-1990 15:50

("no privilege" means that someone else submitted the job.)

Since your job is running on CSA1, you use this DCL command to see how much CPU time, etc., it is using:

```
$ show system/batch/node=csa1
```

which shows something like this:

VAX/VMS V5.3-1 on node CSA1 28-AUG-1990 11:31:24.35 Uptime 25 04:27:32								
Pid	Process Name	State	Pri	I/O	CPU	Page flts	Ph.Mem	
23E2535A	Dodisks	COM	6	6847	0 00:00:45.44	1656	993	B
23E23A77	CACHE_85	LEF	2	1057	0 00:00:10.15	3029	1039	B
23E25F99	JoeUser_88	LEF	4	149	0 00:00:01.74	556	510	B

(JoeUser_88 is your job in this example.)

You do not need to log in into the machine on which the batch job is running to check on its progress.

Forward comments and questions to me at x4749 or

Unix or

Software Tools Mail: martyg@lbl.gov

VMS Mail: lbl::martyg

NEWS OF MATH LIBRARIES

SPSS USERS: CIRCLE NOVEMBER 11 ON YOUR CALENDARS

Martin Gelbaum

As announced in last month's issue (see Pg. 8), SPSS Release 4.0 (a new and much-improved version of the statistical package) has been installed on the CSA cluster.

Users, we'd like to remind you that we will remove the old version (SPSS-X Version 2.2) from the VAX/VMS system on November 11. At that time, you must use the new version. The HELP article for the new version will be named SPSS (not SPSSX).

Here's how to access SPSS Version 4.0.

- First run the following command procedure:

setup_spss

this defines various logical names and symbols to use SPSS version 4.0.

- You may, of course, put this in your login.com as

\$ setup_spss

and then, every time you want to run the new version of SPSS, type

spss40 (or simply **spss**)

You can access a large library of HELP articles from within SPSS by typing "?" at the SPSS> prompt. You can also access this HELP library by typing

help/libr=spss_ihelp

at the CSA prompt after you have used the command "setup_spss".

Forward comments and questions to me at x4749 or

Unix or

Software Tools Mail: **martyg@lbl.gov**

VMS Mail: **lbl::martyg**

TeX NOTES

DVISELECT ON UX5/3/1 AND CSR

Martin Gelbaum

Dviselect, a program that selects a range of pages from a DVI file for previewing or printing, has been installed and successfully tested on UX5/1/3, CSR, and its clients (SPARC & Sun3). See "**man dviselect**" for details.

Dviselect was written by Chris Torek of the University of Maryland and is in the public-domain.

Here's a sample procedure. To use it on our UNIX systems, type

```
dviselect 2:4 myfile.dvi | lpr -Pap4 -d
```

to send only pages 2-4 to printer ap4 for printing.

Another sample procedure: to make a subset of the DVI file, type

```
dviselect 2:4 myfile.dvi > pages2_4.dvi
```

NB: neither **xdvi** nor **texx** (X-windows DVI screen previewers) accepted the input of *dviselect* from a pipe; they did accept the DVI file it output.

Forward comments and questions to me at x4749 or

Unix or

Software Tools Mail: **martyg@lbl.gov**

VMS Mail: **lbl::martyg**

XDVI: TeX DVI SCREEN PREVIEWER ON UX5/3/1, CSA, CSB, AND CSR

Martin Gelbaum

Xdvi is an X-windows TeX (DVI) screen previewer for workstations running an X11-compatible windows server. It shows the fonts quite clearly and you can use buttons on your mouse to magnify various parts of the DVI file in windows of different sizes. Of course, **xdvi** is useless on adm3as, vt100s, and other "character-mode" terminals; furthermore, it won't work on micro-computers that are not running X-windows software.

Xdvi was previously announced for UX1/3/5 and clients of CSR. Now, it's also on CSR and on the CSA and CSB clusters. **Xdvi** is in the normal search path on our UNIX machines and is defined by the system on the CSA and CSB clusters. There is a man page about **xdvi** (type **man xdvi**). See also "help xdvi" on CSA or CSB for additional details.

On the CSB cluster node running DECWindows, you can simply type

```
xdvi filename.dvi
```

to preview "filename.dvi" on your workstation monitor. **Xdvi** will NOT work if you are running VWS. (On CSB nodes running VWS, you can use DVIDIS; see **Help TeX**, subtopic **Screen_Previewers**.)

On a CSA cluster machine, say CSA2, you need to connect to some X11 server, e.g., some VMS workstation running DECWindows or a Sun workstation.

If your X11 server is a Sun workstation, e.g., "myws.lbl.gov", you can make CSA use that server by typing

```
$ set display/create/node=myws.lbl.gov/transport=tcPIP
```

You also need to run "xhost csa2.lbl.gov" on your Sun workstation.

You can make CSA use your DECWindows node "MYNODE" as its X11 server by typing

```
$ set display/create/node=MYNODE/transport=DECNET
```

MAKEINDEX: INDEXING UTILITY FOR LaTeX

Martin Gelbaum

MakeIndex is a program for making an index in a document generated with LaTeX. It was written by Pehong Cheng of U.C. Berkeley. "makeindex" is in the usual search path on UX1/3/5 and CSR and its clients. You need to define a DCL symbol to run it on CSA as follows:

```
makeindex ::= $TEX_DISK:[tex.local.makindex]makeindex
```

You can of course put this in your CSA login.com as follows:

```
$ makeindex ::= $TEX_DISK:[tex.local.makindex]makeindex
```

The first step in producing the index is to put the necessary `\index{subject}` commands in your LaTeX source file. After you have written your LaTeX source file, call it "myfile.tex"—with the appropriate "`\index`" commands in it—you will want to print it with its index.

First, you need to add an option to the "`\documentstyle`" you are using, called "makeidx" (for "make index"). Then, you need to put the LaTeX command "`\makeindex`" after the "`\documentstyle`" command; "`\makeindex`" must precede the "`\begin{document}`" command. Lastly, put the command "`\printindex`" where you want to print the index, usually just before the end of the document.

You then run LaTeX on your entire document, causing it to generate the file "myfile.idx", which we will call the "index file". You may see LaTeX complain about a missing "myfile.ind" file. This is not a problem; you have not made that file yet! Then, run the command

```
makeindex myfile.idx
```

to create the file "myfile.ind".

If *MakeIndex* generated no error messages, you can now rerun LaTeX on your document and this time LaTeX will process "myfile.ind" as well as "myfile.tex" and then make the index. When you print the resulting DVI file, you should see the index in the place where you asked for it by "`\printindex`."

Here's an extremely simple sample of LaTeX source file using these commands:

```
\documentstyle[11pt,makeidx]{article}      % Notice the "makeidx" option.
\makeindex                                % \makeindex MUST precede the \begin{document}
\begin{document}
Latest views on two crucial areas of physics research: Relativity \index{Relativity} and Quantum Mechanics
\index{Quantum Mechanics}.
\printindex                               % To print the index just before the end of the document.
\end{document}
```

Sample Output - Page 1:

Latest views on two crucial areas of physics research: Relativity and Quantum Mechanics.

Sample Output - Page 2:

Index

Quantum Mechanics, 1
Relativity, 1

For details, such as how to make subentries, etc., read the document by Leslie Lamport called "*MakeIndex: An Index Processor for LaTeX*", available from the Computing Center Library, x7008.

Forward comments and questions to me at x4749 or

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Software Tools Mail: martyg@lbl.gov

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LBLnet NEWS

Bob Fink & Sig Rogers

IP Number Shortage Ahead

Both bridged and routed LBLnet networks have grown rapidly in the past two years due to the wide-spread usage of new technology workstations (such as the Sun SPARCstation) and the attachment of Apple Macintoshes through Shiva FastPath gateways (almost one thousand Macs are now connected by almost 80 FastPaths). This has been positive for the user in terms of connectivity, but has brought back the old problem of IP number shortages on the bridged portion of LBLnet. (Less than a dozen are left.)

When the first IP number shortage occurred on the bridged LBLnet several years ago (subnet 128.3.254), the solution was two-fold: change to a 6-bit subnet mask on network 128.3 and add a new routed LBLnet (network 131.243) which retained the 8-bit subnet mask. The shift to the 6-bit subnet mask on 128.3 subnetworks allowed an increase of the host number field to 10-bits, which in the case of the bridged subnet 128.3.254 allowed an increase from ~250 to ~750 IP numbers (seen as 128.3.252, 128.3.253 and 128.3.254). The use of IP numbers in the 128.3.255 range, to achieve the full 1000+ IP numbers on the bridged subnet, may not be possible due to technical considerations; this is still under evaluation.

The expansion of LBLnet to routed subnets (planned long before the bridged subnet number shortage as part of the ICS fiber installation) has allowed users to connect to LBLnet on router isolated portions of Ethernet without having to use the Bridged LBLnet IP number space. During the last twelve months, as the routed subnets have become available, there has been more expansion on the routed subnets than on the bridged LBLnet.

Nevertheless, the growth of connections on the bridged LBLnet, such as the increased use of Shiva FastPath gateways to interconnect Apple LocalTalk networks, still results in a large demand for IP numbers. Even though a Macintosh does not have to directly attach to the LBLnet Ethernet, it does need to use IP numbers to access the various Internet services available on LBLnet (e.g., mail, terminal login, file transfer, read news service). Each FastPath is assigned 10 IP numbers for all the Macintoshes on the attached LocalTalk to share as needed for Internet service. In the case of FastPaths attached to the bridged LBLnet, IP numbers are used up at a fast rate (ten at a time).

Note that FastPaths on the 131.243 routed network are often connected as subnets on their own, thus having the full 254 IP numbers to use. This approach is not possible on the bridged network as there are only ~60 possible subnets (due to the 6-bit subnet mask) and most are already in use.

The long-term solution is to continue to build routed LBLnet subnets in parallel with the bridged LBLnet areas now unserved by routed LBLnet (primarily the 50/70 complex). In the meantime, the LanMARK service available on ICS provides a 1 Mbps Ethernet service over the ICS twisted-pair wiring plant to most areas of LBL (those under ~3000 feet wiring distance to the nearest ICS switching node). The current LanMARK service provides service to areas of the Laboratory currently unserved by LBLnet (see the accompanying LBLnet network drawing).

A new version of LanMARK (not installed on ICS yet) provides multiple virtual Ethernets, thus allowing LanMARK to be used for more than one purpose. With the current IP number shortage on the bridged LBLnet, it is planned to acquire the new version of LanMARK, and use it to provide a second virtual Ethernet service for FastPath connections to the routed LBLnet. This could then be used to move FastPaths from the bridged LBLnet in the interim until more routed subnets are available. This alternative is being evaluated at this time.

Therefore, while the various alternatives to alleviate the IP number shortage on the bridged LBLnet are being discussed, there will be no more FastPath connections on the bridged LBLnet. In fact, it isn't even possible to connect a FastPath since there are not 10 consecutive IP numbers remaining on the bridged LBLnet.

The IP number shortage problem is of the highest priority to the LBLnet staff, and it is also being actively pursued at the NAG (Network Advisory Group). Future Newsletter articles will keep users informed of decisions and plans.

Forward comments and questions to me at x5692or

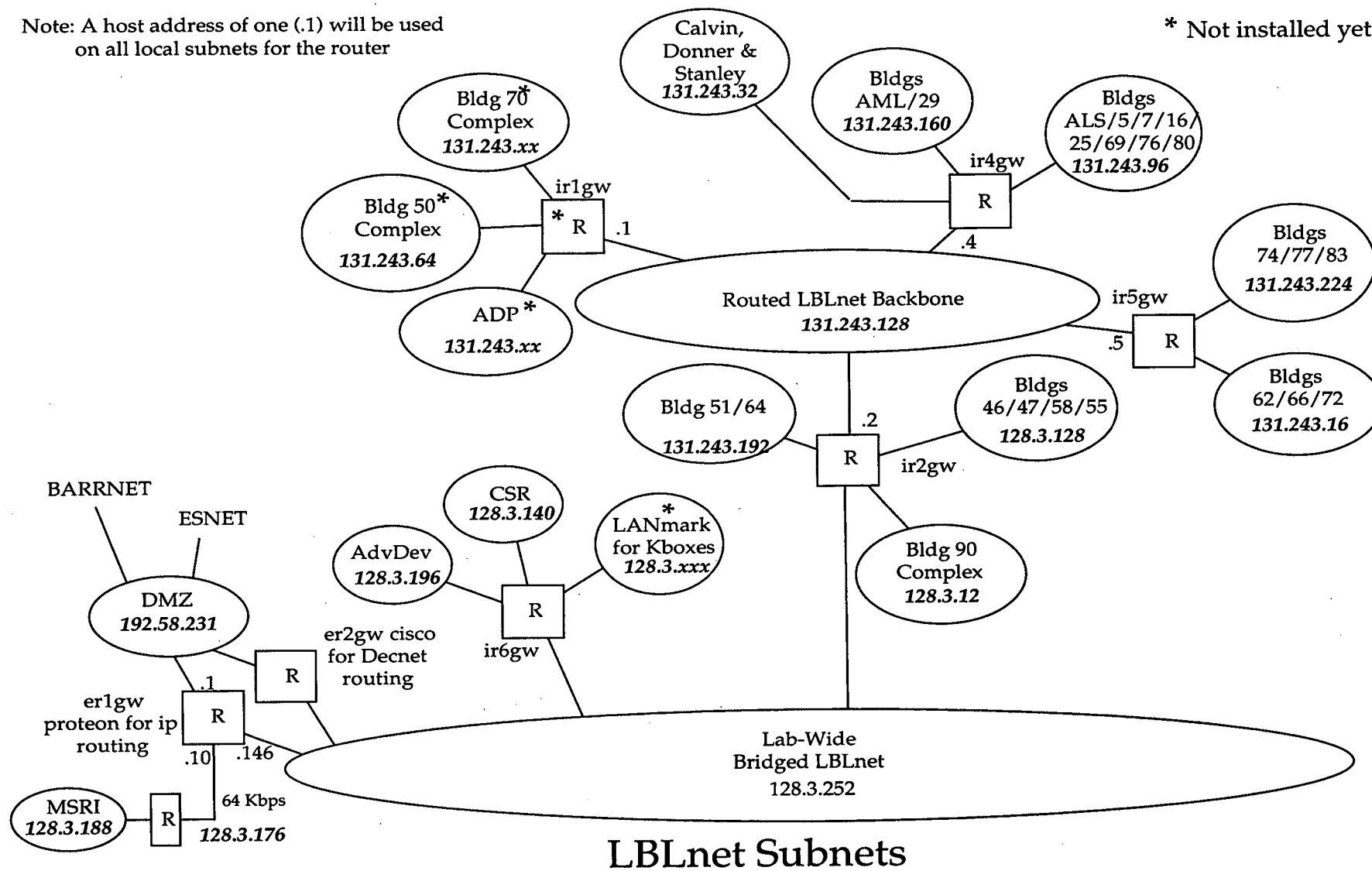
Unix or

Software Tools Mail: RLFink@lbl.gov

VMS Mail: lbl::RLFink

Note: A host address of one (.1) will be used on all local subnets for the router

* Not installed yet



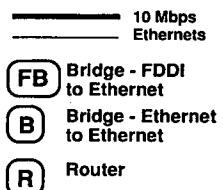
LBLnet Subnets

R = IP Router

Circles Represent Routed Ethernets Subnets

Bob Fink/Craig Leres/Ted Sopher

25 October 1990



5 October 1990

dBASE IV ON VMS AND UNIX??

Deane Merrill

Ashton-Tate has announced that dBASE IV, the leading data base management system for IBM PC compatibles, is now available for VAX VMS and UNIX systems. Sun multi-user license is around \$3000. Data files are binary-compatible among all hardware platforms.

If you are interested in having dBASE IV on the LBL Computing Services facilities, please contact me at x5063 or

Unix or

Software Tools Mail: **DWMerrill@lbl.gov**

VMS Mail: **lbl::DWMerrill**

Please indicate your division, your application, and your machine preference (CSA cluster, UX1/3/5, Sun 3, Sun 4, or a combination).

Depending on the response I will make a recommendation to the Computer Sciences Advisory Committee (CSAC).

NEWS OF PHYSICS LIBRARIES

Werner Koellner

ON UX5 and STARDENT

● CERN LIBRARY

Selected CERN Libraries are available on UX5 and may be copied to Sun SPARCStations. Work is in progress to port some additional libraries to UX5, and to port supported libraries to the STARDENT workstation. Note that porting libraries to Silicon Graphics, IBM RISC-6000, and Convex machines is also supported at Cern.

For information about the status of these efforts, as well as instructions on using these libraries, see the following man entries:

man cernlib
man paw
man geant
man isajet
man jetset73

In preparation for making these libraries available on the STARDENT computer, all CERN libraries and associated files have been moved to new disk locations. To access any CERN library files you should set the environment variable CERN_ROOT as follows:

On UX5 or Sun workstations:

```
setenv CERN_ROOT /home/ux5/ux5c/phyd/cern/sun
```

On the STARDENT machine:

```
setenv CERN_ROOT /home/ux5/ux5c/phyd/cern/stardent
```

All Sun libraries have been rebuilt as shareable libraries. In linking with any library, just specify

-l<library>

where <library> is one of the strings listed under "LIBRARY" below. If you wish, you may link with standard, non-shareable object libraries by using

-l\$(CERN_ROOT)/lib/lib<library>.a

On SUN machines, ATC-GKS is the supported graphics interface for CERN programs. For details, see the man entry

man gks.

The following libraries are available in \$(CERN_ROOT)/lib (Versions as on CSA):

LIBRARY	PACKAGES
geantlib	geane, geang, geanh, geant, geanx
genlib	gen
graflib	hplot5, higz_atc, gkspack
isajet	p-p, pbar-p Monte Carlo
jetset73	LUND Monte Carlo (Jetset73 + Pythia54)
kernlib	kerngen, kernnum
packlib	epio, ffreed, hbook4, iopack, kapack, kuip, minuit, zbook, zebra, zcedex
pawlib	paw_atc, comis, sigma

● PAW

As on CSA, PAW is supported with ATC-GKS graphics. The standard program may be executed by merely typing **paw_atc**. For further details consult the man entry **man paw**

● GEANT

Only the latest GEANT Version (3.14 with ATC-GKS graphics) is supported on UX5. For details about linking your executable image, consult the man entry **man geant**

Some examples may be found in

\$(CERN_ROOT)/demo.

ON CSA

● PHYSICS UTILITIES

On the CSA Cluster, and on LAN workstations, if the required disks are mounted, you can access the Physics Utilities, including the CERN Library, the PAW (Physics Analysis Workstation) Library, and the various Physics Utilities HELP Libraries by 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. A newly added subtopic, **WHAT**, is intended to help you find specific utilities by listing available ones under very general topics. Type

Help What

to see what is available under the auspices of the Physics Division.

● APS_LaTeX

Submit articles to the PHYSICAL REVIEW in machine readable LaTeX compuscripts by using the APS "compuscript toolbox." Type

Help Mis_Phys_Aps_Latex

for more information.

● APS_WHATS_NEW

Weekly news capsules, issued by Robert Park of the American Physical Society, are available in APS_WHATS_NEW.

NEW FEATURE (Courtesy of Art Poskanzer): To read (and keep track of) just the news capsules that you haven't read yet, type

Whats_New (or just What's) <cr>

For further information, type

Help Mis_Phys_Aps_Whats_New

● CERN LIBRARY

Object libraries are updated at unpredictable times. Changes are documented in the "Program Library News" section of the CERN Computer Newsletter. Past, current, and sometimes future issues can be found in **Cern\$Inform:PROGLIB.CNLxxx**. Of particular interest are news items regarding the status of obsolete routines. Additional information can be found in various files in **Cern\$Inform**, in **Cern\$CernHlp**, and via online **HELP** for selected products. In some cases a previous version of an object library is available as **xxxxx.OLD**. In particular, type **HELP CERN LIB** to see a small description of the library packages and current versions that are available. In some cases a previous version of an object library is saved as **xxxxx.OLD**.

The recommended method to access the latest standard object libraries is to use logical names **CERN\$_LIB**. For these names and other details, please see the help text in **HELP CERN**.

The following object libraries and programs have been updated recently.

This executable is in **CERN\$CERNEXE**

CMZ Version 1.34/02

These packages are in Library **CERN\$GEANTATC_LIB**

GEANG Version 3.14/16 (includes cg option)

GEANH Version 3.14/02

GEANT Version 3.14/15

GEANX Version 3.14/14

Packages in Library **CERN\$GRAFATC_LIB**

HIGZ_ATC Version 1.10/10

● CERN_NEWS

Cern News is a facility which allows remote access to News Items (for instance, the latest LEP News), that are posted by a number of research groups at CERN on either the VAX or IBM machines at CERN.

To see the list of available News Groups, type

Cern_News/INQ

To scan news of the LEP group, type

Cern_News LEP

and follow the instructions. Once in **CERN_NEWS**, you may send the current news item to the default printer, or fetch the file into your default directory.

For additional information, type

Help Cern_News

● COMPUTER PHYSICS COMMUNICATIONS

Computer Physics Communications of Belfast, Northern Ireland, maintains the CPC Program Library, which contains over 1100 refereed programs in Physics and Physical Chemistry, submitted by scientists from all over the world. Descriptions are published in the North-Holland journal Computer Physics Communications. Indexes of newly-added programs can be found in

Cern\$Inform:CPC_LIB_mmyy.INDEX.

Electronic access to the library is now available from CSA3 via the BSEND command. For more information see

Cern\$Inform:CPC.INTRO.

● FOR_STRUCT

FOR_STRUCT is a new product which has been made available through the Electronics Engineering Division of LBL as part of their reverse engineering and CASE studies. It is licensed on the CSA cluster.

FOR_STRUCT is a comprehensive structuring utility to transform spaghetti FORTRAN-IV and FORTRAN-77 into fully-structured code. It completely converts IF-GOTO, GOTO and DO..CONTINUE statements into equivalent structured forms. Various options may be specified.

To use this new, non-interactive utility, type

FSTRUCT (or just **FST**) <filename> <cr>

For minimal HELP text, type **HELP FSTRUCT**.

● GKS

As explained in the August Newsletter, Version 3.2 of ATC-GKS, which became the default, no longer supports the VAXstation (VWS/UIS) driver 4300. Please note that the old version remains available in **Sy_Graphics:[OLD_ATCGKS]**. To link and run with the old version, redefine GKS logicals

@Sy_Graphics:[OLD_ATCGKS]OLDGKS

● GEANT

GEANT, a system of detector description and physics simulation tools, is available as part of the CERN Libraries. A sample Program, using ATC_GKS to demonstrate graphics and other capabilities, is available. The current default, accessed via the logical name **Cern\$GeantATC_Lib**, is the latest release of Version 3.14. The recommended link procedure

Cern\$Library:Geant.Lnk

uses one of the linker options files

GEANTI_ATC.OPT,
GEANTB_ATC.OPT for ATC-GKS graphics, or
GEANTI.OPT or **GEANTB.OPT** for simple MGKS graphics.

The difference between **I**(nteractive) or **B**(atch) is just the inclusion of the main program **GXINT** in the interactive case.

Besides ATC-GKS, GEANT is also available with the DI3000 graphics interface. To link that version, on CSA2 only, use

@Cern\$Library:Geant_Di3000.Lnk.

METAFILE graphics output is available. For additional information please type

Help Geant

● PAW

At LBL, the program PAW is being maintained primarily in the full GKS version, named **PAW_ATC**, although the mini-GKS version, as well as a DI3000 version, are 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 for graphics output. Standard executable programs of **PAW_ATC**, **METAPAW**, **PAW_DI3000**, as well as **PAW**, are available in **PAW\$LIBRARY**.

To use the PAW with the old ATC-GKS, please see the section "GKS" above, and

Run Paw\$Library:Paw_Oldatc.exe

If desired, users may link their own versions by using or modifying the procedures

PAW\$LIBRARY:PAW_ATC.LNK or
PAW\$LIBRARY:PAW_OLDATC.LNK or
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 or to a Metafile for subsequent processing via the program **METAPAW**, and also simultaneously, and selectively, to a PostScript file.

Most recent **PAW_ATC** improvements are documented in files **Cern\$Inform:Paw.News***. The latest of these is **PAW.NEWS1081**. Manuals for PAW, including a fancy new User's Manual, are available from the Computer Center Librarian (Bldg. 50B, Rm. 1232B - x7008). Type

Help Paw

for more information.

Forward comments and questions to me at x4398, or

Software Tools Mail
or Unix: **WOKoellner@lbl.gov**
VMS Mail: **lbl::WOKoellner**

NOTES FROM TROUBLE MAIL

Maggie Morley

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

MESSAGE

Is there anyway to have the 95% confidence limits on a linear regression plot done by Tell-a-graf drawn on the plot? Thank you.

RESPONSE

According to the manual, the command "curve n spike pair m" command may do what you want. This is described on page B-62-10. This draws "spikes" - error bars - between curve number n and n-1. You also need the right value for the parameter m. These would then be separate curves from the regression curve itself.

MESSAGE

I received the following message. I was unable to reply to it. Could you tell me the correct address to reply to and could you fix the mailer so that it gives a repliable address. Thanks.

```
#72      3-OCT-1990 10:49:39.78      MAIL
From: CSA::""wild_ke"@berkly.enet.dec.com"
To: BEVLAC::JOEUSER
MAIL> reply
To: CSA::""wild_ke"@berkly.enet.dec.com"
%MAIL-E-USERSPEC, invalid user specification
'WILD_KE"@berkly.enet.dec.com"
```

RESPONSE

csa::"wild_ke@berkly.enet.dec.com" should work. The problem is that the address delivered here by one of the remote gateways installed an extra quote mark. (That extra quote mark breaks the parser).

MESSAGE

The Apple printers seem to be inaccessible at the moment. An Lpq doesn't seem to send anything to the printers. Also trying an lpr doesn't work.

RESPONSE

You seem to be confused about the difference between lpr and lpq. Lpq is a "query" command, not a "printing" command, so it will never send files to the printer.

MESSAGE

Because of CSA restrictions on "jumping" more than one node with set hosts, I am unable to use the dialout modem if I am connected to CSA via a set host. Is there some way that "set host/dte txc1:" or "set host/dte txc2:" can be allowed to run if the user is already on via a set host?

RESPONSE

If you have access to the ICS via one of the ADI/IBX connection boxes you have access to the O (Outside) directory. Note that there are more than 20 outdial modems available in this pool.

MESSAGE

I used to be able to create a color screen dump from the MacII in the 50B Operations Area by typing "command shift 4". This no longer works. I would like to make some screen dumps of an interactive Mac program that I am developing, but I miss that feature. Your help would be greatly appreciated.

RESPONSE

I've located (and installed) a control panel device called "Flash-It" that should do what you want. It's pretty simple to use, and is explained via the help button when you select it from the control panel.

In brief, you do "command-shift-c," which changes the cursor to a cross. You then drag out a rectangular area with the mouse. When you release the mouse button, you have a PICT file on the clipboard. You can paste this into Word, or whatever, or print it with command-shift-p

It worked for me; let me know if you have any problems.

MESSAGE

I'm having troubles using the dialout modem on txc1. When I dial a number, it says "ringing" and then before the remote answers, I get kicked off of txc1 and returned to VMS prompt. Then when I try to access txc1 again it says already allocated to another user. The numbers I am dialing include 2847621 and 4867930 and have found this problem on both numbers.

RESPONSE

I just tried "set host/dte txc1:" on CSA1, and connected to 4867930 (notice that I had to dial the number as "9k4867930", as specified in the "HELP DIALOUT CSA1_MODEMS sample.session"). Here's a shortened rendition:

```
*d
NUMBER?
9k4867930
DIALING ...
ANSWER TONE
ON LINE 2400
ERROR CONTROL
ENTER - DIRECTORY (D) etc. ... > d
ENTER DESTINATION NUMBER > CSA3
DATA CALL INITIATED
Csa3 VMSV5.3-1 CSA3 6410 Computer
```

Username: ...

Of course, one must be sure to use "CTRL-\\" (control backslash) to disconnect from the modem when the session is done.

I too am having a problem getting through to "2847621". If this problem continues, give RTSS a call at x5354 to get more help.

MESSAGE

Telnet quit unexpectedly on me. I'm now running three login shells on tty1, tty4, and tty5 that I can't get to. I know there has to be a way for me to kill them, but I haven't been able to figure out what it is. Please kill them for me. How can I best handle this if it happens again?

RESPONSE

Ordinarily, the system cleans up abandoned processes such as you describe. As a matter of fact, your three login shells terminated between 15:37 and 15:39 Sat. Sept. 22.

To kill your login shells yourself, log in again and find them with the command "ps". If there are any, there'll be lines that look like

PID	TT	STAT	TIME	COMMAND
pid-number	p5			-csh (csh)

Determine which TT you're currently on by typing the command "tty", then type "kill -1 pid-number" for those TT that you are NOT currently on.

MESSAGE

When using lpr to print multiple files (e.g. "lpr -Pmpr .cshrc .login...") a header page is printed for each file (as expected) but the "filename" given on each header page is the same as the first file in the list (e.g. 'cshrc'). Is this a known problem with lpr? Can anything be done to fix it? Thanks for any help. That's all for now...

When I use lpr the "-h" switch doesn't seem to work (i.e., a header page is still printed). Is this a feature (i.e., "-h" has been disabled) or a bug (i.e., "-h" doesn't work)?

RESPONSE

We did indeed disable the "-h" options of lpr to prevent confusion at print stations used by many people. As for the header page on a multi-file job retaining the file name of the first file: we'll look into it some more.

MESSAGE

Thanks for the info on how to route incoming e-mail to MAIL instead of MSG. One problem arose, however. Apparently a new MAIL.MAI file was created in the switch-over, and it had my default protection (no **world write** allowance). It appears to work now that I changed the protection to W:RWE. I wonder if I can retrieve the letters I rejected in the interim? Would originators on distant networks realize that I did not receive their messages?

RESPONSE

The correct permissions for electronic mail files are for OWNER and SYSTEM processes to have RWE.
(1) OWNER so that you can read and write and
(2) SYSTEM read and write so that when the SYSTEM mail process receives mail for you, it can write/deliver the mail. You do not need to have WORLD write enabled. The mail that was rejected should have been returned to the people who sent the mail. They can resend the mail now.

MESSAGE

Hi, I'm one of the users of the pi machines. When I try to rlogin from one pi machine to another (or csr), the machine always asks for my password even though I have all the m machines in my .rhosts file. Can you take a look into this? Thank you for your time.

RESPONSE

Fixed your .rhosts file (there were trailing blanks at the end of some hostnames in your original; you could see this by using "set list" within Vi). I removed these

trailing blanks and added the other pi machines. Some machines may need the ".lbl.gov" in the `.rhosts` file, so that was added to all entries in the file.

MESSAGE

In building shared libraries on UX5, the loader "ld" is not able to handle object modules that were compiled with the recommended `f77` flag `-cg89`.

To build a shared library, I use the command
`ld -o <library-assert pure-text <object modules>`
 I got this error message
`...assert pure-text failed: reference to cg89_used at
 nnnn in <module>`

How is this supposed to work?

P.S. The `-cg89` option does seem to work if the user is not making shareable libraries.

RESPONSE

The only viable option, so far as we are concerned, is not to use `-cg89` when building shareable libraries. Note this response from Sun's FORTRAN Group.

"You have found a bug in the SPARCompilers 0.0 implementation of `-cg89`. There is a workaround, but it is fairly awful. First, compile all routines with the `-S` option (in addition to the `-PIC` and `-cg89` flags). Then, edit each resulting `.s` file, deleting the lines containing `.wordcg89_used`. Next, use `f77` to assemble the `.s` files, creating the `.o` files. Finally, link as before. All of the above could be done using makefiles or shell scripts. Not using `-cg89` is also a viable option.

The bug has been fixed for SPARCompilers 1.0."

MESSAGE

When logging into UNIX via ethernet, I have `TERM = network`. How can I get Vi to respond to my terminal as set in my `.login`?

RESPONSE

This problem probably stems from the following: someone commented out the line in your `.login` file that asks you what sort of terminal you are using: here is that line:

```
#set noglob; eval 'tset -s -e -k -m `:vt102`; unset noglob
```

I have taken the liberty of "uncommenting" it. You should therefore see the prompt

```
TERM = (vt102)
```

when you login to UX1/3/5. If you are using a VT100 or a clone or emulator, respond "vt100" to the prompt; if you are using a "VT102" or emulator, respond "vt102"; etc. ("vt102" is better than "vt100"; use it if you can.)

Do NOT respond "network". You should then be able to use Vi, etc., quite effectively.

MESSAGE

Is there a dialout service on CSA, similar to that formerly provided by `txj1`: and `txj2`: on CSA4? How about UNIX?

RESPONSE

There are two dial-out modems on CSA1; they were moved to CSA1 to CSA4 on January 2, 1990; see `HELP DIALOUT`, subtopic `CSA1_MODEMS` for details on usage.

As for UNIX, see "`help dial_modem`" and "`help kermmit`" on the UNIX machines for information on dialing out from our UNIX machines; the dial-out modems on are on UX1 (NOT UX5 nor UX3). T

MESSAGE

Is there a way to reach a dial-out telephone line from a Sun workstation, for example to get to Tymnet? Or to other phone numbers?

RESPONSE

As noted in the previous message: "`help dial_modem`" explains about the use of "`tip tymnet`" to connect to Tymnet from UX1. (*More on this next month. ... Ed*)

MESSAGE

What is the easiest way for me to determine the swap space allocated to the Suns? I don't think there is any problem but I'm curious and I've forgotten where to look for such things on diskless Sun systems. Thanks for your help...

RESPONSE

Type the command "`pstat -s`".

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 1GDivisional management. To use Trouble, enter the VMS, Software Tools, or UNIX mail system and send mail to the address

```
trouble <cr>
```

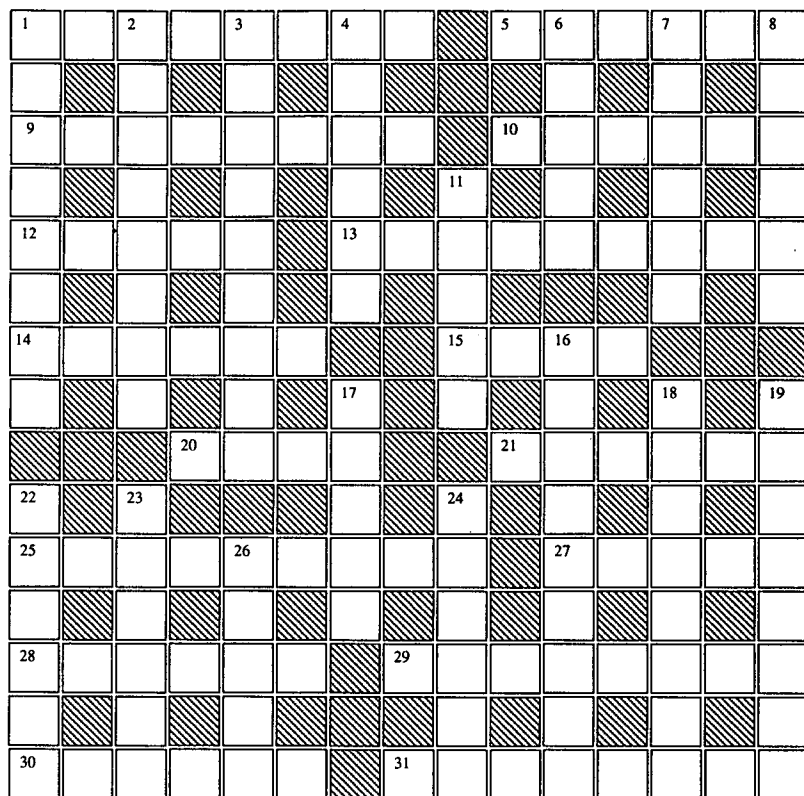
We won't, of course, include any user's name in the exchanges.

CRYPTIC CROSSWORD

Cryptic Crossword for November Theme and Variations

D. F. Stevens
(after Ximenes)

This puzzle contains a theme word accompanied by three sets of three variations, i.e., words that are connected to the theme word in some way. The variations within a set obey the same principle, but the principles that apply to different sets may be different. Neither the theme word nor its variations are provided with definitions, but the nonsense narrative that follows will provide secondary indications for all ten of these words. They occur in random order, without overlap, and punctuation, as always, should be ignored.



I am gone from morbid voracity.
Newspaper's back in the up track.
Cotter pin is in raffia.
Scoop: Thousand Quid Left Dandy!
Liquid in man as an inside point aids rest.
Shifting wind airs us.
Bad rogue's ray is bent.

Across

1. Marine page makes change for coin, baby. (5,3)
5. Ghost's back tears it. (6)
9. The madness left the naturalist before I was at the front. (8)
10. In precipitate retreat, we see military rider. (6)
12. Picture that is holding a back leg. (5)
13. Alabaster is a mixed ionized aggregate with no egg. (9)
14. To cheat in church is elementary. (6)
15. Variation 1 of Set 1. (4)
20. Variation 1 of Set 2. (4)
21. I am, unfortunately, back meat. (6)
25. Predatory vessel takes a look round the four in desert. (9)
27. Variation 1 of Set 3. (5)
28. Is it bearish to insure redistribution? (6)
29. Variation 2 of Set 1. (8)
30. Variation 3 of Set 1. (6)
31. Simpleton puts letter before tax official. (8)

Down

1. Old apparel is served with chips in London. (8)
2. Variation 2 of Set 3. (8)
3. Fundamental element of the nervous system could make you clever in a wrestling hold. (5, 4)
4. Incomplete stem in row of eye. (6)
6. Left input on no underworld lord. (5)
7. Variation 3 of Set 3. (6)
8. Theme word (6)
11. Crooked exchange. (5)
16. School chum makes superior join... (9)
17. ...distressed group under batting. (5)
18. Festival manners are not rough. (8)
19. Variation 2 of Set 2. (8)
22. Single Pole spoke and jumped. (6)
23. Variation 3 of Set 2. (6)
24. So rich, so wild, so often epiphytic. (6)
26. Mrs. Leonowens's coins? (5)

Notes to Solution

Theme: Turkey

First set of variations: game birds

Second set of variations: bordering countries

Third set of variations: failed productions

- Across:
1. [coin baby](*anag*)
 5. rips(*rev*) + it
 9. [Muir I led](*rev*)
 10. rash(*rev*) + us
 12. i.[gam(*rev*)]e.
 13. [aggregate + ion - egg](*anag*)
 14. chur[ch is el]ementary
 15. [K cud](*rev*)
 20. f[l]op
 21. [I'm alas](*rev*)
 25. p[r(IV)at]eer
 27. [ray is](*anag*)
 28. insure(*anag*)
 29. p[he as an]t
 30. rogue's(*anag*)
 21. ass + ess + or
- Down:
1. ref. fish and chips
 2. bul[I'm]ia + rag(*rev*)
 3. clever(*anag*) in half-Nelson
 4. o[cul(m)]ar
 6. p[l]ut + 0
 7. [airs us](*anag*)
 8. rut(*rev*) + key
 11. 2 meanings
 16. class + mate
 17. up + set
 18. fair + ways
 19. [aids rest](*anag*)
 22. SP + rung
 23. raf[fia + sco]op
 24. [so rich](*anag*)
 26. ref. *Anna and the King of Siam* (or *The King and I*)

THE WORKSTATION SCENE



[27.11.1]

TRADING POST

Items advertised here are for Laboratory use only and must be purchased with a valid account number. If you have items you wish to advertise in the Trading Post or if a contact name does not appear with an ad below, call Bruce Burkhart, x6858.

1. **For Sale:** Apple Tape Backup 40SC unit, w/SCSI cable & data cassettes. It's slow, but reliable. \$299.
2. **For Sale:** IBM XT personal computer, 10 MByte Hard Disk, & CGA Color Monitor. \$595. Contact: Richard LaPierre, x4692.
3. **For Sale:** IBM XT personal computer, 10 MByte Hard Disk & Mono Monitor. \$549. Contact: Richard LaPierre, x4692.
4. **For Sale:** PageMaker 4.0 for the Macintosh; unopened-unused. \$250. Contact: Robert Jahnigen, x5579.
5. **For Sale:** SunMicrosystems Software: Sun Paint-Write-Draw v1.1, 1/4" tape, for Sun workstations. \$199.
6. **For Sale:** DaynaTALK network Interface box for LocalTalk, 3 ea, brand new. Half Price! \$70 ea.
7. **For Sale or Trade:** NEC SpinWriter, Model 3550. Daisy-wheel printer with 18" carriage. Many extra font wheels. Will trade for PC-XT conventional model or laptop. Contact Roscoe, x4269.
8. **For Sale:** IBM XT personal computer, 10 MByte Hard Disk, 640K, with Ethernet adapter, CGA board and EGA color monitor. \$650. Contact: Deane Merrill, x5063.



[27.11.2]

IBM LASERJET IIP POWER SUPPLY PROBLEM

HP has announced a defect in its LaserJet IIP Printer Power supply. This defect affects about 70,000 printers.

If the serial number on your printer does NOT begin with the numeral "3", you should call HP's courtesy number (1-800-233-5153) to determine if your machine is one of the affected units. Be sure to have your serial number in hand when you call. (The serial number is located beneath the AC power connector.)

HP is attempting to notify all registered owners of printers with potential problems. However, you shouldn't wait. Call the 800 number NOW! (We know of two users who learned that their printers were affected only by calling the 800 number.)



The Workstation Group Laboratory, home of several Workstation members as well as the *Workstation Evaluation Library* is located in Bldg. 50B, Rm. 2231. The hours are:

Mon	8 AM - 1 PM 3 PM - 5 PM
Tues - Fri	8 AM - 5 PM

You can also reach us from ICSD's UNIX machines or the VMS cluster by sending mail to:

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

We're here to help; please call us at x6858.

It is important to replace a defective power supply before it fails in service; failure can damage the fuser assembly.



[27.11.3]

WARNING: EXPRESSIONIST AND THE LBL KEYBOARD

With thanks to the user who brought this to our attention.

When you hit certain keys in *Expressionist* while using the LBL keyboard, you may experience a bomb, an "Application unexpectedly quit" message, a "Null handle" message, and/or an "Out of memory" message. The troublesome keys are empty places in the LBL fonts—option-shift-r, for example. So far, *Expressionist* is the only application we've seen this problem happen with, and we've taken the matter up with Prescience.

As always, we appreciate hearing about your problems with any applications.



[27.11.4]

CLARIS UPGRADES : ANOTHER REMINDER

... from WKSG member Bruce Burkhart

✓ **Claris FileMaker Pro** (the Mac database application) is available in the Workstation Lab, Bldg.50B, Rm.2231, x6858. The new package is \$75. The upgrade packages, \$40 to registered users, are expected in early November.

✓ **Claris CAD 2.0** upgrades and new packages are now available in the Workstation Lab. A new Claris CAD 2.0 package is \$149—the 2.0 upgrade packet is \$40. To pick up an upgrade, bring in your original disks and a valid account number.



[27.11.5]

NEW MAC MODELS

... Prices come down!

On October 15, Apple announced three new Mac computers:

✱ Macintosh Classic

This model is an updated version of the Mac SE. The Classic comes with an Apple SuperDrive and can be configured with an internal hard disk. It's powered by a 68000 microprocessor running at 7.8 MHz. The Classic with 2 MBytes of RAM and a 40 MByte internal hard disk is priced \$1064 at LBL. This is a nice, simple computer for home.

Although the Classic has no expansion slot, Lapis Technology Inc. (415-748-1600) has announced an internal board that will support a monochrome full-page monitor.

✱ Macintosh LC

The LC model has the new slim modular design with a 68020 microprocessor running at 16 MHz. Although the LC is not a true Mac II, it has built-in low-cost 8-bit color support for several Apple color monitors and a monochrome display. This model will not be available until early January of 1991.

RasterOps Corp. (408-562-4200) will develop four systems of monochrome, gray-scale, and 8-bit color displays on monitors up to 19 inches. These monitors should be available when the Mac LC begins shipping.

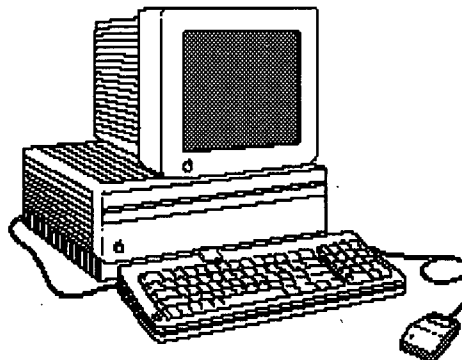
✱ Macintosh IIsi

This is a true Mac II, slim modular design with a 68030 microprocessor running at 20-MHz (for comparison, a IIsi is powered by a 68030 at 25-MHz). The IIsi also has a built-in Memory Management Unit, and built-in color and sound support similar to the Mac LC. The IIsi has

one slot that can use a NuBus or 030 Direct Slot expansion card. This is the lowest-cost member of the Mac II line; LBL cost for a 2 MByte/RAM model with a 40 MByte internal hard disk is \$2186; it is now shipping.

Radius, Inc., (408-434-1010) and Nutmeg Systems (800-777-8439) have both announced a full line of

board-and-adaptor combinations to attach large mono-chrome, gray-scale, and color monitors to the Mac IIsi.



For additional technical information, and prices on these new systems (as well as a special Apple Fall'90 promotional bundle), visit your LBL Workstation Lab (Bldg.50B, Rm.2231), or call us at x6858. We also have the latest Scholar's Workstation PERSONAL COMPUTER ORDERING PACKET FOR INDIVIDUAL SALES handout; stop by for a copy. Personal purchases for LBL and UCB campus staff at the Scholar's Workstation on campus (642-8424) are about 15% higher than LBL pricing.



[27.11.6]

WINGZ - A SPECIAL PROMOTION

...from WKSG member Bruce Burkhart

An Informix Enterprise License program has been set up by LBL to distribute Wingz, the graphics spreadsheet program. Administration and distribution of the Wingz packages under this special promotion will be through the LBL Workstation Lab (Bldg. 50B, Rm. 2231), x6858. Cost will be \$99 per copy (licensed for one workstation user), for the following platforms:



Wingz for the Apple Macintosh

It can use System Version 6.0.2 or higher, and runs under MultiFinder, A/UX, and is network ready. The application can be supported on a Mac Plus and all newer models. A hard disk and 2 MBytes of memory is recommended, but will run with a minimal configuration.

Wingz - DOS Windows 3.0

It is available on 3.5- or 5.25-inch media, and requires Windows 3.0 with a minimum of 2-MBytes of RAM,

with 3 MBytes of RAM or more recommended. This version of *Wingz* also requires at least 2 MBytes of hard disk space, and needs a VGA, EGA, or 8514/A monitor.

Wingz - OS/2 - Presentation Manager

This version requires OS/2 Version 1.2 or higher, and 4 MBytes of RAM, 2 or more MBytes of hard disk space. Monitor requirements are similar to the DOS version. A math co-processor is also recommended for the DOS and OS/2 versions.

Wingz for the SUN

This version will support the SunOS UNIX operating environment 4.0.3 or higher. It will also require *SunView* or will operate in the compatibility mode of Open Windows. *Wingz* supports the following Sun hardware platforms under their minimum configurations for memory and disk space:

- SPARC Family (includes SPARCstation 1 and Sun-4)
- Sun-3 Family
- Sun386i Family



[27.11.7]

QUICKMAIL SPEAKS

...from WKSG member Bruce Burkhardt

Version 2.2.3 of QuickMail (QM)¹ now includes an option for voice communication using the sound capabilities built into Macintosh computers. Adding a vocal comment can now convey the urgency of a rush situation better than typing in ALL CAPS. Or better yet commend your co-workers on a "job well done" with a voice-message heard all around the network. And finally, WKSG members will be able to issue "friendly" vocal reminders to those users who have "overdue" software checked out of the Evaluation Library. QM's new sound-management routines give the user two options: Receive only or Send & Receive.



Receive only, is easy. Anyone with Version 2.2.3 gets two sound-manager files: QM Recorder II and the Farallon (play only) Sound Driver. Simply put these files in your System folder and *Restart....* Open QM, and a new button, *Play...* has been added to the Menu. Now, if someone has sent you a normal text message with an attached voice-message,



¹For information on upgrading your old version to Version 2.2.3, see your QuickMail administrator.

a special dialog box will appear. Buttons in this box will let you *Play...* or *Cancel...* the voice-message. It's that easy.

Send & Receive is easy too, but a bit more costly. You need Farallon's MacRecorder Voice digitizer package (LBL \$99). The package includes:

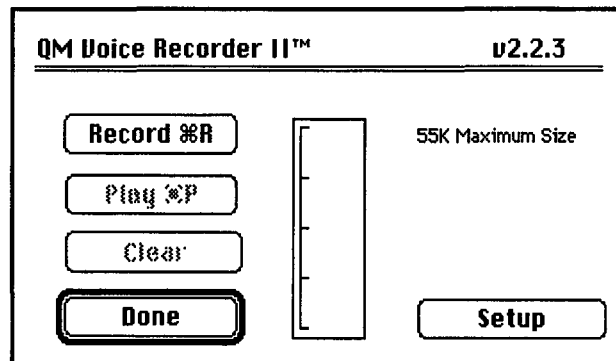
- A Voice digitizer, a hand-held sound input device (microphone)
- HyperSound, a stack for record/play sounds in HyperCard
- The Farallon Sound Driver, software that you use to record/play sounds directly with certain third-party applications².



Installation is straightforward. Plug the Farallon digitizer microphone into the modem port of your Mac. Place the QM Sound Manager and Farallon Sound Driver files in your System folder and *Restart....* Open QM, and another new button, *Rec...* (Record) has been added to the Menu.



To record a message, click on the *Rec...* button in the QM Menu and a special voice-record dialog box appears. In the box, click on the *Record R...* button and begin to "speak" your message into the voice digitizer. As you are recording, a "thermometer" will indicate how much time is being used in the message. When you are finished, click *Done...* to end the voice-message. There is a *Setup...* button in the dialog box that will let you override the record default settings.



²These currently include QuickMail, Microsoft Mail 2.0, MacroMind Director, Studio Session, Jam Session, 4th Dimension, HyperCard, and Studio/1.

Another type of sound input device (an Apple electret³ 1-inch microphone and phono jack adapter) will be included with the brand new modular Mac LC and Mac IIsi⁴. Drivers for Apple and third-party audio digitizers (like Farallon's *MacRecorder*) will be selectable in the Sound Control Panel device (CDEV). The new Apple Sound Manager will greatly simplify the integration of sound input with third-party applications, particularly electronic mail.

Premier Technology Inc. (415-424-1963) has announced a sound digitizer and microphone for older Mac platforms (Retail \$60). Their *MacMic* (pronounced "Mac Mike") will offer the same sound-input as the new Mac LC and IIsi computers.

If you have a new Macintosh IIfx, or a MacII with an fx motherboard upgrade, an additional CDEV is included with the MacRecorder Voice Digitizer package. This "serial port connection" CDEV is necessary to make the Farallon Sound Driver compatible with the IIfx to run QM with the voice-message option.



IIfx Serial Switch

Conclusions: We've successfully tested the QM voice-message options (Play Only and

Play & Record) with the MacRecorder Voice Digitizer in the WKSG Lab across most Mac platforms. As you might have guessed, voice-messages can be expensive in terms of disk space usage. A 15 second voice-message, sampled at 22k with 4:1 compression took 87 KBytes of space. QM voice mail accumulation may have to be carefully watched, depending on your own free disk space situation (in other words, *Dispose...* frequently!).

In most situations voice-messages won't be necessary. However, when they are used, it's a dramatic and personal communication. Wait until you get your first one!

If the WKSG Lab receives enough feedback for a bulk purchase of a Farallon Voice Digitizer, "10-pack", it will reduce a \$99 unit cost to around \$65 per unit. If you would like to "experience" a QM voice message stop by the WKSG Lab.

³ **electret:** *n* : a dielectric body in which a permanent state of electric polarization has been set up.

⁴ For more information on the sound input feature, see the Mac IIsi Product Detail sheet in the WKSG Lab.



[27.11.8]

3-D COLOR SCIENTIFIC VISUALIZATION

Transform, *View*, *Dicer*, and *Format* from Spyglass, Inc., \$598 (educational discount). HDF Libraries and Documentation, NCSA, \$39.

These products are based on NCSA public domain programs for scientific visualization. While we in the Workstation Group are a little out of our depth evaluating them, we can tell you what they're supposed to do—and hope interested users will try them and let us know what they think.

✓ *Transform* converts floating-point numbers into scalable color images, interpolated images, polar images, or line graphs.

✓ *View* allows visual analysis, displaying numbers as color raster images, surface plots, contour plots, or dithered images.

✓ *Dicer*, as the name implies, displays data as 3-D color cube, which can then be subjected to additive and subtractive slicing, both planar and volumetric.

✓ *Format* creates high-quality layouts of images for presentation or publishing.

All the programs can import and export files using PICT or HDF file formats. We've bundled HDF manuals with our Spyglass set.

[27.11.9]

HYPERCARD CORNER

... by HyperFan Bruce Burkhart

HyperCard 2.0 ... a new ballgame!

Apple has thrown us a curve, with Claris announcing HyperCard 2.0 as a *product transfer*. So, right in the middle of a major upgrade—and a very late upgrade at that—another player has entered the game. In the announcement, Claris said that



HyperCard 2.0

the Apple-to-Claris HyperCard 2.0 transition would begin in November—new packaging and distribution and setting up customer support would take weeks or maybe months. Isn't that just wonderful news for users who have already been waiting months for an overdue HyperCard 2.0? In fact, it gets even more complicated.

HyperCard 2.0 will be distributed by both Apple and Claris. Some simple documentation and a Claris-labeled disk will be shipped with new Macs. The disk will be "run-time" only—that is, writing and debugging HyperTalk scripts *will be concealed* from users (I love a masquerade). A HyperCard 2.0 authoring system, necessary for developing stacks, will be sold by Claris.

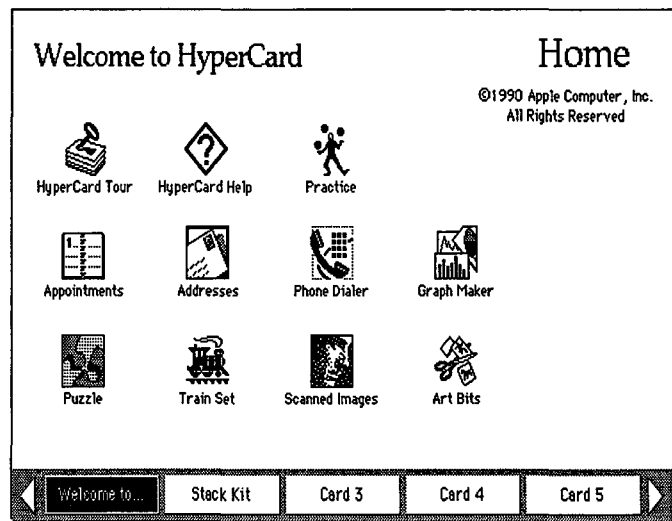
If you would like to see additional press-release information from both Apple and Claris, stop by the Workstation Lab and see me.

LBL Distribution

The Lab will purchase a site license for the full authoring version of HyperCard when it is available from Claris. This package will include five disks and about 700 pages of documentation on HyperCard, stack design and the HyperTalk scripting language. Specific details as to cost are currently being worked out and should be available in early November. Reliable sources have informed us that the complete Claris upgrade package will be less than \$50. The *run-time* single disk and simple documents, *when available*, will be distributed at no cost in the WKSG Lab.

HyperCard 2.0 ... a first look!

An eye-stopping sign hung in the Berkeley Macintosh User's Group (BMUG) booth at the Multi Media Expo in San Francisco last month. "HyperCard 2.0 on sale here!" it declared. The five-disk, full-version bundle (with no



documentation) is \$15. We're now evaluating HyperCard 2.0 in the WKSG Lab. A first run-through shows a really new HyperCard; everything has a different look, with lots of additional features. There'll be a continuing review next month.

The new HyperCard 2.0 takes two paths: (1) an "easier-to-use" application for beginners (about 80% of all users), and (2) an expanded toolkit for developers. This is part of the reason that Version 2.0 will be distributed in two formats. A radical change from Version 1.0 was necessary because most new development was being done through XCMDs (X-commands). This development path made it difficult for both beginners and developers. With a more feature-rich Version 2.0, fewer external commands will be necessary for creating new and

exciting stacks.

The 3rd MultiMedia Expo ... a mini-review

It was similar, in number of exhibitions and sessions, to Expos of previous years. This show is not growing. Maybe the Seybold Show (held the previous week) kept exhibitors and attendees away. In any case, it was a modest presentation, with a noticeable number of no-shows by companies and developers of MultiMedia—particularly Apple. IBM thought it important enough to be there. Here's a partial list of exhibitors:

- **IBM** highlighted their video and other glitzy media software and hardware.
- **RastorOps**, of monitor fame, displayed their latest boards & monitors.
- **3M Corporation** pitched optical recording.
- **Haukom Associates, OWL International**, among other providers of custom MultiMedia products, demo'd their video production systems.
- **ECHO Street Electronics & Video Associates** now have audio and speech packages for DOS platforms (similar to Farallon and Macintosh).
- **Projection Systems Inc.** demo'd a color projection pad and a true color video/computer projection system side-by-side, and the difference is astounding—along with the price.
- **MASS Microsystems**, demonstrated how to get into low cost desktop Mac video production (TV/VCR only) with their *EasyVideo* 8 card. You need an additional "frame grabber" card to incorporate captured video images into Director 2.0, Persuasion, MORE III, and PowerPoint.

Conclusion: Something was happening; however, I'm not sure what it was. I couldn't see the forest for the trees. Most exhibitors and developers had great desktop hardware and software; however end products and content were not clearly focused. Someone has to communicate through these new sets of tools, and those authors hardly exist yet.

Seybold ... a few comments

In early October, several WKSG staff members attended the annual **Seybold Computer Publishing Conference & Exposition** in San Jose. There were few flashy, trend-setting products, but it was an almost dull affair. However, there were a few noteworthy previews of some new software & hardware, and software upgrades—most all in color now. A showing of **Ventura Publisher for the Mac** was a definite delight. (*The Workstation Group will feature a Ventura Mac & PC demo later this year.*)

With this show, computer publishing has greatly expanded and now includes the multimedia industry. Many developers have integrated video and audio into a

single system, but only the Macintosh 19-inch color **Radius TV Video System** demo knocked my socks off. With the resizeable (up to 13-inches) TV window, you can watch live TV, a video, a laserdisc or an RGB camera. (*Let's not forget that IBM-PC users now enjoy a substantial hyper-upgrade with Windows 3.0 and its built-in multimedia capabilities.*) The next obvious, and very big step, will be tele-conferencing — (have the meeting right-on-your-computer!) While it's yet a long-range concept for the Macs, it's going to happen soon. **RadiusTV** is a very impressive interactive set of media tools, and it's made the top of my wish-list (*retail prices start at \$3000*).

Need more memory?

I've been preaching it for months. Get a RAM memory upgrade—to 4 Mbytes or more and unleash the untapped power of your Macintosh! RAM chips continue to be a bargain. Call RTSS at x5774; they can solve those, "NOT ENOUGH MEMORY" message blues.

HyperX 4.0

Last month I introduced several new products that will appear this fall when HyperCard 2.0 is finally released. **HyperX 4.0** is very interesting, if you're into expert systems. It's a major upgrade for Artificial Intelligence buffs. Users of HyperX 3.0 will be able to upgrade to Version 4.0 for \$99. (A new package retails for \$199.)



HyperX 4.0

HyperX is designed to help "content experts" within a business or profession share their knowledge through applications simple enough to be followed by non-technical people. I

tested **HyperX 3.0**, found it unacceptably slow, and promptly put it back on the shelf. However, the new version is supposed to be 400-percent faster. When WKSG gets the new upgrade we'll see if it's still a mule or has become a race horse.

ICSD TRAINING SCHEDULE

November 1990 - January 1991

COMPUTING SERVICES CLASSES

Bldg. 50B, Rm. 1237

The following course is offered by Computing Services. There is no charge for this class. To enroll, obtain your supervisor's approval and then contact Rita McLean, x5872.

Intro. to C Programming	Nov. 19, 20, 26, 27 10-12 Noon	FOCUS: Report Preparation	Nov. 26,27 1:15 - 5 PM Nov. 28,29,30 8:30 - Noon
Sun Open Look Orientation	Nov. 12, 16 1 - 3 PM	Electronic Mail: Survey	Nov 27 8 AM - 10 AM

If there is sufficient interest (we need to hear from at least 10 people), we'll schedule an **Introduction to UNIX** class in February. Please contact Rita McLean at x5872 to sign up.

* Prefer current UNIX or VMS/CSA account.

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, x6858.

(Those classes with asterisks (*) prepended are already full.)

IBM-PC: Bldg. 50B, Rm. 1237

Microsoft Word for the IBM/PC * Nov. 12, 13, 19, 20
3 - 4:30 PM

Jan. 22, 24, 29, 31
3 - 4:30 PM

NEW

Introduction to Windows for the IBM/PC * Nov. 1, 2
9 - 10 AM

Dec. 4, 5
9 - 10 AM

Introduction to PC-DOS Nov. 13, 16
1 - 2:30 PM

Dec. 11, 13
1 - 2:30 PM

NEW

Microsoft Word for Windows Jan 8, 10, 15, 17
3 - 4:30 PM

Macintosh: Bldg. 50B, Rm. 1229 (cont.)

Basic Macintosh Nov. 21
12 - 1 PM
no sign-up req.

Intro. to MacDraw * Nov. 13, 14, 15
10:30 - Noon
Dec. 4, 5, 6
10:30 - Noon

Basic Intro. to FileMaker * Nov. 28, 30
1 - 3 PM
Jan. 23, 25
1 - 3 PM

Beginning Microsoft Word * Nov. 13, 14, 15
1 - 3 PM
Dec. 11, 12, 13
10 - 12 Noon

Beg. Excel Spreadsheet Nov. 26, 28, 30
9 - 11 AM

NEW

Introduction to PowerPoint Nov. 27, 29
1-2 PM

The Workstation Group also offers **noontime classes** (no sign-up required) in the following subject:

Basic Macintosh Class 11/21 50B/1229

See *Workstation Scene* Newsletter Articles for more details on these workshops.

YES, I would like to receive the LBL Computing Newsletter

NAME

ADDRESS

.....

CITY

STATE

ZIP

PHONE

Return to LBL Computing Newsletter
Computer Center Library - MS 50F
One Cyclotron Road
Berkeley, CA 94720

Attention: **NL MAILING LIST**

COMMENTS, QUESTIONS, SUGGESTIONS FOR FUTURE ARTICLES:

Lawrence Berkeley Laboratory
Computer Center Library - MS 50F
One Cyclotron Road
Berkeley, CA 94720
ATTN: Newsletter Mailing List

NAMES AND NUMBERS TO KNOW

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

INFORMATION AND COMPUTING SCIENCES DIVISION

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

OFFICE OF COMPUTING RESOURCES

Head: Dave Stevens (DFStevens)7344 50B 2270B

COMMUNICATIONS & NETWORKING RESOURCES

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

NETWORK SYSTEMS

Bob Fink (RLFink)5692 50B 2258B

COMMUNICATIONS & NETWORKING FACILITIES

Sig Rogers (SGRogers)6713 50B 2258F

TELEPHONE SERVICES

Sam Gibson (FSGibson)4234 50B 2258D

COMPUTING SERVICES

Head: Marv Atchley (FMAatchley)5455 50F 117

Deputy: Harvard Holmes (HHHolmes)5742 50F 115

Central Office5871,2 50F 125

VMS SYSTEM

Eric Beals (ERBeals)5351 50F 143

System Manager: Gil Johnson (GPJohnson)6211 50B 1225

UNIX SYSTEM AND DISTRIBUTED PRINTING

Craig Eades (CAEades)6569 50F 142

UNIX (DHCleveland)5336 50F 110

Distributed Printing (RERendler)5629 50F 129

System Manager: Roger Cochran (RJCochran)5565 50F 127

USER RESOURCES

Jerry Borges (JTBorges)5568 50F 144

Accounting7008 50B 1232A

HELP DESK5981 50B 1215

Math Libraries4749 50F 114

Library/Document Sales7008 50B 1232A

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

UNIX and Cluster:

Software Evaluation and Acquisition5568 50F 144

GRAPHICS

Nancy Johnston (NEJohnston)5093 50F 145

COMPUTING FACILITIES

Connecting a Remote Terminal5354 50B 2215

Terminal Repair

Paul G Murray (PGMurray)5354 50B 2215

Operations Area6211 50B 1215

COMPUTING APPLICATIONS

Applications Group

Head: Jerry Borges (JTBorges)5568 50F 144

WORKSTATION GROUP

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

Software Evaluation and Acquisition6858 50B 2231

IMAGING TECHNOLOGY GROUP

Head: William E. Johnston (WEJohnston)5014 50B 3238A

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

NETWORK CONTACT INFORMATION

LBLnet New Installations & Trouble Calls

Ted Sopher (TGSopher)4559, 5354 50B - 2258

DECnet Administration

William Jaquith (WDJaquith)6966 50F - 146

IBM PC & Mac Network Administration

William Jaquith (WDJaquith)4388 50B - 2231C

Nancy Travis (NJTravis)7690 50B - 2231B

Distributed Printing/Kinetics FastPath

administration and requests

Bob Rendler (RERendler)5629 50F - 129

AppleTalk & Kinetics FastPath Support5354 50B - 2215

LBLnet troublestrouble@lbl.gov

LBLnet comments or non-critical trouble reportslblnet@lbl.gov

Internet administrationip-request@lbl

LBL Postmaster for Lab-wide mailpostmaster@lbl.gov

Network Advisory Group (NAG)nag@csam.lbl.gov

ICS

ICS Access Names

[VAX 64xx's (Generic)CSA]

VAX 6420 (VMS)CSA1

VAX 6420 (VMS)CSA2

VAX 6410 (VMS)CSA3

SUN-3/280 (UNIX 1)UX1

SUN-3/180 (UNIX 3)UX3

SUN-4/490 (UNIX 5)UX5

SUN-3/180 (ISD)ISD

Dial-up Access Numbers for ICS

Incoming Baud Rate	Connect Baud Rate	Number
3/12/2400 BPS.....	3/12/2400 BPS.....	486-7930
3/12/2400 BPS.....	9600 BPS.....	486-7900
9600 BPS.....	9600 BPS.....	486-7996

Local TYMNET Access Numbers for ICS

	1200 BPS	2400 BPS
Oakland	430-2900	633-1896
Walnut Creek/Concord	935-0370	935-1507
San Francisco	974-1300	543-0691
Santa Clara	408-432-3430	432-8618
Palo Alto	415-366-1092	361-8701
San Jose	408-432-3430	432-8618
Fremont	490-7366	490-7366
Davis	916-758-3551	
Burlingame	415-588-3043	
Vallejo	707-644-1192	
Antioch	754-8222	
Pleasanton	462-2101	

NERSC Consulting Number is 422-1544

Lawrence Berkeley Laboratory
Computer Center Library - MS 50F
One Cyclotron Road
Berkeley, CA 94720