

# Lawrence Berkeley National Laboratory

## LBL Publications

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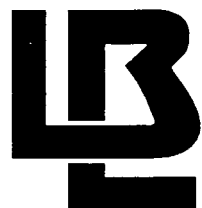
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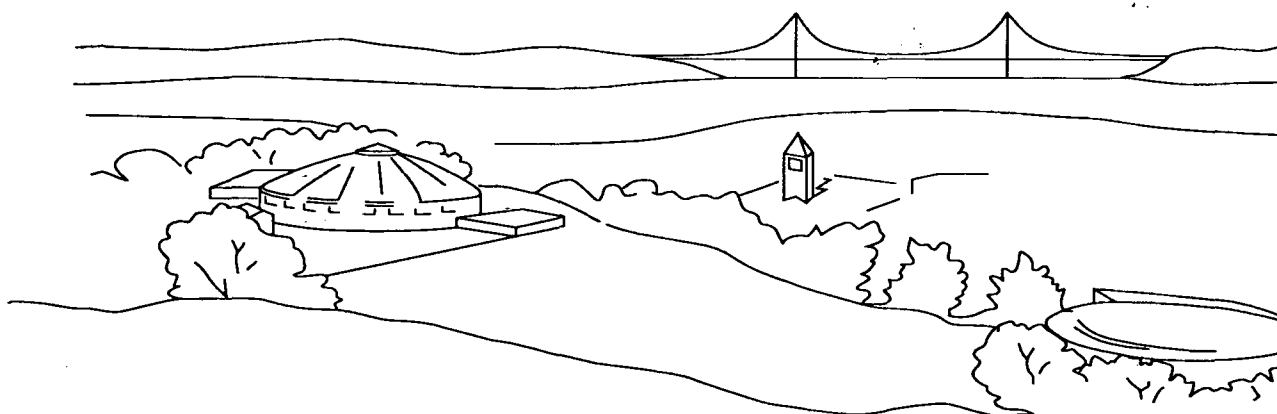
JULY  
1989



# COMPUTING NEWSLETTER

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Bldg. 50 Library.

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PUB-429 7/89 1900

## 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

### ADVANCED DEVELOPMENT PROJECTS

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

### 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

### COMPUTING SERVICES

Head: Marv Atchley (FMAtchley) ..... 5455 50F 117  
Deputy: Harvard Holmes (HHHolmes) ..... 5742 50F 115  
Central Office ..... 5871, 2 50F 125

### VMS SYSTEM

Eric Beals (ERBeals) ..... 5351 50F 143  
System Manager (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 119  
System Manager (RJCochran) ..... 5565 50F 127

### USER RESOURCES

Jerry Borges (JTBorges) ..... 5568 50F 144  
Accounting ..... 7008 50B 1232A  
**HELPSDESK** ..... **5981 50B 1215**  
Math Libraries ..... 4749 50F 114  
Library/Document Sales ..... 4242 50B 1232B  
Opening a New Account (PSBean) ..... 7008 50B 1232A  
UNIX and Cluster  
Software Evaluation & Acquisition ..... 5568 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 129  
Operations Area ..... 6211 50B 1215

### Develcon Problems & Terminal Repair

(PGMurray) ..... 5354 50B 2259

### COMPUTING APPLICATIONS

Applications Group  
Head: Jerry Borges (JTBorges) ..... 5568 50F 144

### WORKSTATION GROUP

Group Leader: Richard LaPierre (RLLaPierre) ... 4692 50B 2245  
Software Evaluation & Acquisition ..... 6858 50B 2231

### 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 BPS ..... 486-4959

All Machines - 1200 BPS ..... 486-4979

All Machines - 2400 BPS ..... 486-4969

### 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

# ICSD TRAINING SCHEDULE

July 1989 - September 1989

## COMPUTING SERVICES CLASSES

Bldg. 50B, Rm. 1237

The following courses are offered by Computing Services. Except for the FOCUS class, there is no charge for these classes. To enroll, obtain you supervisor's approval and then contact Pat Bean, x7008.

Electronic Mail: Survey	July 11 10 AM - Noon	Intro. to C Programming	Aug. 7, 8, 9, 10 10 AM - Noon
Introduction to VMS	July 25 & 27 10 AM - Noon	FOCUS: Basic Report Generation	Aug. 14, 15 9 AM - 4 PM

## 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 (\*) appended are already full.)*

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

Beginning <i>Total Word</i>	July 11, 13, 18, 20 10:30 - 12 Noon
Kermit File Transfer	July 19 1:30 - 3 PM
Introduction to PC-DOS	July 12 & 14 10 - 11:30 AM
Introduction to PC Mail	July 13 9 - 10 AM
<i>Microsoft Word</i> for the PC	July 18, 20, 25, 27 3 - 4:30 PM
	Aug. 16, 17, 22, 24 3 - 4:30 PM

### Macintosh: Bldg. 50B, Rm. 1229

Beg. <i>Excel</i> Spreadsheet	* July 24, 26, 28 1 - 3 PM
	* August 21, 23, 25 10 - 12 Noon
	Sept. 25, 27, 29 10 - 12 Noon
Intro. to <i>MacDraw II</i>	* July 11, 12, 13 10:30 - Noon
	Aug. 1, 2, 3 10:30 - Noon

### Macintosh (continued):

Beginning <i>MS Word 4.0</i>	* July 11, 13, 18, 20 1 - 2:30 PM
	Aug. 15, 17, 22, 24 1 - 2:30 PM
	Sept. 12, 14, 19, 21 1 - 2:30 PM
Basic Intro. to <i>FileMaker</i>	* July 12, 14 1 - 3 PM
	August 9, 11 1 - 3 PM
Introduction to <i>HyperCard</i>	July 19 10 - 11 AM
	Sept. 13 10 - 11 AM
<i>HyperCard</i> - Creating Cards and Stacks	July 24, 26 10 - 11:30 AM
	Sept. 19, 21 10 - 11:30 AM
<i>HyperCard</i> - Basic Scripting	Sept. 26, 28 10 - 11:30 AM

The Workstation Group also offers **noon time classes** (no sign-up required) in the following subjects: 2nd and 4th Wednesday of each month, Basic Macintosh Class; every 1st and 3rd Wednesday of each month, Microsoft Word for the Mac Workshops. Contact Carole Casaretto of the WKSG, x6858, for additional information.

# LBLnet NEWS

Bob Fink  
Sig Rogers

## LBLnet Phase II Building Schedules Update

The ICS Subcontract requires extensive testing of the LBLnet fiber optic cable plant installed as part of the ICS Project. This testing has not yet been completed and is delaying our use of these fibers.

The schedule below is based on our current estimate of availability of the fiber plant. Each line shows the planned date of attachment of either Routed or Bridged LBLnet to the building indicated.

If you have further questions about this schedule, please call Bob Fink (x5692), Sig Rogers (x6713), or Ted Sopher (x4559).

Bldg. 1 (Donner)	13 Oct 89	Routed LBLnet
Bldg. 2 (AML)	14 Aug 89	Routed LBLnet
Bldg. 3 (Calvin)	1 Dec 89	Routed LBLnet
Bldg. 5	21 Sep 89	Routed LBLnet
Bldg. 7	28 Sep 89	Bridged LBLnet
Bldg. 16	13 Sep 89	Routed LBLnet
Bldg. 25	15 Dec 89	Routed LBLnet
Bldg. 29	6 Sep 89	Routed LBLnet
Bldg. 62	23 Oct 89	Routed LBLnet
Bldg. 66 (SSCL)	22 Nov 89	Routed LBLnet
Bldg. 69	30 Oct 89	Bridged LBLnet
Bldg. 72 (NCEM)	31 Jan 89	Routed LBLnet
Bldg. 74	early Jul 89	Routed LBLnet
Bldg. 76	29 Aug 89	Bridged LBLnet
Bldg. 77	14 Nov 89	Routed LBLnet
Bldg. 80	6 Oct 89	Routed LBLnet
Bldg. 83	7 Nov 89	Routed LBLnet
BARRNet (UCB)	7 Aug 89	ext. Internet access

Routed LBLnet means Decnet and Internet (tcp/ip) service. XNS, LAVc and other protocols are only supported on the Bridged LBLnet unless their use is entirely local to a subnet of the Routed LBLnet.

Building 74 is being used as a test for the new ICS fiber, thus it is scheduled during the ICS pre-cutover testing period.

If a building requires an LBLnet service other than that scheduled above (e.g., Building 7, scheduled for Bridged LBLnet, may need Routed LBLnet), it will be accommodated as soon as practically possible.

## Network Contact Information

LBLnet Manager Sig Rogers, x6713.....[sgrogers@lbl](mailto:sgrogers@lbl)

LBLnet planning: Bob Fink, x5692.....[rlfink@lbl](mailto:rlfink@lbl)

LBLnet new installations:

Ted Sopher, x4559, x5354.....[tgopher@lbl](mailto:tgopher@lbl)

LBLnet trouble calls:

Ted Sopher, x4559, x5354

also.....[trouble@lbl](mailto:trouble@lbl)

LBLnet comments or non-critical trouble reports:

.....[lblnet@lbl](mailto:lblnet@lbl)

For Decnet administration:

Darren Griffiths, x6966

For Internet administration:

send a copy to....[ip-request@lbl](mailto:ip-request@lbl)

and to.....[dagg@lbl](mailto:dagg@lbl)

For IBM PC and Macintosh network administration:

William Jaquith, x4388.....[wjquith@lbl](mailto:wjquith@lbl)

or Richard LaPierre, x4692

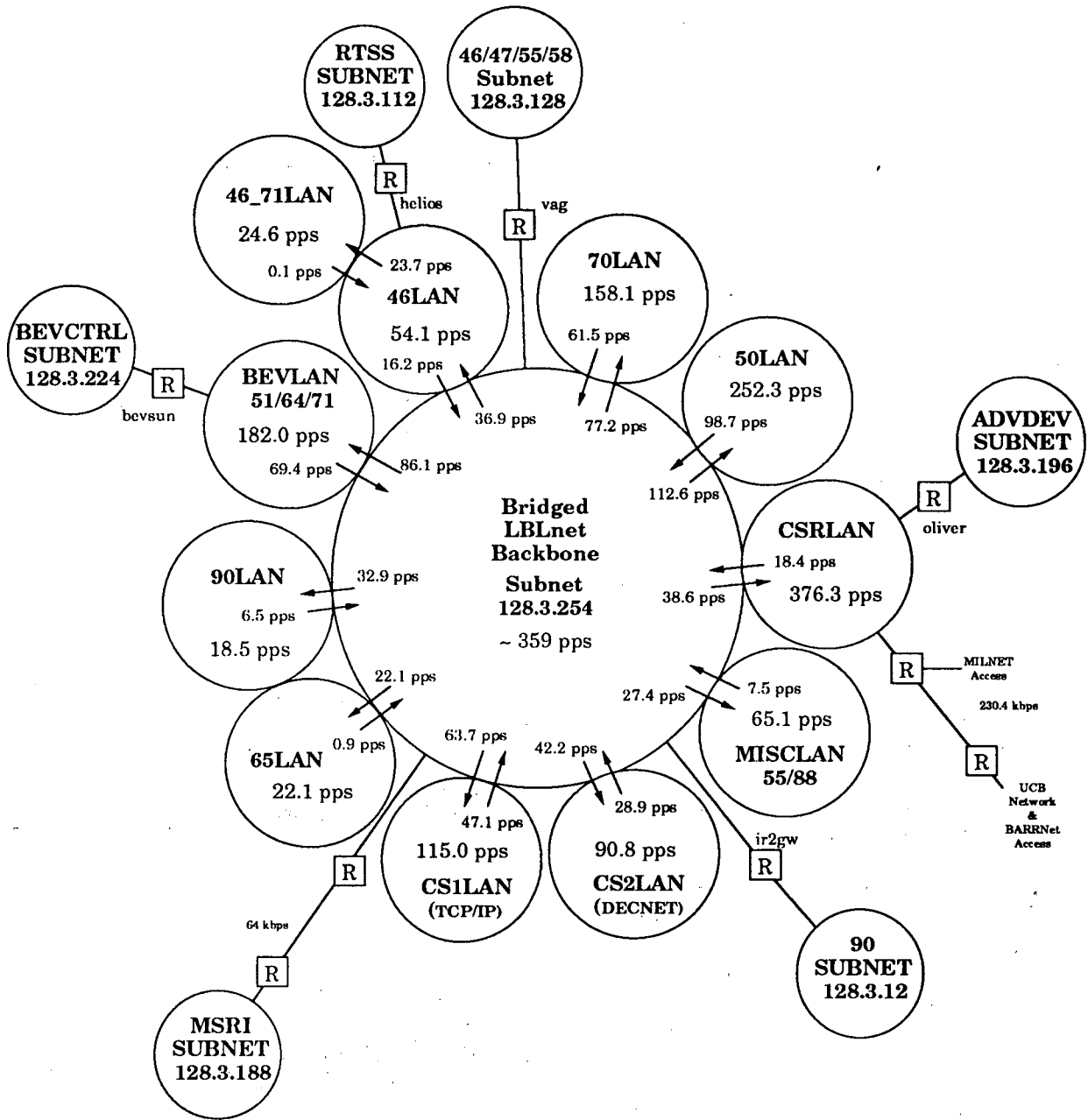
To contact the Network Advisory Group (NAG):

[nag@csam.lbl](mailto:nag@csam.lbl)

Distributed Printing and Kinetics FastPath administration and requests:

Bob Rendler, x5629.....[rarendler@lbl](mailto:rarendler@lbl)

LBL Postmaster for Lab-wide mail: .....[postmaster@lbl](mailto:postmaster@lbl)



## LBLnet Activity 1-24 May 1989

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.

**R** = IP Router

# IP ADDRESSES ON LBLNET: FURTHER DISCUSSION

Revision 1.1

Darren Griffiths - Computing Services  
 Craig Leres - RTSS  
 Harvard Holmes - Computing Services  
 Craig Eades - Computing Services

In last month's Newsletter, we discussed the problems posed by the shortage of IP addresses on the 128.3.254 bridged network part of LBLnet; we outlined some possible solutions. In this article, we will discuss some methods of implementation.

### SHIFTED SUBNET MASK

As mentioned before, the plan considered most workable involves changing the format (actually, interpretation) of the 16 low-order (out of 32) bits of the IP address that we control. Currently, a "subnet mask" in the systems attached to the network divides these 16 bits into two 8-bit fields, allowing 254 hosts in each of 254 subnets (first and last hosts are reserved for broadcast addresses). This subnet mask can be shifted to provide 10 bits in the host field, allowing for 1022 hosts on the network, clearly a major improvement over the present situation.

This approach will allow us to put many more hosts on the unrouted 128.3.254 subnet. (We call this subnet "unrouted" because the physical Ethernet that it runs on covers a large part of central LBL without using protocol routers. Although this network is not partitioned by routers, it is partitioned by Ethernet bridges to help confine local traffic to local Ethernet segments.) While this shifted subnet mask scheme drastically reduces the number of available subnets, LBL has been given a second "class B" address (131.243) which, together with planned Ethernet wiring, should provide all of the necessary subnets.

### Implementation

We have 16 bits of address space in each of our class B addresses. The 131.243 network is not currently in use. In Fig. A, we show how the 128.3 network is used



Figure A

In Fig. B, we show how the backbone network, 128.3.254, utilizes the address space.

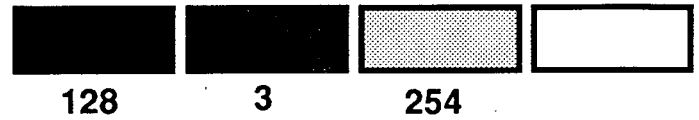


Figure B

The plan is to move the subnet mask over two bits to allow a lot more hosts on the backbone. See Fig. C.

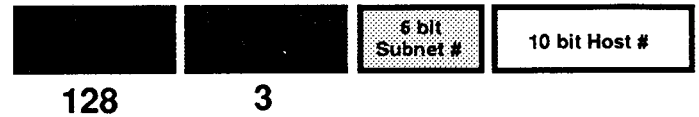


Figure C

The most obvious problem with this scheme is that the 254 subnet number no longer fits into the subnet portion of the address. This is actually not a problem because hosts on the 254 subnet will be able to maintain the same addresses. For example, the host UX1.LBL.GOV has the IP address 128.3.254.19. Fig. D shows how it looks in the current scheme.

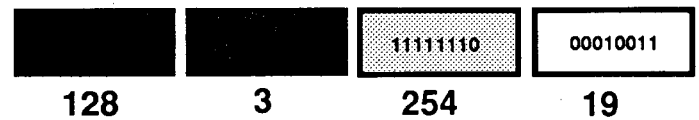


Figure D

Fig. E shows how it would look with the new subnet mask (the address would remain the same).



Figure E

This address will still be written 128.3.254.19, since the periods divide 8 bit pieces, not (necessarily) networks, subnets and hosts.

Another problem: some of the existing subnets won't fit into the address space left for the subnet number. Most of the subnets belong to Kinetics Boxes. The ones that don't fit within the new subnet mask can be moved to another subnet fairly easily. For new subnets we plan to use the second class B address, 131.243, for the routed backbone and to put all



subnets on this network. Some subnets might not be able to move to this network; those subnets will be added to the bridged 128.3 network. To make room for them, any subnets on the 128.3 network will be moved to the 131.243 network if possible.

#### Other Possible Problems

- Some hosts may not be able to have network masks that are not on 8 bit boundaries. We hope that not many of these hosts are active currently on the hill, and if any are, new software could be made available for them. Two versions of software for IBM PCs have been tested, PC/NFS and FTP; the current versions of both of these packages do support the different subnet masks. NCSA Telnet for Macintoshes also seems to be able to configure the different subnetmask, although the new configuration hasn't been tested yet.
- Some routers might have problems gaining access to the 131.243 routed network. This usually involves the physical wiring. These routers will have to use one of the 62 subnets on the 128.3 network.
- Some VXworks boxes will need to move to the 131.243 network because there aren't enough subnets available for them on the 128.3 net. When they move, the routing they use should be almost identical to that of the existing setup.
- The router between the 128.3 network and the 131.243 network could get overloaded due to the large amount of traffic. The routers to the outside world will probably be on the routed backbone, a subnet of 131.243. Thus, all traffic between the possible 1022 hosts on the bridged network (more if the subnets are used) and anywhere else would have to go through this single router. If this occurs, there is no easy fix; however, the problem can be alleviated by limiting unnecessary hosts on the bridged network and upgrading the router if it becomes overloaded. It is likely that a bridged network with 2000+ hosts on it and the Local Area VAX cluster (LAVc) will have serious problems with excessive broadcast traffic long before a router will be overloaded, so this will have to be actively monitored as well.
- Some people connected to the bridged network might not change their network mask, either because they don't know how or they don't get word that a change is necessary. There is no reason for this to be disastrous; there are people on the network with the wrong network mask right now. If important systems are kept within the same address space currently available, the users

should be able to continue without changing their network mask. However, they would not be able to reach hosts with IP addresses in the new address space. It would probably be a good idea to have the router between the bridged and routed network use CSAM's IP address (128.3.254.6). This would allow users who don't change anything to continue to reach all of the systems they currently access.

#### Kinetics Fastpaths

The Kinetics Fastpaths will be able to fit into the new scheme in two ways.

- Currently they treat the *Apple Talk* network as a subnet to avoid using extra addresses on the 128.3.254 network.
- They can use proxy ARP. This would mean that the Fastpath would answer ARP requests and for a set number of addresses dynamically allocated to Macintoshes on the *Apple Talk* network. This option is currently available in the existing Kinetics code and is commonly done at many sites. This change would mean that Fastpaths would be allocated blocks of addresses within the network they are connected to instead of being allocated an entire subnet. If there are not enough addresses in their local network, it is believed that they could still be configured in the same way as they currently are, although this should be unnecessary in most cases. As with all systems connected to the bridged network they should be moved over to the routed network as soon as possible.

#### Future of the network

The Figures on the next two pages show pictures of what we hope the network will look like by the end of the year. Fig. 1 shows an example of the internal network and the possible ways to connect hosts; the transition to this network will begin with the subnet mask change. Fig. 2 shows plans for the network as a whole, including external connections. This is subject to changes, since which networks are connected to which routers, and the connection of external networks is still being discussed in the NAG (Network Advisory Group) meetings. People interested in this should attend a future NAG meeting or contact Computing Services.

#### Schedule

The changes to the network would probably occur in the following order. After everything is completed, the new address space on the bridged network will be made available to users. Most of the actual changes to the network cannot begin until after ICS cutover; however, testing of the equipment can begin straightaway.

Final Network

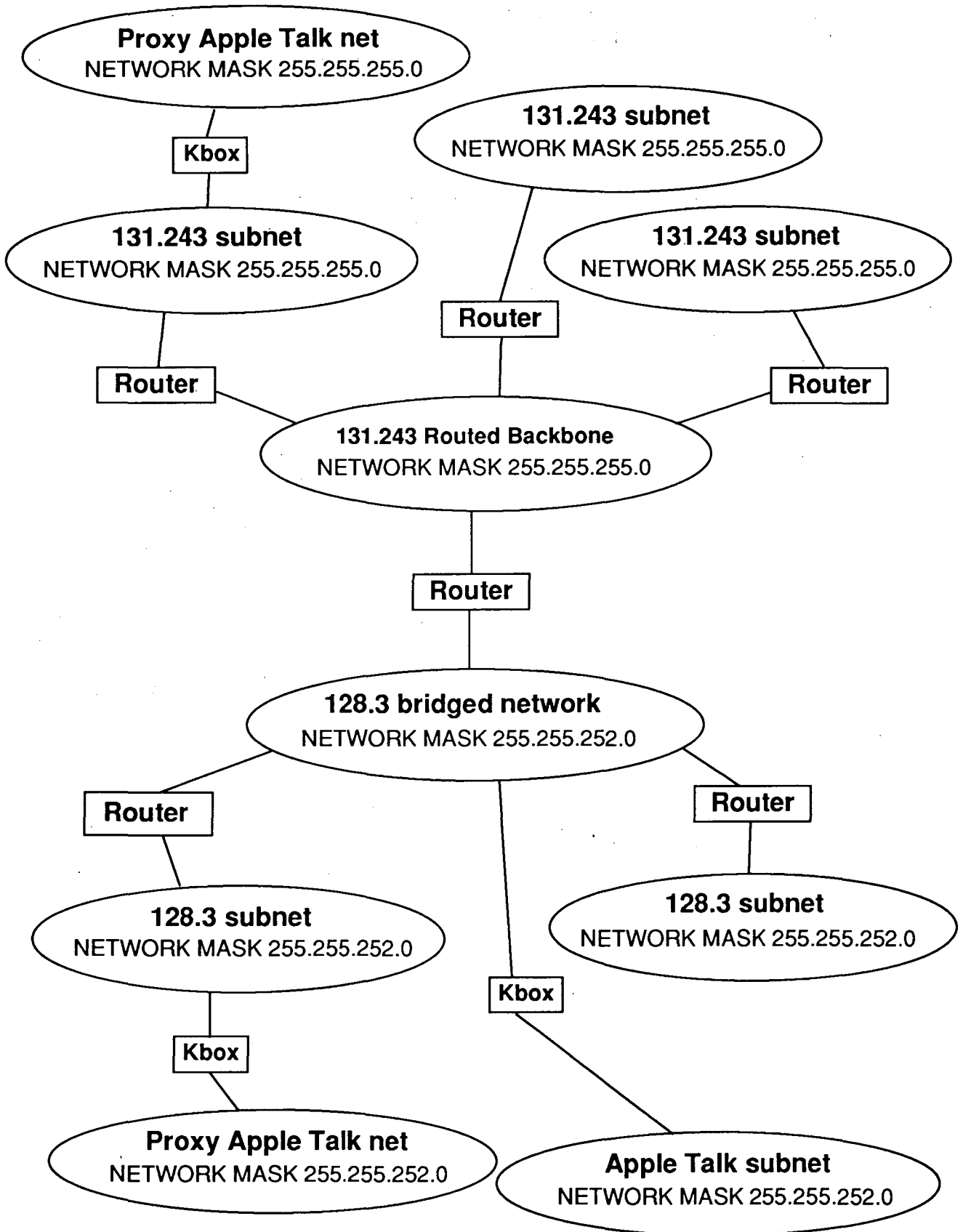
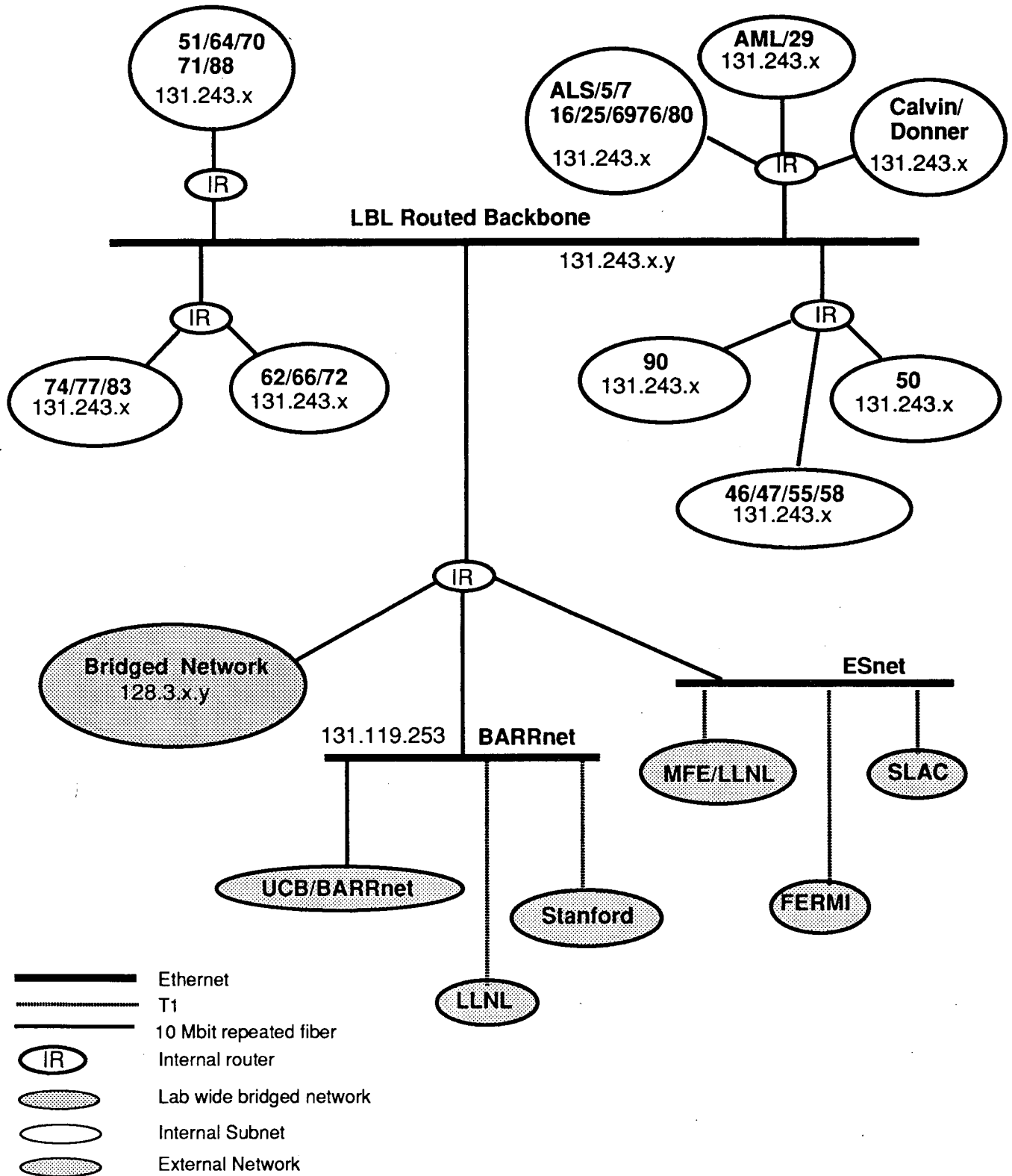


Figure 1



**LBL IP Topology (the future)**

Darren Griffiths CS/ICSD 13 June 1989

Figure 2

1. Arrange for the 131.243 address to be advertised to the rest of the world. This is underway.
2. Test all equipment that needs to change to insure that things work in the new environment. We believe that all of the software in use at LBL will work correctly. (We expect to have critical software tested by the end of July.)
3. Establish the routed backbone and put a router between it and the bridged network. This backbone will be created in mid-June during test of the ICS cables. The creation of this backbone is the main step that needs to be taken. After this backbone is in place, new subnets can be set up fairly easily. This backbone will not be fully implemented until after ICS cutover and after the internal routers have been delivered and installed in late July.
4. Move existing subnets over to the routed backbone where possible. (This could take up to two years, proceeding as LBLnet wiring is installed.)
5. Move additional hosts over to the routed subnets where possible. (This will be a continuing policy.)

All of these steps need to be taken before the transition will be complete. However, there is no reason why people cannot change their netmask and use the new IP numbers before the change is completed. The only difficulty with this is that subnets over the "line of death" mark in the subnet mask need to be moved into the lower address space and it may be difficult to assign new subnets until everything has changed because of the limited subnets available in the new address space. Because of the crunch on IP numbers, all subnets requiring it will be reassigned during the month of June. On July 18th netmasks for all systems on the 128.3 bridged network will have to change. If you have difficulty with making this change, contact the Computing Services HELP DESK (x5981). If you don't make the change, then you may be able to reach all existing hosts, but you probably will not be able to reach the new hosts that will be placed on the network. Following is a list of systems and how you make the change on those systems.

**Unix hosts:** If your internet address begins with 128.3, your system is on the bridged network, and you must configure your ethernet interface with the subnet mask 255.255.252.0, or 0xffffc00 if your system does not support the dot (".") notation. Thus, on the "ifconfig" command line, or in the appropriate network file, include the configuration option "netmask 255.255.252.0" or "netmask 0xffffc00".

Here's an example of a "ifconfig" command with the netmask option for the 128.3 addresses:

```
ifconfig interface-device 128.3.NNN.MMM netmask  
255.255.252.0 -trailers up
```

If your system is a client of some Sun or Ultrix server, you should contact the server's system manager to coordinate the required subnet mask changes.

**NCSA/TELNET hosts:** If you are running NCSA/TELNET on an IBM/PC, or if you are using a Macintosh with a dedicated Ethernet card you should contact the Workstationstation Group (x6858) for help.

**VMS/MULTINET hosts:** Execute the command

```
@MULTINET:CONFIGURE
```

You will be asked a series of questions, answer them the same way you did when you originally configured your system until you reach the network mask. Then you should answer 255.255.252.0 and restart multinet.

**PC/NFS HOSTS:** Edit the file */nfs/network.bat* and modify the command net subnet 0xffffc00 so it reads net subnet 0xffffc00. If the command line is net subnet \* then your system is getting the subnet from a yellow pages server and you should contact the manager of the server for help. Forward comments and questions

to Darren Griffiths (x6966)

VMS Mail: **lbl::DAGriffiths**

Software Tools Mail

or Unix: **DAGriffiths@lbl.gov**

or to Craig Leres, RTSG/EE (x6411)

VMS Mail: **lbl::CALeres**

Software Tools Mail

or Unix: **CALeres@lbl.gov**

Harvard Holmes, CS/ICSD (x5742)

VMS Mail: **lbl::HHHolmes**

Software Tools Mail

or Unix: **HHHolmes@lbl.gov**

Craig Eades, CS/ICSD (x6569)

VMS Mail: **lbl::CAEades**

Software Tools Mail

or Unix: **CAEades@lbl.gov**

# THE HELP DESK

## CYRILLIC T<sub>E</sub>X FONTS AT LBL (continued)

Martin Gelbaum

The following are some corrections and additions to the article in last month's newsletter article on cyrillic T<sub>E</sub>X fonts.

First, here are the three lines needed to set up the use of these fonts in this T<sub>E</sub>X file:

```
\input cyracc.def
\font\twelvecyr=mcyr10 scaled\magstep1
\def\cyr{\twelvecyr\cyracc}
```

The article had "twlvecyr" instead of "twelvecyr" on the third line.

Second, Table 1 of the article has an error. To "reach" the characters **Ӏ** and **Ӑ**, type `\u \i` and `\u I`, respectively. (As it happens, `\u i` also yields **Ӏ**.) However, `\u I` is NOT valid.

Third, Mr. David Mostardi kindly informed me that the upper case characters **Ӏ** and **Ӑ**, (known as "hard sign" and "soft sign", respectively), are used when a Russian word is written in all upper-case, such as in the title of an article, or on the marquee of a building.

The readers' cooperation is much appreciated.

## UPDATE OF TeX AND LATEX ON CSA

Marty Gelbaum

We will update the TeX and LaTeX programs on CSA at the beginning of July.

### TeX 2.93

The current version of TeX is 2.0.0; the new version will be 2.93. However, the differences between the versions are very minor.

### LaTeX 2.09 (1/25/88)

The current version of LaTeX is 2.09, revised on January 7, 1986; the new version will also be numbered 2.09 but was revised on January 25, 1988. Also, the new version of LaTeX will not be vastly different from what we are currently running but it should provide some useful improvements.

We will also try to update TeX and LaTeX on UX1 and UX3 in July if possible.

Forward comments and questions to me at x4749, or

VMS Mail: `lbl::M_Gelbaum`

Software Tools Mail

or Unix: `M_Gelbaum@lbl.gov`

### SXLPS

## SIXEL-TO-POSTSCRIPT CONVERSION PROGRAM

Marty Gelbaum

"SXLPS," a public-domain program on CSA, converts SIXEL format graphics files into PostScript. Now, users can print such files on PostScript printers in the LBL Distributed Printing system.

SXLPS is new on CSA; tests have been successful. Since it is public-domain, we cannot guarantee that bugs will be fixed.

Sample usage: type

```
SXLPS -R300 -o file.ps file.sixel
```

to convert the SIXEL file "file.sixel" to PostScript and store the result in "file.ps". Print "file.ps" on the ap4 Apple LaserWriter with the command

```
lpr -Pap4 file.ps
```

For details, see the CSA HELP article "SXLPS".

Forward comments and questions to me at x4749, or

VMS Mail: `lbl::M_Gelbaum`

Software Tools Mail

or Unix: `M_Gelbaum@lbl.gov`

*Use newname, not rename*

## WILD CARD RENAMING IN VMS

Ed Sheena

The VMS `rename` command will not let you make partial changes to multiple filenames using wild cards. For example, you can't use

```
$ rename *JU89.DAT *JUL89.DAT
```

to change

```
01JU89.DAT, 02JU89.DAT, 03JU89.DAT to
01JUL89.DAT, 02JUL89.DAT, 03JUL89.DAT
```

However, the program `newname` in `sys_utilities` will do the job. Put the following line in your `LOGIN.COM`:

```
$ newname ::= $sys_utilities:newname
```

Then type

```
$ newname *JU89.DAT *JUL89.DAT
```

to make your changes.

Similarly, to change

```
JAN01.DAT, JAN02.DAT, JAN03.DAT to
JAN0189.DAT, JAN0289.DAT, JAN0389.DAT,
```

type

```
$ newname JAN*.DAT JAN*89.DAT
```

The rules for this utility are as follows:

- ✓ Exactly one wild character "\*" must appear in both names; it must occupy the same relative position in the name, i.e. beginning, middle or end. The program cannot handle multiple "\*"s nor any "%" character.
- ✓ No version number must appear in either name, and the version numbers in the new names will assume those of the corresponding old names.
- ✓ The program creates a temporary file `ZZZZZ.TMP` in your directory, which is removed when the program ends. It also creates a file `ZZZZZ.COM`, which contains the rename commands, which are executed, and the file is left behind.
- ✓ Remember that under VMS 5.1, the files must have "OWNER delete" permission in order to be renamed.

# GENERAL NEWS

## VMS VERSION 5.1-1 UP AND RUNNING

Harvard Holmes

VMS V 5.1-1 is now up and running on the CSA cluster. While we've heard that some users have observed modest increases in execution speed, we expect little change for most users.

Prior to installing this version on CSA, we tested it extensively on our CSB cluster of workstations and the problems we encountered were dealt with during that test period. Some unanticipated difficulties were experienced, however, when we put it on the cluster. Here are some details, including some (annoying) changes in VMS itself.

### VMS-RELATED

- Changes in permissions are required for certain operations (e.g., **rename**).
- "\$" is now required in Column 1 for DCL commands in scripts.

### MULTINET

The installation of Multinet is a change from the Wollongong-based (and RTSS-supported) software formerly used. While the software itself installed with little difficulty, differences in command syntax are causing trouble for users. Lack of the **rep** command is a major difficulty for some users; **rsh cp** can sometimes be substituted.

### MAIL

Problems with the mailer were mostly minor. A major annoyance, slow response time for **sndmsg**, was fixed with the conversion of the ramdisk module to V 5.1-1.

### DISTRIBUTED PRINTING

- Some Distributed Printing functions tested satisfactorily under CSB, but broke under load due to some undocumented system changes to the Lock Manager between V 5.1 and V 5.1-1. These have now been fixed.
- There were some problems with the Talaris printers; since they could only be tested on CSA, they could not be tested before VMS 5.1-1 installation.

### EUNICE

- As expected, Eunice broke when the cluster was upgraded. We have provided the most commonly-used utilities as executable images running directly under VMS (e.g., **vi**, **grep**, **sed**, **awk**, etc.) The Eunice shell itself is not available. As noted in earlier Newsletters, Computing Services does not have staff to convert and maintain the Eunice Shell, but we will install it if RTSS (or others) come up with a working version.

(Wollongong, with whom we have a license, has not provided a version of VMS V 5.1-1.)

### OTHERS

- Current versions of Computer Aided Instruction packages are not up; we haven't yet received the source required to build them.

For some examples of further problems, see this month's **Trouble Mail** section.

## MULTINET

Concurrent with the installation of VMS V 5.1-1, we have acquired, after a lengthy negotiation period, a Site License for Multinet, a TCP/IP for VMS systems. Any LBL VMS host can now install it. (Details in next month's Computing Newsletter; to meet your immediate needs, contact Darren Griffiths, x6966). NFS (Network File System) access to VMS is now an option; we are now exploring appropriate policies for NFS access to the cluster.

Forward comments and questions to me at x5742, or

VMS Mail: **lbl::HHHolmes**

Software Tools Mail

or Unix: **HHHolmes@lbl.gov**

## FOCUS CLASS IN AUGUST

Esther Schroeder

The FOCUS class scheduled for June 1-2 was cancelled. The course has since been rescheduled for Mon-Tues, August 14-15.

The course, titled **Basic Report Generation**, Course No. 102 from Information Builders Inc., will be given from 9 AM to 4 PM in the Divisional Training Room, Bldg 50B, Rm 1237. The student will learn the skills necessary to create reports from FOCUS databases.

The cost for the course depends upon how many people enroll, but should be about \$200. To insure your place in this class, and to insure that the class will be given this time, please call Pat Bean (x7008) before August 1 to register.

For more information about the contents please contact Esther Schroeder (x5306), or

VMS Mail: **lbl::ECSchroeder**

Software Tools Mail

or Unix: **ECSchroeder@lbl.gov**

# UNIX NEWS

## 12.5 MIP SPARC-1 WORKSTATIONS COMING SOON

Craig Eades

Computing Services is acquiring two Sparc-1 Sun Workstations for user evaluation; they should be here by the time you read this.

One of these will be kept in our Graphics Lab (Bldg. 50B, Rm. 1232A) for general evaluation; users will be able to borrow the other one (for short periods) to try out at their office or workspace.

The Sparc-1 is rated at 12.5 MIPs (millions of instructions per second) by Sun. For comparison, the Sun 3/50 is rated at 1 MIP.

If you are interested in evaluating the Sparc-1 in your own environment, contact me at x6569 or

VMS Mail: lbl::CAEades

Software Tools Mail

or Unix: CAEades@lbl.gov

## SUN DESK AVAILABLE FOR SUN WORKSTATION USERS

Craig Eades

Computing Services has received a limited number of copies of *Sun Write*, *Sun Paint* and *Sun Draw*, Sun's software entries into the desktop publishing area. These are available at a special price for Sun Workstation users.

Users can "test drive" them with the Sun Workstation Sparc-1 Demo at the Graphics Lab, Bldg. 50B, Rm. 1232A.

## DESKTOP DOCUMENT APPLICATIONS FROM SUN

Dave Cleveland

*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*.

*Foregoing article reprinted from the April issue of the LBL Computing Newsletter.*

\*\*\*\*\*

## UID AND GID MANAGEMENT ON UNIX

Craig Eades

With the advent of distributed file systems such as NFS, proper administration of user ids (UIDs) and group ids (GIDs) has become more important than ever. Since Unix uses these identifiers to determine file ownership, computer systems which share data by exporting and mounting each others' file systems need to insure that specific UIDs and GIDs are unique for the users in groups on both machines. Toward this end, in response to the recommendation of the Network Advisory Committee (NAG), Computing Services has begun the task of providing a uniform GID and UID space.

At the present time, this takes two forms:

- The first is the consolidation of GIDs of all known Unix-based systems at LBL.
- The second is a lab-wide mail-based UID server. The UID server insures that participating system administrators can assign unique UIDs for their users, thus reducing possible security problems inherent in network file systems.

GIDs assign the particular group affiliation a user might have. GIDs allow users to share files with members of the same group and assign certain permissions, such as read or write, to members of their group. Users can be members of multiple groups (by adding entries to the group file), but files can only be owned by a single group. GIDs map to a group name through the */etc/group* file.

UIDs determine the actual file owner, the individual who can grant or deny access to others. UIDs map to a user name through the password file.

On Unix systems, file protections are based on the theory that no two users will have the same UID. With NFS, system administrators may wish to export a file system to another computer which has conflicting UIDs or GIDs.

In this case, a user with the same UID as an imported file will be considered the owner of that file, creating obvious security problems. As a matter of policy, Computing Services will not export file systems to systems which cannot prove that they are participating in the UID/GID consolidation.

System administrators who want to participate in the UID/GID consolidation can begin by insuring that their GID assignments are not in conflict with other Laboratory systems.

System administrators should also begin using the mail based UID server to assign UIDs. The consolidation (merging and reassigning conflicting UIDs) of existing UIDs will be underway by the time this article is printed.

Documentation is available at the Computing Library, Bldg. 50B, Rm. 1232B; instructions in the use of the UID server, and the current list of registered GIDs are available by sending e-mail to me.

## SUN OPERATING SYSTEM UPGRADE SOON

Craig Eades

Computing Services will soon be upgrading UX1 and UX3 from Version 3.5 of Sun Operating system to Version 4.0.3. Major changes include

- NFS support for diskless client systems rather than ND (network disk),
- file system reorganization to simplify the administration of diskless clients,
- shared libraries to reduce program size and swap requirements, and
- incorporation of many 4.3 BSD enhancements.

UX1 and UX3 users will receive e-mail announcements as to the effective date of this change.

A complete list of changes can be obtained at the Computing Services library, Bldg 50B, Rm. 1232C. In addition, a short seminar will be offered by the Unix Group later in the summer. (Watch the Newsletter for date and time).

## CLASSES, CLASSES, WHO'S GOT THE CLASSES?

Craig Eades

Do you want to attend a Unix-related class but don't see it listed on Pg. 3 of this Newsletter? Do you have a burning desire to learn more about Unix?

Send your vote for the class(es) you'd most like to see offered by Computing Services to

[class\\_request@lbl.gov](mailto:class_request@lbl.gov)

# PHYSICS NEWS

Werner Koellner

- **PHYSICS UTILITIES**

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. You'll find information about some miscellaneous programs by typing

**Help mis\_phys**

- **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 **xxxx.OLD**.

The following Object Libraries have been updated recently:

GEANT313 ..... Version 3.13/04 (the new  
default library;  
use **CERN\$GEANT\_LIB**)

GEANT\_DI3000 ..... Version 3.13/04

MINUIT ..... Version 2.00

- **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 3.13.04 is the default version. The logical name **Cern\$Geant\_Lib** points to the appropriate object library file. The recommended link procedure is **Cern\$Library:Geant.Lnk** using linker options files

**GEANTxy.OPT**, where x is either I or B, and y is either <null> or **\_ATC**, depending on the answers to the questions that **Geant.Lnk** asks. The graphics interface for Geant is now GKS, but 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 primarily being maintained 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. Standard executable programs of **PAW\_ATC**, **METAPAW**, **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** 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.NEWS1054**. Manuals for **PAW**, and associated packages are available from the Computer Center Librarian. A new general Users Manual should become available sometime. For additional information, type

**HELP PAW**

- **APS\_LATEX**

A "compuscript toolbox" from the American Physical Society — to help you prepare TeX compuscripts for submission to **PHYSICAL REVIEW** and to participate in the author-prepared program — is available in **APS\_LATEX**. For more information, type

**HELP MIS\_PHYS APS\_LATEX**

- **APS\_WHATS\_NEW**

Weekly news capsules, issued by Robert Park of the American Physical Society, are available in APS\_WHATS\_NEW. Please type

**HELP MIS\_PHYS APS\_WHATS\_NEW**

for further information.

- **MINUIT**

A hardcopy Users Manual for Version 2.00 (D506) is now available at the Computer Center Library.

- **POISSON**

POISSON consists of four programs to solve the Poisson or Laplace equation in 2-dimensional space, primarily for Magnet Design applications. For graphic displays, the GKS-ATC package is used. A sample program may be executed by typing @Cern\$Library:Poisson.Tst Please type

**HELP POISSON**

for additional information.

- **SPICE**

I expect to receive the latest version of this general circuit simulation program in the near future. Please check with me for more information.

- **DISPLAY**

DISPLAY was developed by various members of the TPC collaboration. It is an interactive program which accepts histogram output files written by HBOOK/HPLOT as input and allows interactive manipulation, including creation of new histograms or scatter plots, fitting of functions to distributions, and many other operations. Input designed for TOPDRAWER is also accepted. Output files may be written for printing or display on most available hardcopy or display devices, or for subsequent input to TOPDRAWER. Fitting of functions to histograms is available by interactive use of MINUIT. Some minimal inline HELP text is provided.

DISPLAY is available in two versions, one for the older HBOOK3/HPLOT4 formats, while DISPLAY5 accepts and writes direct-access histogram files using HBOOK4/HPLOT5 routines. Type

**HELP DISPLAY**

for additional information.

- **TOPDRAWER**

A preliminary user manual is available in TOPDRAWER\$LIBRARY:TOPDRAWER.DOC, and may be printed on any hardcopy device. Since local modifications are still in progress, you must type

**HELP TOPDRAWER**

to receive the latest detailed information.

- **MISCELLANEOUS**

When executing some programs which use GKS, or DI3000 graphics interfaces, e.g., PAW\_ATC, or PAW\_DI3000, on some devices, e.g. VT240 terminals, the screen becomes very dim. To restore the brightness again to normal, type

**BRIGHT <cr>**

To set the background/foreground of a REGIS screen, type

**@Physics\$Manager:BSCREEN**

(to set the background to "BLACK") — or

**@Physics\$Manager:WSCREEN**

(to set the background to "WHITE").

Forward comments and questions to me at x4389, or

VMS Mail: **lbl:WOKoellner**

Software Tools Mail

or Unix: **WOKoellner@lbl.gov**

## 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:

I have a batch job that was running on CSA4 in the "CSA4\_Economy" queue. I tried to stop the job using `delete/entry=262 csa4_economy` and succeeded in stopping it. However, the job still appears in the queue with its status marked as "retained on error." Is there something I should do to kill this job properly?

### RESPONSE:

When you DELETE a job from the queue, the job ends with the status "job aborted during execution." The job entry remains on the queue, waiting for the Distributed Queue Server to reclaim it. You needn't be concerned; it will go away eventually.

\*\*\*\*

### MESSAGE:

When invoking `vi` from within `sndmsg`, it gives you "open" mode.

### RESPONSE:

This change was related to the recent upgrade of the VMS operating system and has been fixed by defining the logical name "term" at the system level, as was done by the Eunice startup command procedure.

For example, if you place the following command `$ define/job/nolog term "vt102"`

in your `login.com`, `vi` will go into "full-screen" mode in `sndmsg` or directly from DCL, with or without the system-wide logical name (if your terminal emulates a VT102).

\*\*\*\*

### MESSAGE:

In my login file, I set the process name, and then the line

```
If $status goto pep4
```

A few lines later there is the line "pep4:".

Now I am getting the message

```
%DCL-W-USGOTO, target of GOTO not found
and the line after "pep4:" is not executed.
```

### RESPONSE:

The problem is that the line "pep4:" (the label) needs a "\$" at the start of the line. The new version of VMS is more strict about requiring the "\$" at the start of non-data lines in DEC procedures.

### MESSAGE:

Tonight I was trying to backup some calculations I had made to a new tape on MT11. I was able to allocate and successfully initialize the tape, then I did

```
mount/foreign/noassist utape4
```

which worked successfully. The terminal responded with the correct name of the tape, etc. But when I executed the backup command, the computer responded that the tape was not mounted because its label did not match the one requested.

### RESPONSE:

VMS 5.1-1 makes more careful checks when mounting and accessing tapes. BACKUP now does LABEL\_PROCESSING by default, which checks to be sure the label matches the original volume label.

Use:

```
BACKUP/IGNORE=LABEL_PROCESSING
```

\*\*\*\*

### MESSAGE:

What is the protocol for `rlogin`? The command

```
rlogin lithium -l username
```

no longer works.

### RESPONSE:

The new version of RLOGIN on CSA has a different way to specify a remote user. Use

```
rlogin/user=username xxx
```

Check the documentation under HELP RLOGIN for further information.

\*\*\*\*

### MESSAGE:

This is minor, but irritates me to no end: formerly REC meant RECALL, but now one has to type the full string. Perhaps this can be fixed easily.

### RESPONSE:

There is a new DCL verb, RECOVER, whose first three letters match the first three letters of RECALL. Therefore, define the DCL symbol

```
rec*all=="recall"
```

\*\*\*\*

### MESSAGE:

I have three little remote task programs that simulate LPR, IPQ and PRINT so that files on PRAXIS can be printed on Talaris printers or distributed printing. Since the upgrade of CSA to 5.1, they no longer work the same. I had to insert symbol definitions for LPR and IPQ in the .COM files that get executed remotely.

Have you changed the way those symbols are defined at login time?

**RESPONSE:**

- 1) The Distributed Printing commands on CSA are now defined in  
LPD\_ROOT:[BIN]dist\_print\_symbols.com, rather than ETC\_DEV:eunicesym.com as they were under VMS 4.n. CSA distributed printing has not depended upon Eunice for close to two years.
- 2) The DECnet task-to-task communication may be hampered by the current performance of CSA under VMS 5.1-1. Try increasing the time allotted (in your local [PRAXIS] DECnet configuration) for the startup of remote tasks.

\*\*\*\*

**MESSAGE:**

- 1) How can I type a message to a predefined list of addresses with VMS Mail, without typing those addresses in each time? I want to send messages to the same group of people at different times.

**RESPONSE:**

Put the list of addresses in a file type DIS, separated by commas. Example:

```
$ mail file.txt """"@list""""
```

The above command will mail the file "file.txt" to the list of addresses contained in file LIST.DIS in your default directory. (The triple sets of quotes are critical.)

- 2) I am not succeeding in sending multiple copies of one file to different addresses. I have tested it with a file consisting of my address listed several times. I only received one copy.

**RESPONSE:**

You will be unsuccessful at sending multiple copies of VMS mail to yourself or anyone else. One of VMS Mail's features is to check for multiple deliveries and only send one copy. The .DIS file is expecting to see each address on a separate line. Following is a possible setup for a .dis file:

```
FILE Sept_Meeting.dis
st%"username1@lbl.gov"
st%"username2@ucbcmesa.bitnet"
st%"username3@lynx.berkeley.edu"
!pure VMS Mail address at Caltech
cithex::username4
```

\*\*\*\*

**MESSAGE:**

I noticed that the rcp and ftp programs on CSA have changed recently. In particular, rcp doesn't work at all anymore and ftp requires the VMS form of directory specification on the CSA side.

Is rcp going to be "fixed"? It is impossible to do a batch style ftp, so I need rcp for copying files to/from CSA.

**RESPONSE:**

"rcp" should be available again on CSA some time in the future; the program needs to be reworked.

For the time being, you can use the following "work-arounds" for ASCII file transfer between a Unix system and CSA.

- 1) How to copy the CSA file "csa.file" from CSA3 to UX1 using "rsh" from UX1:  
**rsh csa3 -n type csa.file > filename**  
(The '-n' option for "rsh" is crucial.) The contents of "csa.file" are entered into "filename" on UX1.
- 2) How to copy the UX1 file "ux1.file" from UX1 to CSA using "rshell" on CSA:

```
define/user sys$output filename
rshell ux1 cat ux1.file
```

The contents of "ux1.file" are entered into "filename" on CSA.

Again, these work-arounds are valid only for ASCII files.

\*\*\*\*

**MESSAGE:**

I have been getting the following message upon trying to close out a file:

```
%EDT-F-CLOSEOUT, error closing
_$1$DUS120:[DIRECTORY.SUB]FILENAME.TMP;1
as output
-RMS-F-RMV, ACP remove function failed
-SYSTEM-F-NOPRIV, no privilege for attempted
operation
```

The file's name is actually FILENAME.FOR. This is not a fatal error, just a nuisance.

**RESPONSE:**

When you edit a file named "MYFILE.XYZ" with the EDT editor, the EDT editor creates a temporary file (at some point in the editing) named "MYFILE.TMP". (This file seems to contain the updated version of your file.) This temporary file has the same protections as the file you are editing. EDT tries to delete this temporary file when you write out your original file. If the original file has protections such that the owner *cannot* delete the file, EDT will not be able to delete the temporary file either. This is what is happening with your file.

This is a new feature in EDT. Since you are the owner, you may set protection on your file such that the owner may delete it before you use EDT on it. As it happens, neither the VI editor nor the EDIT/TPU editor has this problem: both editors can write out a new version of your file even if the original version did not allow owner deletion.

\*\*\*\*

*If you want wider distribution of your comments or questions, send them to trouble. 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 include any user's name in the exchanges. . . . Ed.*

# THE WORKSTATION SCENE

## UP FRONT

[26.7.1]

### 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.

[26.7.2]

### 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. Hours are:

Mon 8 AM - 1 PM

3 PM - 5 PM

Tues - Fri 8 AM - 5 PM

We're here to help; call us (x6858).

[26.7.3]

### NEW ICS TELEPHONE TRAINING.

Computing Services' Terminal/PC Training Room (Bldg. 50B, Rm. 1237) will be used for Contel User Training Courses from June 20 through July 10. During this time, the IBM/PCs and the terminals will only be available for use from 12:30 to 2 PM.

**General Reminder:** This classroom is OPEN TO USERS when it is NOT scheduled for classes. Please check the schedule posted by its door for available times.

[26.7.4]

### TRADING POST

Items advertised here are for Laboratory use only and must be purchased with a valid account number. To place an ad, contact Bruce Burkhart, x6858.

1. **For Sale:** Printer: Diablo 1640 Daisy-Wheel (IBM DOS environment), good condition. Almost any offer accepted! Contact: Richard LaPierre, x4692.

2. **For Sale:** External Apple 3.5 Floppy Disk Drive, 800 KByte, brand new. \$283. Contact: Bruce Burkhart, x6858.



[26.7.5]

### PC-NFS UPGRADE TO 3.0.1

Sun Microsystems has announced an upgrade of PC-NFS (to Version 3.0.1). This upgrade, which is expected to ship this summer, is covered by LBL's Software Maintenance Agreement.

New features will include

- support for DOS 4.0
- support for 8-bit character set
- improved network printing
- a group of network services improvements.



[26.7.6]

### NEW PC STUFF IN THE WKSG LENDING LIBRARY

... WKSG Member Claudia Madison evaluates some good things

✓ **Derive v.1.0**, from Soft Warehouse, \$189.

This is a mathematical assistant to do

- computer algebra, including calculus, vectors, and matrices;
- 2-d display of formulas;
- 2- and 3-d function plotting.

There is no PostScript support.

✓ **Formula/One** from Ocean Isle Software

Here's another mathematical assistant, this one with a snazzy user interface, easy installation and support for converting units, making tables, and solving everything from simple linear equations to systems of non-linear equations with many unknowns. Equations and variables are entered and stored separately; variables can be entered as lists (arrays) to solve for multiple values. (Can import from standard data and spreadsheet formats.)

There is no PostScript support.

✓ **RightWriter** from RightSoft Inc., \$79.

This is a grammar checker compatible with most PC word processing files. It's not sophisticated about grammar and style but it flags obvious errors.

✓ **Correct Grammar** from Lifetree, \$99.

Here's a grammar-checking add-on to *WordPerfect*. It is not sophisticated about grammar and style but flags obvious errors.

✓ **Downscale v.1.0** from Trionum, trial kit, \$25.

This is a font generator for creating HP LaserJet Soft Fonts. Downscale trial kit provides roman and a sans-serif typefaces, usable as the basis for creating fonts in different sizes, styles, and orientations. The full set of typefaces costs \$90.

The Workstation Group has evaluation copies. Drop on by.



[26.7.7]

### STATISTICS AND SCIENTIFIC GRAPHICS FOR THE PC

✓ **STATGRAPHICS** from STSC Inc.

Thanks to UCB Campus Workstation Support Services, LBL staff engaged in teaching and research can take advantage of the UCB site license for *StatGraphics* V. 3.0, a statistics and scientific graphics package for the PC.

While *StatGraphics* will not meet every complex need, it is a decent mid-line package, with good graphics capabilities, 3-D plotting, multi-axis plotting, curve fitting, and nonlinear regression as well as data management facilities and the usual descriptive statistics. Applied math and operations research procedures include numerical differentiation, eigenvalues and eigenvectors, integer factorization, fast Fourier transforms, and linear programming solutions. Customization is accomplished through APL.

- Minimum configuration: 640K ram, 3M disk space, DOS 2.X and above. EGA/VGA graphics support.
- Supported printers and plotters: Epson, HP LaserJet, HP ThinkJet, HP Plotters, IBM dot matrix; HPGL and GSS\*CGM Metafile disk file output.

There is no PostScript support. NetPrint users can try Epson emulation.

The LBL Workstation Group distributes the program. Bring 11 (that's eleven) formatted diskettes. We will loan you a set of documentation suitable for copying. We will provide disk labels. Remember, the site license applies to students and research staff only. *StatGraphics* disks are not to be given to others or resold.

Further reading: **Analyzing Data**, Peter D. Varhol, *MIPS*, May 1989; **Statistical Analysis-Advanced**, *PC Magazine*, March 14, 1989.



[26.7.8]

### WHAT WE KNOW (AND DON'T KNOW) ABOUT WORD 4.0 ON THE MAC — SO FAR

Translation from *Word 3.0X*: Translation is automatic with the following known exceptions:

- (1) Landscape orientation has to be re-set.
- (2) Paragraph borders may be mangled.
- (3) Graphics, specifically those created with equation generators such as *Expressionist* and *MathType*, might not be copied back to the creating program.
- (4) Reduced or enlarged documents (set in the Print dialog) may have mangled page layout.

We have also had reports of trouble translating merge print files, but we haven't been able to pin down the problem.

**System difficulties:** If you have 1 MByte memory (or less -- heaven forbid): *Word 4* comes set to use 1 MByte memory, impossible if you only have 1 MByte memory to begin with. Reset it to 512K. (From the Desktop, select the **Word** program icon; **Get Info** from the Finder File Menu.)

With only 1 MByte memory, you can expect sluggish performance in **Page View** mode and/or when working with the table generator. In addition, we've had one report of crashing/screen-freezing. We were unable to duplicate this, but we found the machine running system Version 6.0 (a notoriously bad release of system software). We should all be on 6.0.2 or 6.0.3.

**LBL font users and the smart quotes preference:** Current LBL fonts (N2) do not support smart quotes. A new version of the fonts will be out soon and will take care of this problem.

**Undocumented new feature:** When a **Print Merge** data file has a problem, the program now stops, opens the data file, and highlights the problem line. No more looking for lost and/or extra commas!

**Novel use for new feature:** Need to squeeze extra text onto a page in the middle of a long document without changing any of the other pages? Try using the **Position Command** (the **Format Menu**) to place text in top or bottom margin.

**What you can do:** Let us know when you have problems. Keep a copy of the problem file. We can look at the file and/or come and look at your machine.

We'll have new features workshops July 5 and 19, Noon to 1 PM in the Mac Training room. No sign-up needed.



[26.7.9]

### SOMETHING HANDY FOR INTERESTED ENDNOTE USERS

... from *WKSG* Member Carole Casaretto

If you are a user of *EndNote*, (the bibliographic reference database) on the Mac, you might be interested in a reference style I have tailored to conform to the IEEE proceedings specifications. This reference style has numbered references in square brackets, with authored book titles in italics, journal paper titles in quotes, etc.

*Example of IEEE EndNote Style*

- [1] V. Ambegaokar and B.I. Halperin, "Voltage due to thermal noise in the dc Josephson effect," *Phys. Rev. Lett.*, vol. 22, pp. 1364-1366, 1969.

- [2] J. Clarke, (A superconducting galvanometer employing Josephson tunneling, *Phil. Mag.*, vol. 13, pp. 115-127, 1966.
- [3] J. Clarke and R.H. Koch, (The impact of high-temperature superconductivity on SQUIDS, *Science*, vol. 242, pp. 217-223, 1988.

If you'd like a free copy of this style, please bring a diskette to the Workstation Group lab (Bldg. 50B, Rm. 2231).

Note bene: *EndNote* 1.1 does not work with Microsoft *Word* 4.0. *EndNote* has informed registered users that their latest version of *EndNote* (V 1.2.1) WILL work with Microsoft *Word* 4.0.



[26.7.10]

### MAIL\*LINK FOR MAC-TO-VMS/UNIX

... from WKSG member William Jaquith

Many members within the LBL Macintosh community are sending e-mail using *QuickMail*, an electronic mail package from CE Software. Many users are also looking for a way to exchange Mac mail with the VMS and UNIX community.

StarNine Technologies, a Berkeley vendor, recently demonstrated a test version of its *Mail\*Link* software gateway. *Mail\*Link* provides a straightforward path between *QuickMail* and the SMTP (Simple Mail Transfer Protocol) that is used on the UNIX and CSA computers.

The Workstation group has been looking for a way to provide this kind of gateway service to the Macintosh community for some time. A number of LBL users have been actively sending mail through the gateway to test the robustness of the service. Some of the LBL suggestions and comments have been included in the Beta release of *Mail\*Link*. We are running the Beta release; we expect to purchase a site license for LBL when the product is officially announced by StarNine.

The Workstation group anticipates that the *Mail\*Link* gateway between SMTP and *QuickMail* will be available later this summer to the LBL community. Please watch here for additional information.

In order to make the purchase of the *QuickMail* software easier, the Workstation group is working with CE Software to obtain *QuickMail* software licenses in bulk. We expect to be able to obtain some costs savings by the bulk purchases. We'll forward more information here as we obtain it.



[26.7.11]

### GREAT NEW EQUATION GENERATOR FOR THE MAC

- ✓ *formulator*, v 1.1, from ICOM Simulations Inc., \$109.

Here's yet another WYSIWYG equation generator for the MAC, but what a honey this one is.

First, the program uses TeX rules for typesetting and thus has great-looking output and also can output impeccable TeX files for use in TeXTURES or other TeX implementations.

Second, *formulator* is easy to use. A wonderful stack system (similar to MacEQN – though the rest of the program is far superior) gives graphical and written cues showing where in an equation structure one is. Cut and paste editing is easy and unambiguous. There is extensive support for keyboard commands (Un-Mac-Like (shudder!) I know, but point and click equation creation is tedious and being able to work from the keyboard is a boon.) Equation numbering and alignment is easy as pie.

Finally, there is sensible support for user-defined character styles, template documents (called style sheets), and a text mode which allows creation of simple documents completely within *formulator*.

I could go on, but why? The Workstation Group has a copy for evaluation. Check it out.

(Equation Typing on the Macintosh II, a review of such programs updated for 1989, is available from the Workstation Group also.)



[26.7.12]

### NEW MAC STUFF IN THE WKSG LENDING LIBRARY

The Workstation Group has evaluation copies of the following:

- ✓ *Igor* V. 1.0, from WaveMetrics, \$199.00.

This is a data analysis and graphing tool which includes several methods of curve fitting, Fourier Transforms, histograms and more. Produces fairly decent printed graphs.

- ✓ *RefMaker*, V. 1.02, from Cat's Cradle Software, \$72.

This is a reference manager, but a rather misbegotten one compared to programs such as *EndNote* and *ProCite*. *RefMaker* uses HyperCard or Reflex as its base and extends those programs with utilities for importing/exporting references, creating key word lists, etc. To create a bibliography requires saving a Microsoft *Word* document in RTF format; *RefMaker* processes the RTF document and outputs a data file for Word merge print.





[26.7.13]

**NCSA FTP - RECENT CHANGES**

... from *WKSG Member William Jaquith*

Users of the NCSA Telnet (National Center for Supercomputing Applications) for the Macintosh may have noticed that the FTP (File Transfer Protocol) does not work in the same manner that it used to work when transferring files between the Macintosh and the CSA cluster. The changes are showing up at this time because of the recent upgrade to Version 5.1-1 of VMS on the CSA cluster.

The most noticeable change is that 'Send FTP Command' -- the first line under the menu bar column NETWORK -- no longer works. An error message

```
%DCL-W-MAXPARM, too many parameters - reenter
command with fewer parameters
```

is displayed on your terminal and your FTP session fails to start. The -n flag is NOT accepted by the FTP server program running on the CSA cluster. We have asked Macintosh software vendors and CSA software vendors to let us know how to set things so that the -n flag is honored.

In the meantime, you can transfer files by using a slightly different sequence of commands. Here's the pattern to use now:

- Give the command 'ftp' at the CSA prompt. (Note: that's 'ftp space' -- you must include a space after the letters 'ftp'.)
- Then under the Macintosh menu bar column, NETWORK, click on the second item, 'Send IP Number'. From this point on, the file transfer commands will be the same as before.

**Handy Hash Marks**

I often toggle the hash switch ON by entering the command 'hash' at the FTP prompt. This gives me some additional information that I often find useful. The hash command puts a hash mark (i.e., the sharp or pound sign -- #) every 1024 bytes as the file transfer is in progress. This is particularly reassuring when you are transferring a large file.

Other commands that you may use are

```
dir shows the Macintosh directory
ldir shows the local directory, the directory on the
      CSA machine.
get moves a file from the Macintosh to the CSA
put moves a file from the CSA to the Macintosh.
```

Here is a sample session using the NCSA FTP file transfer service.

```
CSA> ftp Send IP Number
      (Click on 'Send IP Number' from Network
      (under Menu Bar
      (You will see a number like 128.3.48.11
CSA4.LBL.GOV Multinet FTP-32 user process 2.1(64)
Connection opened (Assuming 8-bit connections)
<Macintosh Resident FTP server, ready
      (Normal FTP responses
FTP> hash
[Hash marks will be printed during transfers]
      (Turn on markers at 1024 bytes during file transfer
FTP> pwd
(Print Working Directory - a UNIX like command
      (which tells you which Macintosh
      (directory you are working with.
</EverEx/Jake/NewsLetter' is the current directory
FTP> dir
      (Ask for directory listing of Macintosh
      (Remember to "Set Transfer Directory"
      (under the FILE menu bar.
<Opening connection

ftp.june89
ftp.man
qm.june89
<Transfer completed
FTP> get
      (Use the get command to move a file from the
      (Macintosh to your current CSA directory.
From remote file: ftp.june89
To local file: ftp.june89
<Opening connection
#####
<Transfer completed
      (Normal FTP responses if hash is on.
FTP> ldir ft*
      ('ldir' is local directory. I have used it
      (here to confirm that the file is now on
      (CSA. The FTP command ? or HELP lists
      (FTP commands.
_.$1$DUS112:[JAKE]FTP.JUNE89;1
_.$1$DUS112:[JAKE]FTP.MAN;1
FTP> quit
      (Quit or exit ends the FTP session and puts
      (you back at the CSA prompt.
<Goodbye
CSA>
```



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