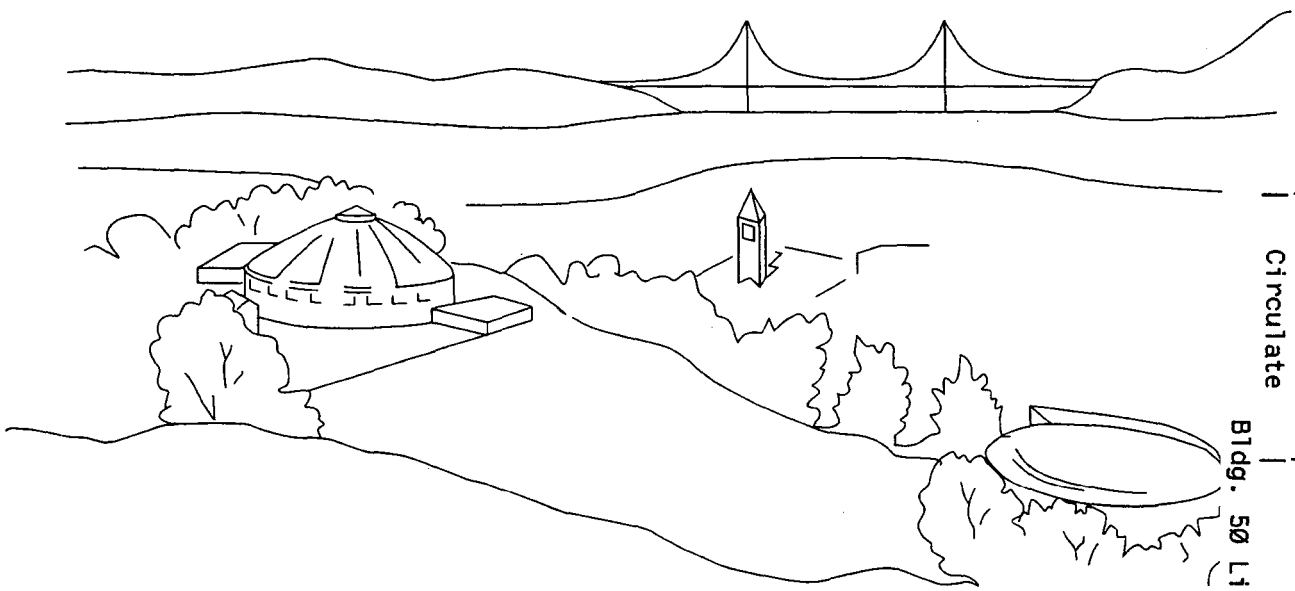
DISCLAIMER

LB COMPUTING NEWSLETTER

JUNE
1993



LAWRENCE BERKELEY LABORATORY
BERKELEY, CALIFORNIA . . . 94720

Newsletter Closing Date is Tuesday, June 15, 1993

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

Editor: Maggie Morley

Prepared for the U.S. Department of Energy under Contract DE-AC03-76SF00098

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PUB 429 5/93 1100

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ICSD TRAINING SCHEDULE

June 1993

To enroll in the C Programming course, the UNIX classes, or the Electronic Mail Survey class please contact Diana Morris, (x5872). You do not need a VMS/CSA login for the AVS class. To enroll in the IBM-PC or Macintosh training classes, contact Gayle Milligan (x4511).

CLASS DATES	TIME	LOCATION	HOURS	FEE
Introduction to PC-DOS (PC) Please call to register.	9:30 - 11 AM	50B/1215A	3	$30
Introduction to Windows (PC) Please call to register.	9:30 - 11 AM	50B/1215A	3	$30
Beginning Word 5.0 (Mac) Please call to register.	10 AM - Noon	50B/1229	6	$60
Introduction to FileMaker Pro (Mac) June 15, 16 & 17 (Tue-Wed-Thur)	1 - 3 PM	50B/1229	6	$60
Beginning Excel 4.0 (Mac) June 21, 23, & 25 (Mon-Wed-Fri)	9 AM - Noon	50B/1229	9	$90
Introduction to Networking (Mac) June 8 & 10 (Tue-Thur)	9 - 11 AM	50B/1229	4	$40
Electronic Mail (Mac) Please call to register.	1 - 3 PM	50B/1229	2	$20
Basic Macintosh Please call to register.	12 - 1 PM	50B/1229	1	NA

MSS NEWS

MSS Update

Wayne Hurlbert

Automated Tape Library
The Mass Storage Project has now had some experience with the new automated tape library, an Exabyte EXB120. The EXB120 houses four EXB8500 8mm tape drives and 116 tape cartridges. Robotics speed of the EXB120 is similar to our older CTD 8L library, but reliability is improved considerably. Additionally, the change to four tape drives in the EXB120 (from two tape drives in the CTD 8L) greatly improves file retrieval response time when the system is under load.

CTD-8L Upgrade
The CTD 8L is currently being upgraded to the latest specification by the manufacturer. When it is returned to us, it will be put on-line with the EXB120.

500,000 files: 100 GBytes
The MSS has now been in production for over a year. At this point the system has more than 50 users with over a half million files, for a total of 100 gigabytes of data. Files range in size from a few bytes to almost 2 gigabytes (average file size is 170 kilobytes).

System Enhancements
System enhancements planned for the near term include
- moving from the current Sparc 2 server to a Sparc 10;
- an MSS software upgrade to UniTree Version 1.7.1 (from Version 1.6.3);
- integration of VMS clients via TGV Multinet.

Memo bills
While users of the MSS are not currently being charged for storage services, they are receiving "memo" bills for a short period before actual charging begins. Current proposed charges are $.01 (1 cent) per megabyte per month for data on the system.

For more information on the MSS type "man mss" and "man unitree" on the UNIX servers.

Forward comments and questions to me at x6448 or

UNIX or
Software Tools Mail: **wayneh@lbl.gov**
VMS Mail: **lbl::wayneh**

UNIX NEWS

Craig Eades

POET

In this month's newsletter we feature an article by Dr. Jane Macfarlane, an LBL Staff Scientist who describes a different approach to writing scientific code for a parallel computing environment.

By defining and coding representations of physical phenomena which are generic enough to be utilized again in other codes, the mapping of the solution set to that class of problem onto a virtual parallel platform need only be done once.

The result of this work gives a researcher the opportunity to leverage future work off of their past efforts, or the previous efforts of others in dealing with the same class of problems.

The work of Dr. Macfarlane and her collaborators has been presented at several conferences and workshops over the past year.

Training at LBL

Classes in both PVM and *Express* were given in May by ICSD Staff Scientists and UNIX group members Dr. Ludmilla Soroka (PVM) and Dr. Elon Close (*Express*). Both Soroka and Close have had extensive experience in research computing, and bring that experience to the classroom. Contact them (**ERClose**@lbl.gov/x7216 and **L_Soroka**@lbl.gov/x5604) for information about summer classes in these software tools. (We will continue to offer these to the community as warranted by interest and funding constraints).

Networking on the MasPar...

The HiPPi interface integration project is now underway. On completion, the MasPar will be connected to the Gigabit test-bed network between LBL and the UC Berkeley campus. This will provide high-speed access via gateways to the ESnet facility (currently 45MBit/sec and soon to be 155MBit/sec) between the MasPar and NERSC and other ES sites.

Next Month

Next month we'll be featuring an article by LBL Energy and Environment Staff Scientist Greg Ward, who will discuss his experience in distributed parallel processing using our small workstation farm. Greg took advantage of our offer of free processing time to investigate the performance of his lighting simulation code on the Sparc-10 platforms.

In his report, Greg gives an example of speedups possible with relatively little work. He also provides some insights into why things work the way they do in a distributed parallel environment and offers some clues as to the identification of performance bottlenecks.

You saw it Where??

Yes, that was our new MasPar featured on the front page of the Business section of the May 4 San Francisco Chronicle. This article, or parts of it, have been picked up and run by several other local newspapers as well as the Toronto Globe and Mail, Computerworld, High Performance Computing, and Communication Weekly.

POET

An Approach to Scientific Software Design for Massively Parallel Computing

Jane Macfarlane

Parallel computing offers the only solution to advancing the state of the art in combustion modeling.

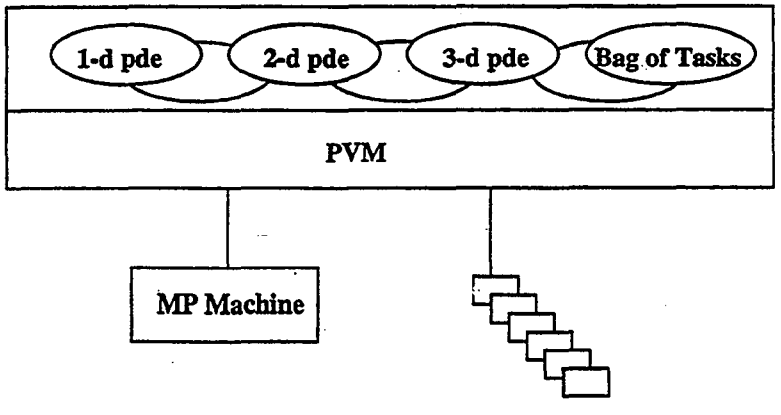
The purpose of this article is to describe a novel approach to scientific computing on massively parallel computing platforms. The approach has been embodied in a software prototype system called POET (Parallel Object-Oriented Environment and Toolkit) and is the result of a collaborative effort between LBL and Sandia National Laboratory, California.

Our approach is to design well-defined mappings between the representations of physical phenomena in terms of mathematical structures and the computational algorithms for modeling the phenomena on high-performance parallel computing platforms. By defining these mappings, we are effectively identifying representations that will solve an entire class of scientific problems with a single representation. Thus, once the representation is defined for a particular problem class, mapping into the computing algorithm is handled automatically by the POET architecture. We'll use a combustion modeling example to highlight the benefits of the POET approach.

Computational Approach

The approach to POET is similar in design methodology to the Xt Toolkit. A high-level object-oriented framework isolates a physical model description from the code that implements the parallel algorithm and data flow. Through this object-oriented interface, direct integration of existing application codes are implemented without affecting the parallel computation algorithms. As such, a scientist need only be concerned with application-specific code and not with the details of parallel computation.

Initially, we concentrated on one specific area: explicit and implicit finite difference problems. This category of problems covers many areas of physics and engineering. Examples of explicit PDE problems are compressible computational fluid dynamics, heat and mass transfer, and unbounded wave mechanics. Examples of implicit problems include incompressible fluid dynamics, transport problems involving fast (stiff) chemical reactions and bounded wave mechanics.

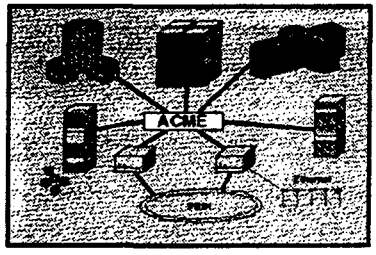


The Philosophy of POET

Advanced Combustion Modeling Environment

Goals ...

- **To understand underlying combustion chemistry and its interaction with flow**



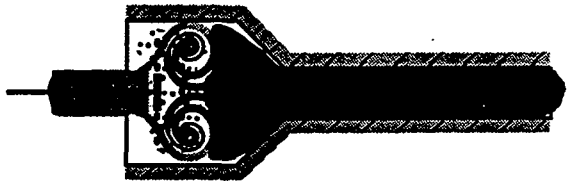
High Performance Computing

$$\frac{\partial}{\partial t}\rho_i = -\nabla\cdot(\rho_i \mathbf{v} + \mathbf{j}) + \dot{r}_i \qquad \frac{\partial}{\partial t}\rho \mathbf{v} = -\nabla\cdot(\rho \mathbf{v}\mathbf{v} + \pi)$$

$$\frac{\partial}{\partial t}\rho\varepsilon = -\nabla\cdot(\rho\varepsilon \mathbf{v}) + \Sigma\dot{q}_i$$

Predictive Models

To develop more realistic models for designing combustion devices



- **Improved Device Designs**

Combustion Models

We targeted next-generation combustion models for the first prototype application. Because of the computational requirements necessary to model the complex reactions associated with the combustion process, existing models for combustion are limited in the amount of chemistry that may be included in the model. Parallel computing offers the only solution to advancing the state-of-the-art in combustion modeling.

Our first application was the class of explicit one-dimensional second order PDE problems. Specifically, our example was a hybrid moment-PDF model modeling a turbulent reacting jet flame. A cylindrical jet injects a pre-mixed fuel and is ignited. The model is composed of three parts: the turbulent motion model, the chemical reaction model and the coupling between chemical reactions and turbulence; it is based on the probability density function (PDF) approximation.

Full Chemistry

The resulting PDF combustion code created within the POET architecture is the only turbulent reacting flow code in existence with the capability for full chemistry. An object in POET has been constructed that handles the parallel solution of a one-dimensional second order PDE problem and is employed to model a chemically reacting flow using the PDF technique. Significant results for an H2/Ar jet using full chemistry have already been calculated and compared with experiments at Sandia Combustion Research

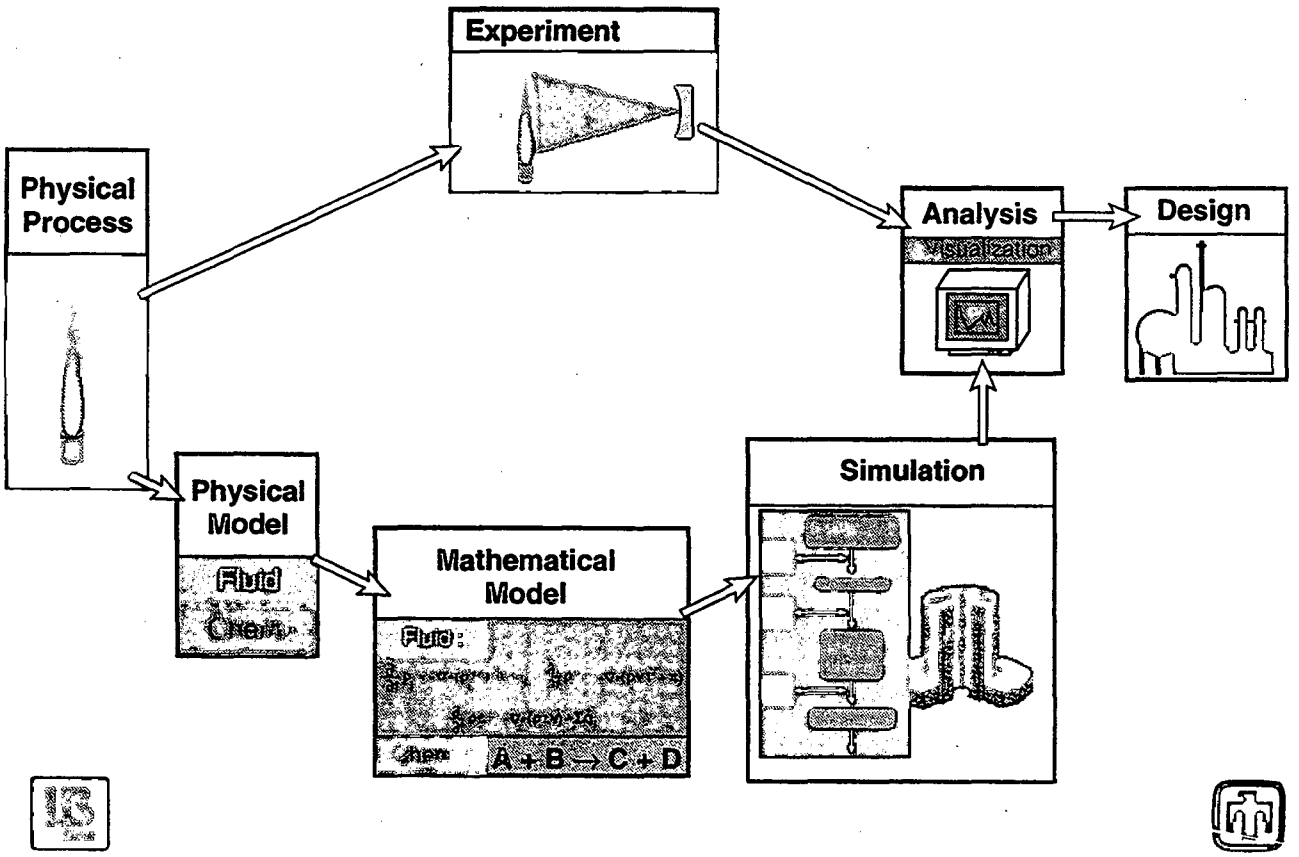
Facility to verify the code. The PDF model used in conjunction with parallel computing has enabled, for the first time, the prediction of trace pollutants using well-accepted chemical reaction rates and mechanisms rather than phenomenological assumptions.

Improved Performance

Even at this preliminary stage, speed-ups over single workstations and vector supercomputers are significant. For example, we are able to complete the turbulent jet application in under a day on a small parallel system that takes 10 days on a state-of-the-art workstation and 4 days on a Cray YMP. Because the chemistry calculation is local and is by far the most computationally-intensive and because we have reworked the PDF algorithm to minimize communications, the calculation time to communication time ratio is between 105 and 104. Since the PDF application has an infinitely variable granularity, we are currently limited only by the size of the machine running the code. (Presently, we have been using small developmental workstation farms.)

The combustion modeling example demonstrates the flexibility of the software design methodology captured in the POET software. The intelligence associated with distributing the problem over multiple processors is embedded in the objects defined in POET. An existing serial FORTRAN program (12,000 lines of code) was modified to take advantage of the POET approach in a few weeks of effort.

Lifecycle of Model Development



Future POET Problem Categories

Human Genome

We have started to develop an object in POET that will manage the distribution of independent tasks across multiple processors. Essentially, the database filtering problem for the human genome project is the comparison of a query sequence against the very large set of existing genome sequences in a database. Each comparison is a completely independent task. These comparisons are correlated into a hitlist on the host processor after the comparison has been completed. An existing sequence comparison program, called Blast, is currently being modified to integrate with the POET architecture. This work ties directly to a friendly user interface developed by Manfred Zorn in the Human Genome Center at LBL in which the final sequence ranking is presented to the user in graphic form.

Free Electron Laser Problem

We plan to adapt to the POET environment an existing 2D, time-dependent (i.e. r-z-t) particle simulation code that models sideband and other multifrequency behavior in free electron lasers. The code (GINGER) is presently being used on the NERSC CRAYs to analyze the spectral bandwidth output of the proposed 4-nm at SLAC. The code can model certain aspects of the proposed IR-FEL of the CDRL Sandia/LBL collaboration. As a first step, we will use a reduced set of 1D equations (i.e., z-t) only, and distribute the time-dependent functions to a number of processors via POET. This will require some relatively minor additions to POET's ensemble of routines. Next, we will restore the 2D functionality of the code which permits us to properly handle diffraction and beam emittance. As a benchmark, certain of the full 2D, time-dependent SLAC simulations require 4 hours or more of Cray-2 CPU time.

Summer Sessions in *EXPRESS* and PVM

As discussed in recent issues of this newsletter, Computing Resources is providing support for *EXPRESS* and PVM, software tools that facilitate distributed computing. Summer classes for these tools have been scheduled.

EXPRESS

JUNE — Tues, June 22
Thur, June 24
JULY — Tues, July 20
Thur, July 22

PVM

JUNE — Tues, June 29
Thur, July 1
JULY — Tues, July 27
Thur, July 29

{ *All classes held from 9 AM to Noon*

In these classes, users will learn how to set up *EXPRESS* or PVM and how to compile and run programs in C or Fortran as distributed processes using the Computing Resources Training Room workstations.

Both *EXPRESS* and PVM are tools that help a user parallelize a program by distributing the work among a group of heterogeneous processors. These processors could belong to Computing Resources, or they could be a workgroup's own workstations.

While *EXPRESS* has more high-level tools to help the user parallelize his code, PVM has the advantage of being available to any site. The necessary license for *EXPRESS* (by ParaSoft) has been acquired by Computing Resources for LBL; PVM is public domain software supported by the Oak Ridge National Laboratory.

These classes are offered as part of our parallel support program, which is provided at no cost this fiscal year on an "as available" basis.

Those interested in attending these classes should contact:

EXPRESS Class:	Elon Close, x7216 **ERClose@lbl.gov**
PVM Class	Ludmilla Soroka, x5604 **L_Soroka@lbl.gov**

UNIX SECURITY

Darrell Davis

Some recent security incidents force us to send out this friendly reminder.

- If you get *any* request (e-mail or phone) to change your password to a *given* password, DON'T DO IT! Report it immediately to me at the phone number or e-mail address below. (I am not talking about the mail you get when your password has expired; watch for e-mail requests to change your password to a *specific* string.)
- Choose a password that is *not* any part of your name, job, life, in any dictionary, or a word of *any* language. This is the single most important step you can take to prevent unauthorized intrusions. See the March 1993 Computing Newsletter for help choosing a good password.
- Do not create WORLD-writable files (i.e., "rwxrwxrwx"). This is asking for trouble. If you have a specific need to have someone write to one of your files or directories, please contact me for alternative solutions.
- Each time you log in, check the message:

  Last login: Fri May 14 09:57:01 from somewhere.lbl.gov

  Make sure it was *your* last login.
- If you notice someone using an account, and you believe it is not the *owner* of that account (i.e., you know the owner is on vacation in Fiji), please report it *immediately* to me.
- Place the dot "." *last* in your PATH. For example:

  set path=(/usr/ucb /usr/bin /usr/local .)
- Do not store important things like credit card numbers on-line.
- Do not include your (or someone else's) password, or other sensitive information in e-mail. Remember that e-mail gets delivered in "clear text" form. That means that anyone along the way can read it. Also, the first thing a system intruder will do is scan all the mail messages on the system for passwords and other juicy information. (We are investigating some privacy-enhanced mailers which make it much more difficult for others to read your mail without your authorization).
- Keep an eye out for unusual or hidden files and directories. A favorite trick on UNIX systems is to put a hidden directory in a user's account with an unusual name—something like " . . . " (dot dot dot) or " . . " (dot dot space space) or " . . ^G" (dot dot control-G). Also, files with names such as ".xx" and ".mail" have been used.
- Do not share your account with another user. We will be happy to create additional accounts. Two accounts doing the same work do not cost more than one.

Security incidents are on the rise. LBL and DOE take these events very seriously. Anything you can do to help prevent or detect an intrusion would be greatly appreciated. (Have a nice day :-)

Please direct any questions or comments to me at:

DSDavis@lbl.gov
x5740

UNIX USERS' GROUP MEETING

William Jaquith

Computing Resources' Staff Scientist Ruth Hinkins, the Parallel Project leader, will lead a summary discussion of recent experiences LBL staff have had parallelizing their codes at the June UNIX Users' meeting (for all local users of UNIX or UNIX workstations).

TIME:	2 to 4 PM Thursday, June 24, 1993
PLACE	Bldg. 50F Conference Room

Participants will make general comments; present performance comparisons; give some hints and tips; disclose pitfalls; offer suggestions; and answer questions.

Forward comments and questions to me at:

WDJaquith@lbl.gov
x4388

LBLnet NEWS

Bob Fink

The Background For A New LBLnet Topology

There has been a gradual transition in LBLnet's LAN interconnection topology from its simple origin as a single large fiber optic interconnected LAN to its current dual-backbone LAN topology interconnected with high-performance bridges and routers. Starting as an Ethernet-only LAN environment, it continued to develop with the addition of the lower-speed Apple LocalTalk LAN technology, then grew to include the faster FDDI LANs.

In addition to the evolution of LAN interconnect technology in LBLnet, we have seen the evolution of LANs from distributed cabling systems to star-distribution hub cabling systems that deliver LAN service to the user over twisted-pair wiring. This evolution has greatly reduced the cost of LAN distribution, at the same time making them much more manageable. Today, LocalTalk, Ethernet, and FDDI LANs are all being distributed over high-quality telephone twisted-pair wiring into the office.

LBLnet is now ready for several important architectural moves with the corporate backbone router providing high-performance, high-reliability routing services and LAN switching for both FDDI and Ethernet. Overall, the most important factor driving this is that current LAN technology (i.e., Ethernet, Token Ring and FDDI) is not capable of handling the maximum backbone loads required by large institutions such as LBL.

LBLnet has evolved from using Ethernet (10 Mbps) as a backbone for its user Ethernets, to using FDDI (100 Mbps); it now needs higher performance solutions. This need occurs as Ethernet loads continue to grow, FDDI LANs begin to be commonly used, and external networks migrate to higher speeds.

These continuing new demands on LAN performance should not be surprising when one looks at the very fast evolution of workstation performance. There is no reason to expect that these performance trends will abate in years to come. In addition, new applications become possible and highly desirable (packet video comes to mind).

Thus new solutions are called for, and the LAN industry is beginning to provide them. As new high-performance solutions are required, new approaches to providing them are developed. Both new technologies—LAN switches and corporate backbone routers—attempt to provide faster interconnection of standard LANs through non-standard proprietary internal switching technology. This will be our primary topic in this article:

Note, however, that we need standardized LAN technologies to provide higher speeds (much higher!) than FDDI for interconnection of these LAN switches and corporate routers to break the next speed barrier. At this time it appears that ATM (for Asynchronous Transfer Mode), the emerging Broadband-ISDN technology, is the most likely candidate for next generation LANs. LBL network research staff are experimenting with wide-area and local-area ATM technology and as it evolves it will most likely find a place in LBLnet. We'll discuss this in future newsletter articles as appropriate.

LAN Switches

LAN switching is an evolution of bridging (i.e., the transparent interconnection of two or more LANs at the media access level); it provides more LAN interconnection ports than does traditional bridging. LAN switches typically provide lower transit delays than do many bridges, i.e., the delay through the switch is very short, due to the "cut through" routing of the packet from the input port to the output port (if it is free) as soon as the destination address is read and used to determine the output port to be used.

Ethernet switches are now becoming a mature technology, with several companies providing them. LBLnet will use its first Ethernet switch, a Kalpana switch, to alleviate traffic overloads on the 50LAN bridged subnet. The Kalpana switch has an internal switching capacity equivalent to 6 Ethernets, i.e., 60 Mbps.

FDDI switches are a new technology; the only one available at this time is from Digital Equipment Corporation. LBLnet will use a DEC GIGAswitch FDDI switch to provide user FDDI distribution, and to augment the FDDI bridged backbone as it becomes necessary. The

GIGAswitch is capable of internally switching 34 full duplex FDDI ports, a capacity equivalent to 3.4 Gbps.

This is a good strategy providing the subnet in question can easily be subdivided and the "off net" traffic load is not more than a single Ethernet (or FDDI) can handle. When it is, newer strategies such as ATM become important.

Corporate Backbone Routers

High-speed Forwarding

Corporate backbone routers are similar in basic concept to the routers in common use today; they forward packets at the not-so-transparent network level using various routing protocols (e.g., DECnet, TCP/IP, Novell IPX, AppleTalk, OSI). However, corporate backbone routers do this forwarding at much higher speeds, though typically not with "cut through" routing due to the various media formats that must be used (a bridge/switch typically forwards between similar LAN media; routers often do not). But corporate routers do tend to have very low transit delays and are often much faster that conventional routers.

High Reliability

Corporate backbone routers must offer high reliability: the very fact that they forward packets at high speeds, typically in single-point-of-failure mode, means that they must be stable at "hot spots" in a corporate LAN. In LBLnet, the most important hot spot is the interconnection of LBLnet's dual backbones, its external networks and its new FDDI user LAN GIGAswitch.

LBLnet will be assessing the emerging corporate backbone router market in FY94, with tests planned of several manufacturers' routers prior to a competitive procurement.

A New Topology

In the accompanying diagram, "A New LBLnet Topology," the use of the new LAN switching and corporate backbone routing technology can easily be seen. A Digital GIGAswitch FDDI switch will initially be used for a sub-backbone of all new FDDI user networks, including access to ALSnet (see the April Newsletter).

Also shown in the diagram is the use of a Kalpana switch in one of LBLnet's busier Ethernet bridged subnets. This will be only the first of many uses of Ethernet switch technology.

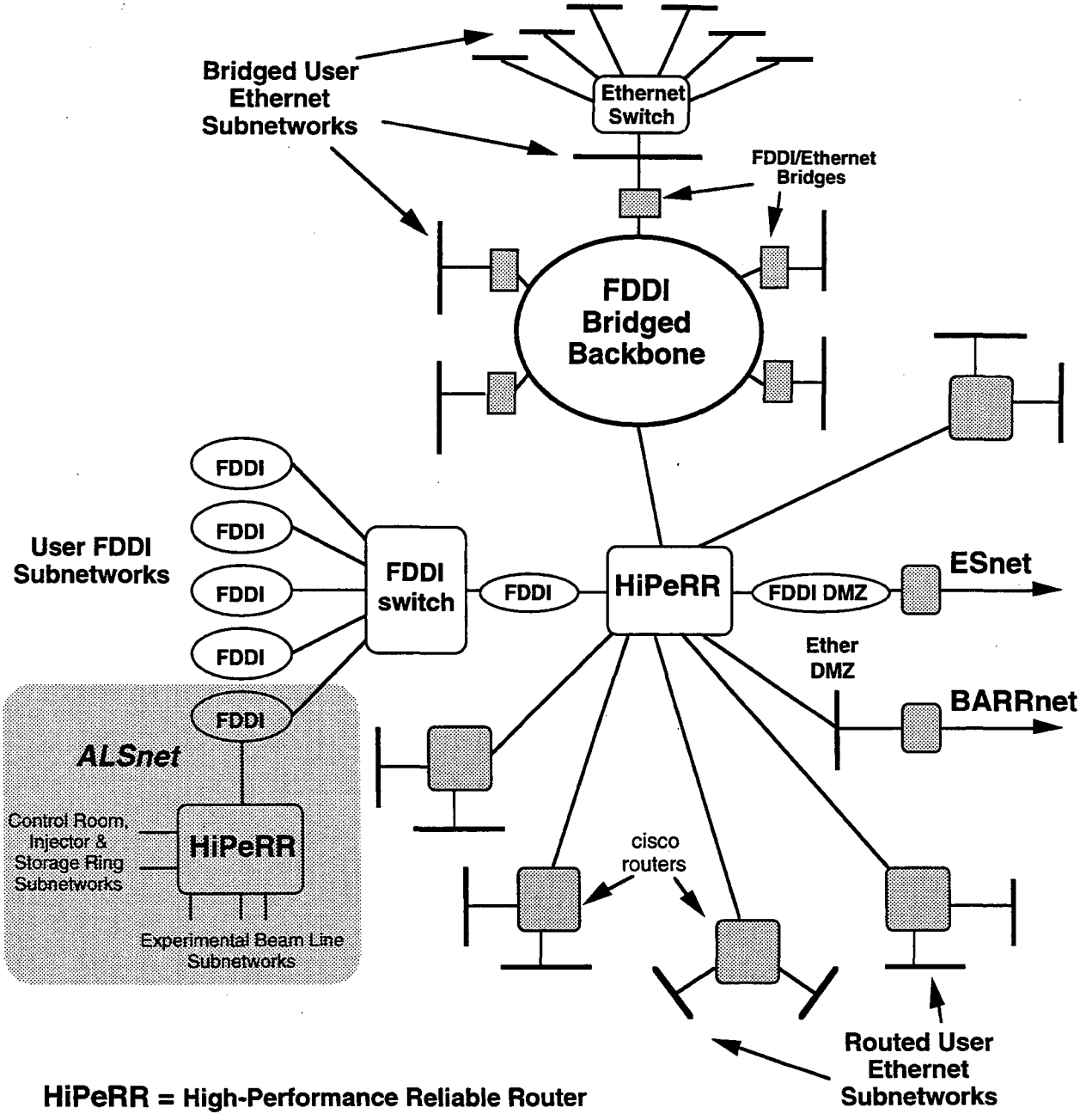
Central to the entire LBLnet topology (and to ALSnet—again, see the April Newsletter) is the new corporate backbone router technology, called HiPeRR in the diagram for Hi-Performance Reliable Router Project, which will provide several important features:

- HiPeRR will provide state-of-the-art routing performance (high packet-per-second forwarding rates and low transit delay) between the major components of LBLnet and its external networks.
- HiPeRR will provide fairness across LBLnet; it will determine how many hops, and thus delays, will be encountered by any two systems communicating across LBLnet. This is possible as all major parts of LBLnet are connected to the central LBLnet HiPeRR, which we can do because of its high performance.
- HiPeRR will provide fairness from all parts of LBLnet to its external networks; it will determine how many hops, and thus delays, will be encountered by any system communicating out of LBLnet.
- HiPeRR will provide very high reliabilitywith its redundant components and hot-swapping capabilities.
- HiPeRR will provide state-of-the-art network management data and configuration tools (this is becoming standard in all routers and bridges, but is especially required of corporate backbone routers).

In the interim while HiPeRR is being selected, a cisco AGS4+ router will be used, both for LBLnet and ALSnet.

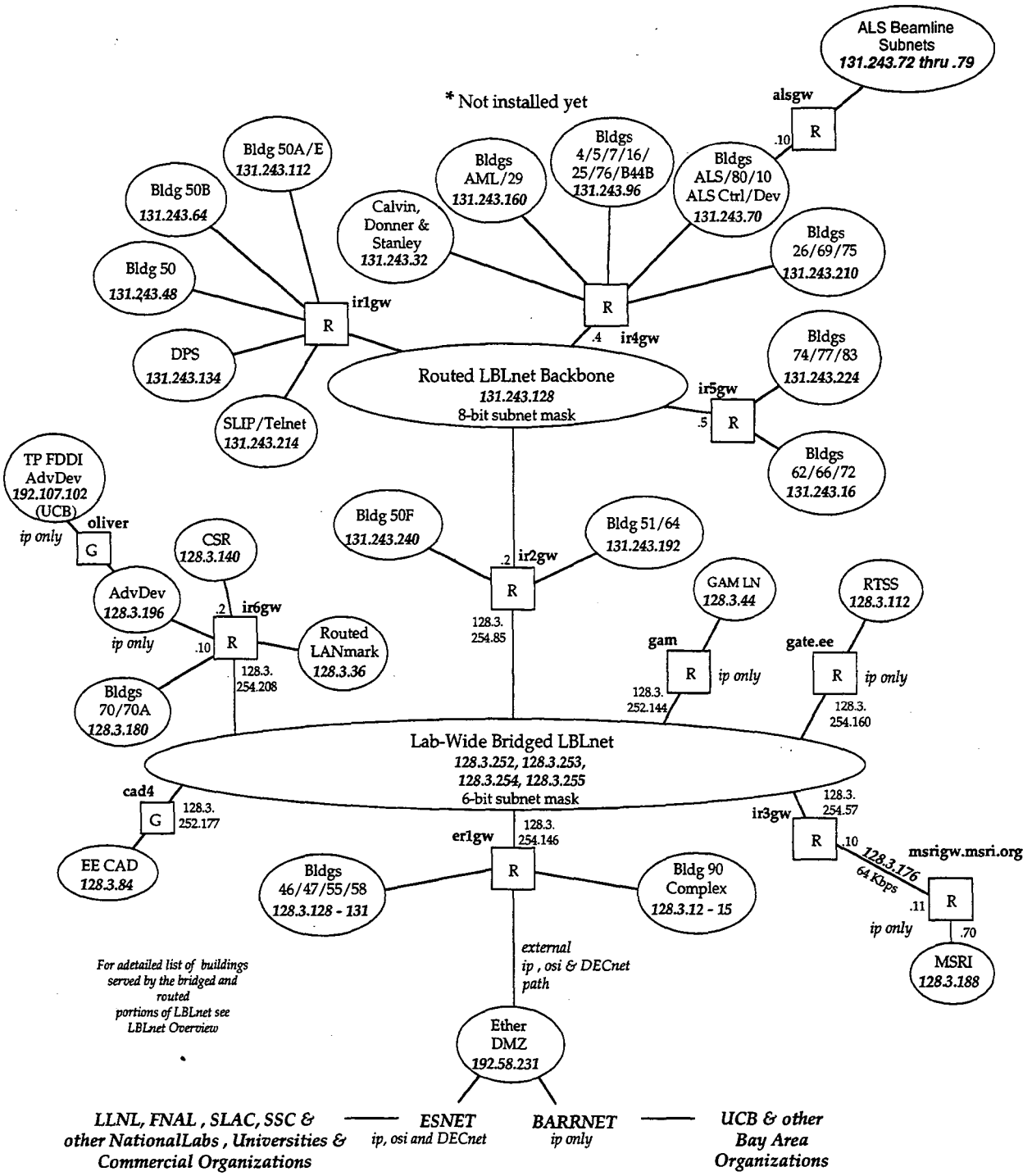
Conclusion

Through the use of new LAN switching and corporate backbone routing technology, LBLnet will evolve yet again to meet LBL needs and provide for future growth.



A New LBLnet Topology

R. Fink 17 May 1993



LBLnet Subnet Overview

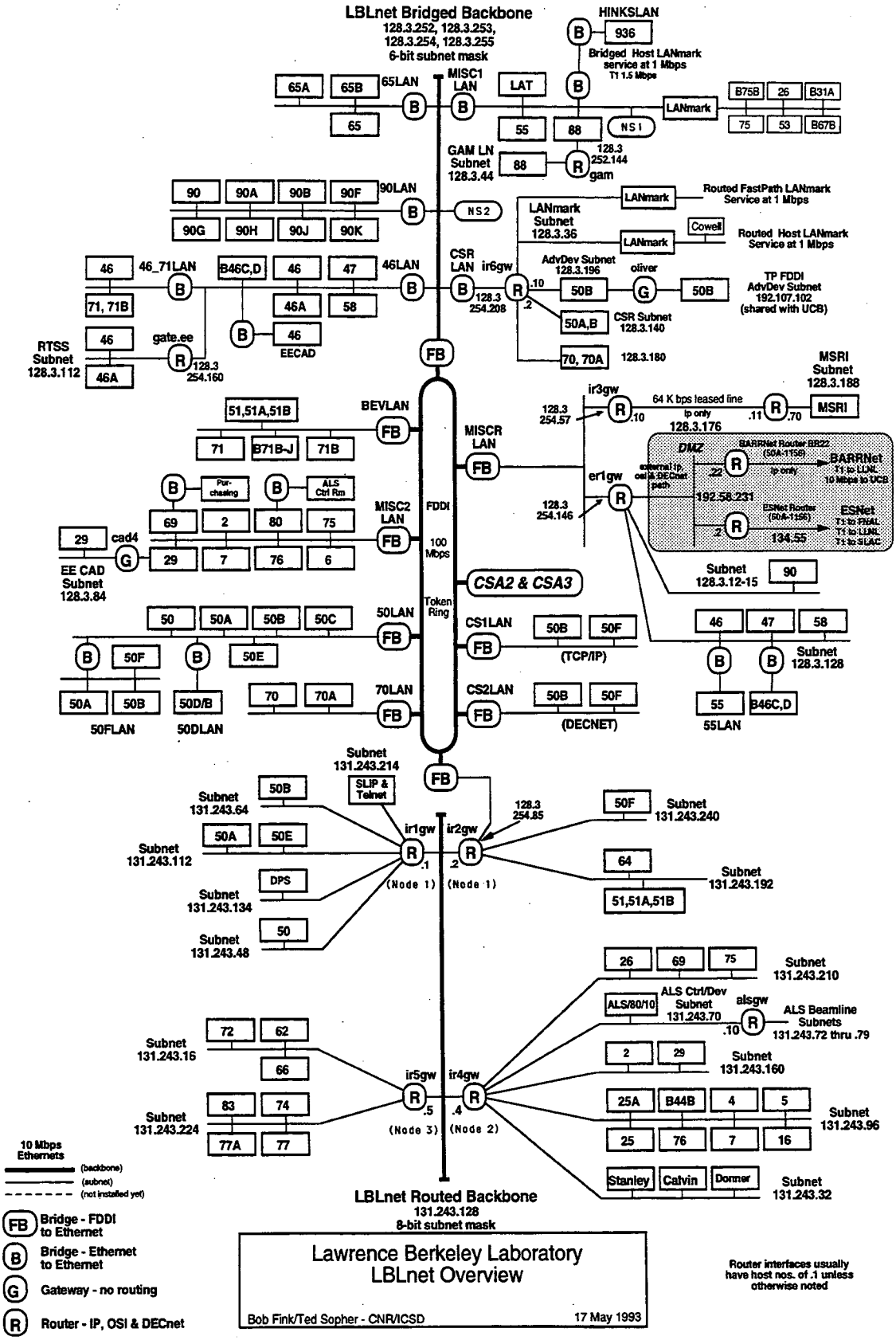
R = IP Router, G = Gateway w/no routing
Circles Represent Routed Ethernets Subnets

Bob Fink/Craig Leres/Ted Sopher - CNR/ICSD 17 May 1993

R Router - IP, OSI & DECnet

G Gateway - no routing

Router interfaces usually have host nos. of .1 unless otherwise noted


LBLnet Bridged Backbone
128.3.252, 128.3.253,
128.3.254, 128.3.255
6-bit subnet mask
HINKSLAN
936
Bridged Host LANmark service at 1 Mbps T1 1.5 Mbps
MISC1 LAN
65A
65B
65LAN
65
LAT
55
88
NS1
LANmark
B75B
26
B31A
75
53
B67B
GAM LN Subnet 128.3.44
88
128.3 252.144 gam
90
90A
90B
90F
90LAN
90G
90H
90J
90K
NS2
LANmark Subnet 128.3.36
LANmark
Routed FastPath LANmark Service at 1 Mbps
Cowell
Routed Host LANmark Service at 1 Mbps
46
46_71LAN
71, 71B
B46C,D
46
47
46LAN
46A
58
CSR LAN ir6gw
128.3 254.208
.10
.2
AdvDev Subnet 128.3.196
oliver
50B
50B
TP FDDI AdvDev Subnet 192.107.102 (shared with UCB)
50A,B
CSR Subnet 128.3.140
70, 70A
128.3.180
RTSS Subnet 128.3.112
46
46A
gate.ee
128.3 254.160
46
EECAD
FB
MSRI Subnet 128.3.188
ir3gw
128.3 254.57
64 K bps leased line
ip only
.10
.11
.70
MSRI
128.3.176
51,51A,51B
BEVLAN
71
B71B-J
71B
MISCR LAN
DMZ
BARRNet Router BR22 (50A-175B)
.22
ip only
BARRNet
T1 to LLNL
10 Mbps to UCB
er1gw
128.3 254.146
external ip, osi & DECnet path
192.58.231
ESNet Router (50A-1195)
.2
134.55
ESNet
T1 to FNAL
T1 to LLNL
T1 to SLAC
Pur-chasing
ALS Ctrl Rm
MISC2 LAN
FDDI
100 Mbps
69
2
80
75
29
cad4
29
7
76
6
EE CAD Subnet 128.3.84
CSA2 & CSA3
Subnet 128.3.12-15
90
Token Ring
50
50A
50B
50C
50LAN
CS1LAN
50B
50F
(TCP/IP)
46
47
58
Subnet 128.3.128
50F
50A
50B
50E
50D/B
50FLAN
50DLAN
70
70A
70LAN
CS2LAN
50B
50F
(DECNET)
55
B46C,D
55LAN
Subnet 131.243.214
SLIP & Telnet
Subnet 131.243.64
50B
Subnet 131.243.112
50A
50E
Subnet 131.243.134
DPS
Subnet 131.243.48
50
ir1gw
ir2gw
.1
.2
(Node 1)
(Node 1)
128.3 254.85
50F
Subnet 131.243.240
64
Subnet 131.243.192
51,51A,51B
26
69
75
Subnet 131.243.210
ALS/80/10
ALS Ctrl/Dev Subnet 131.243.70
alsgw
.10
ALS Beamline Subnets 131.243.72 thru .79
2
29
Subnet 131.243.160
25A
B44B
4
5
Subnet 131.243.96
25
76
7
16
Stanley
Calvin
Donner
Subnet 131.243.32
Subnet 131.243.16
72
62
66
Subnet 131.243.224
83
74
77A
77
ir5gw
ir4gw
.5
.4
(Node 3)
(Node 2)
LBLnet Routed Backbone
131.243.128
8-bit subnet mask
10 Mbps Ethernets
(backbone)
(subnet)
(not installed yet)
FB Bridge - FDDI to Ethernet
B Bridge - Ethernet to Ethernet
G Gateway - no routing
R Router - IP, OSI & DECnet
Lawrence Berkeley Laboratory
LBLnet Overview
Bob Fink/Ted Sopher - CNR/ICSD
17 May 1993
Router interfaces usually have host nos. of .1 unless otherwise noted

FROM THE HELP DESK

World Wide Web Access Via NCSA Mosaic For the X Window System

Martin Gelbaum

We have installed NCSA Mosaic for the X Window System on the CSA cluster and the Computer Center Sparc UNIX machines.

NCSA Mosaic for the X Window System is a networked, HyperText, X Window system, information discovery, retrieval, and collaboration tool and World Wide Web Browser developed at the National Center for Supercomputing Applications as a part of NCSA's Mosaic project. Mosaic is currently **beta** software.

Mosaic does seem to work quite nicely here and you can use it to interface very smoothly with our LBL Gopher server.

Note that Mosaic depends on X11 or DECWindows access.

The program "lynx," described in the May, 1993, LBL Computing Newsletter, p. 12, provides **vt100** mode HyperText access to the World Wide Web.

World Wide Web

The World Wide Web is a large-scale networked HyperText information system started by CERN, the European Laboratory for Particle Physics in Geneva, Switzerland.

HyperText is text that is not necessarily linear. The text contains links to other texts or to graphics, videos, or sound. Links are words/phrases that are in color and/or underlined depending on your Browser. You select a link by clicking on the highlighted word or pressing the return key, again depending on your Browser. The word that indicates the link then either changes color or the underlining becomes broken. The same link may be included in multiple documents.

WWW is primarily HyperText-based and uses its own HyperText document description format called HTML (HyperText Markup Language).

SetUp

We ask that users set up their access to Mosaic with "modules" on UNIX and "local_tools" on CSA. Here are the procedures.

UNIX users:

Please first use

module load information_retrieval/all

You can accomplish the same thing, with fewer keystrokes, by typing

module load IR/all

(IR stands for "Information Retrieval.")

Please note that this module—**information_retrieval/all**—defines the commands for Mosaic, lynx, gopher, xgopher, archie, WAIS, hytelnet, and xnetlib. The command "module display IR/all" shows what is in the module. Therefore, you can use the module "IR/all" instead of "IR/lynx", "IR/gopher", etc. After the setup, **mosaic** will run the program.

VMS users:

Please first use

$ local_tools information_retrieval

You can accomplish the same thing, with fewer keystrokes, by typing

$ local_tools IR

Again, IR stands for "Information Retrieval."

On VMS, please note that the command

$ local_tools information_retrieval
(or **$ local_tools IR**)

defines the commands for Mosaic, lynx, gopher, hytelnet, archie, and WAIS (xnetlib is not available—yet—on VMS). **HELP LOCAL_TOOLS**, subtopic **IR**, explains what is in the module. After the setup, **mosaic** will run the program.

Documentation:

The simplest way to read about Mosaic is via its own internal Help menu item. We have made brief on-line "man mosaic" and "HELP Mosaic" articles.

Macintosh Access

There is a "pre-alpha" Macintosh World Wide Web Browser. It does not work very well; however, we believe it will be improved and distributed in the future, at which time we would make it available on the WKSG server.

Usage and Features

Mosaic allows you to access many, many INTERNET network resources.

The initial ("Home") page provides a link to our LBL Gopher Server; just click on the underlined phrase "LBL Gopher Server."

The menu bar at the top of the Document View window provides program control, navigation, and document manipulation functions. The menu bar is broken down into the following menus:

- File
- Navigate
- Options
- Annotate
- Documents
- Manuals
- Help

The Documents item on the menu bar allows you easy HyperText access to WAIS, gopher, archie, hytelnet, etc. The HyperText-sensitive items that link to the data to which they refer are underlined. Click on the underlined items to access the linked data.

The Manuals items include HyperText access to SunOS man pages, X11R5 man pages, INTERNET standards documents, and to a set of the standard VMS HELP articles.

Document View Viewing Area

Most of the Document View window is occupied by the Viewing Area (or "view" for short), the area of the window that displays the document and includes scrollbars to allow documents larger than the window to be displayed.

Bottom Control Panel

Below the Viewing Area is a small control panel with a text entry area and a row of buttons. This control panel gives quick access to NCSA Mosaic's searching capabilities and the more common commands that you may wish to access while browsing a set of documents.

Authors and Credits

NCSA Mosaic is a product of the Software Development Group of the National Center for Supercomputing Applications at the University of Illinois at Urbana-Champaign. The developers of NCSA Mosaic for X are Eric Bina and Marc Andreessen. Joseph Hardin is the project lead for NCSA Mosaic. The VMS port was done here at LBL, using, among other software, VAX C, and DECwindows/Motif Version 1.1.

Here at LBL we also added the capability to preview PostScript documents through Mosaic's Gopher interface. Which means you can read the LBL Computing Newsletter on-line via Mosaic.

Problems or Comments

If you have problems or comments concerning NCSA Mosaic, please first read its internal documentation. If this doesn't answer your question or resolve your complaint, send your comments to

mosaic-x@ncsa.uiuc.edu.

(You can also use the Mail Developers option under the Help menu.)

Of course, here at LBL, we will try to help. We must, however, reconfirm that Mosaic is still **beta** software developed elsewhere. Its developers ask us to "remember that it is currently unsupported."

The developers politely encourage us to send a note to mosaic-x@ncsa.uiuc.edu if we find NCSA Mosaic useful or particularly interesting.

Note on Hangs

The Mosaic developers provide the following good words on the subject of "Hangs" (attempts to connect via Mosaic to some network resource that seem to "hang" or "go to sleep"):

"The World Wide Web is a very broad and very dynamic information mass spanning six continents and thousands of academic, research, and industrial institutions; any server on the network may be inactive or unreliable at any time. When a server is unavailable, clients such as NCSA Mosaic that attempt to access that server may hang.

"Early versions of NCSA Mosaic are not robust when it comes to recovering from such hangs. However, there is something you can do: when a hang occurs, send the application either a SIGINT or a SIGUSR1 signal (the easiest way to do this is to hit Control-C in your shell window). Later versions of NCSA Mosaic will provide better mechanisms for controlling these situations."

Forward comments and questions to me at x4749 or

UNIX or
Software Tools Mail: **mgelbaum@lbl.gov**
VMS Mail: **lbl::mgelbaum**

Information Retrieval Programs for the MAC

Martin Gelbaum

TurboGopher

TurboGopher is now available via AppleShare from the WKSG server in the lbl zone, on the 300MB disk. You'll find it in the Information Retrieval folder, which is in the communications folder.

- Copy the folder.
- Double-click on TurboGopher; it will connect to our Gopher server at **UX6.lbl.gov** on good days.

This version of this Gopher client will not read PostScript files—unlike Xgopher and Gopher on UNIX and gopher on CSA. Other than that, TurboGopher works very nicely.

WAIS

The Information Retrieval folder also contains WAIS, which does full-text searching using indexes in numerous databases accessed through the Internet.

Archie

It further contains Archie, which looks up files throughout the Internet.

NewsWatcher,

a program for accessing the UseNet, is also there.

New Version of MH on UNIX

On July 10, we will remove the old version, (V 6.5.1) of the mh (Mail Handler) program on UNIX. The new version (V6.8) was installed about two months ago and announced in the April, 1993, LBL Computing Newsletter, p. 31, column 1.

The new version works correctly with xmh.

Please note that you must use

module load mh

to use this new version. It will not work if you simply try to run it from

/usr/local/bin .

Further, if your .forward file uses slocal, you need to modify it to use

/vol/packages/MH/lib/mh/slocal

You will also need to changes the paths in your .maildelivery file to

/vol/packages/MH/lib/mh/rcvstore
/vol/packages/MH/lib/mh/rcvtty

and so on.

XPS AND SUNPS TO BE REMOVED

UNIX users should note that xps, an old and obsolete PostScript preview program for the X Window System, will be removed on Monday, July 6, 1993. We have replaced it with the much more powerful and versatile ghostscript/ghostview package, available by

module load graphics/preview .

We hope to remove the program "sunps," a Sunview companion to xps which is useless with the X Window system. If you still need "sunps," please contact me at

mgelbaum@lbl.gov
x4749

GRAPHICS NEWS

Version 5 of AVS is Up

Wes Bethel

The newest version (V 5.0) of the Application Visualization System (AVS) is now available on the ICSD machines UX6 (Sun4) and WIMSEY (SGI).

AVS is an environment designed primarily to support the "visualization" of data, but may also be used for general-purpose computing. A user may interact with AVS using a visual programming language to create "programs" for visualizing data. The building blocks of the language are separately compiled-and-linked software modules for performing large-grained visualization (or general-purpose processing) tasks.

AVS comes with over 100 modules for performing various visualization and imaging tasks, including contouring, isosurface computation, histogram manipulation, particle advection, and streamlines. In addition to these, there are over 60 modules developed at LBL for performing addition visualization tasks, including four modules for computing gridded from scattered data.

Features new with AVS 5.0

There are over 65 new modules, including:

- a set of 45 new image-processing modules that support Fourier transformations, morphological operations, image warping, contouring and arithmetic functions;
- five new volume-rendering modules including the "cube" and "edit substances" modules that will render based on user-defined substance classifications;
- eleven new Unstructured Cell Data (UCD) modules;
- five new modules for data presentation, including a module which constructs 3D bar charts;
- support for 8-bit and scalar images in the Image Viewer.

New support in the Geometry Viewer include:

- ability to send scene windows to a named display (for multi-head systems);
- non-transformable objects;
- new texture mapping **libgeom.a** library calls (for those who write AVS modules).

You'll also find:

- support for ANSI-C and C++ modules.

To run AVS from UX6 (or WIMSEY), you must be using a workstation that has a color X server and runs X windows. From your workstation (say it's named "humber.lbl.gov"), allow UX6 (or WIMSEY) to access your workstation:

localhost% **xhost ux6.lbl.gov**

Then, open a window onto UX6. From UX6, set the DISPLAY environment variable to point to your workstation:

ux6% **setenv DISPLAY humber.lbl.gov:0**

Then start AVS:

ux6% **avs**

International AVS Center

Wes Bethel

The International AVS Center, a repository for user-contributed AVS modules, was established over a year ago at the North Carolina Supercomputing Center. It now holds over 800 user-contributed AVS modules thta are available in source code form via anonymous ftp.

The list of functions supported by this collection of modules is too numerous to list in detail, but here's a summary:

Modules for reading data into AVS
—misc X,Y,Z points to geometry;
—FITS (Flexible Image Transport System);
—Label-maker; image sequences; miscellaneous (raster) image file readers;
—(SGI) Explorer Lattice Reader;
—DXF Reader; miscellaneous ASCII to AVS-field converters;
—SDRC I-DEAS to UCD reader;
—WAIS front-end module;
—Harwell FLOW3D reader; HDF reader;
—JPEG reader;
—netCDF reader;
—Mathematica reader.

"Filtering" Modules
—miscellaneous AVS-field mathematics modules;
—various Khoros image processing modules which have been ported to AVS, including GIS modules and modules for performing various linear algebra operations;
—numerous imaging modules;
—image color space conversion modules;
—n-dimensional slicers and interpolating slicers;
—data-interpolating modules.

Geometry-Producing Modules
—numerous modules to support creating geometry from "array" data. Most of these modules were created by users to either fix problems with the AVS-supplied modules or to fulfill a discipline-specific need.

Data Output Modules
—numerous modules for driving various devices including Lyon-Lamb Minivas Controller;
—"any format" image writer;
—Mathematica output;
—HDF and netCDF writers;
—JPEG writer,

To obtain the source code for any of these modules, or to download the complete module catalog, use the following IP address:

avs.ncsc.org or 128.109.178.23

Forward comments and questions to me at x6626 or

UNIX or
Software Tools Mail: **EWBethel@lbl.gov**

NOTES FROM TROUBLE MAIL

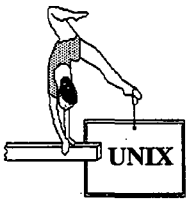
Martin Gelbaum

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

UNIX: USAGE OF WORKSTATION

MESSAGE

What is needed to make the microphone and speaker work on "my" Sun workstation?



RESPONSE

Try "audiotool" or the programs in "/usr/demo/SOUND."

MESSAGE

Is there any way to select text in the default window editors used for Text Editor and Mailtool WITHOUT using the mouse? You see, I see buttons for Copy and Paste but not for select. Shift button and cursor movements do not select text like on IBM PC or Mac, either. OK. So you don't know - whom do I ask?

RESPONSE

I can't find anything in the documentation about how to do this. You have access to the documentation by running Sun's AnswerBook, after "module load AnswerBook."
Note this from **module load AnswerBook**:
"Sun AnswerBook v1.4 (on-line documentation): you MUST be running OpenWindows v3.0. Type 'AnswerBook' to start."

UNIX: SUN ANSWERBOOK NEEDS DISPLAY POSTSCRIPT

MESSAGE

I was trying to use AnswerBook but got the following error messages:
Xview error: NULL pointer passed to xv_set.
Here's hat I did on UX5 :
%setenv DISPLAY myws.lbl.gov:0.0
module load AnswerBook
AnswerBook
I was able to open the navigator window but cannot view the contents due to Xview error.

RESPONSE

This sounds like your x-terminal doesn't have the display PostScript interpreter that AnswerBook needs. This is not surprising, since it's not a part of X itself. If it's any consolation, NCDs and MacX can't handle display PostScript either.

UNIX: VARIOUS QUESTIONS

MESSAGE

How is it possible to improve my setup in my account? I would like, more specifically,
- to have Elm;
- to have an updated version of emacs;
- to be able to use the "delete" key to correct my mistakes;
- to have an environment the closest possible to the environment of Xwindows under DEC/ UNIX.

RESPONSE

-Sorry, we do not have ELM.
We have standard UNIX mail, Sun's Mailtool, plus MH, the mail system developed at Rand. To use MH, you need to load a "module." Put this code at the top of your .cshrc:

```
if (-e /usr/local/Modules/init/csh) then
        source /usr/local/Modules/init/csh
        module load mh
endif
```

Then, "man mhmail" will explain how to use MH. Details are far beyond the scope of this message.

- Yes, we have emacs — not the latest version, it is true; but quite usable. Installing the latest version is on our to-do list. Just type emacs to invoke emacs.

- Use the command "stty dec" in your .login after you set the terminal type to make the delete key erase characters.

- It's hard to answer your Xwindows question. You need to supply more specific information — what window manager were you using, etc.

There is a UNIX class available and I urge you to take it. Please contact the Computing Resources Department at x5872 to sign up for it.

UNIX: YACC++

MESSAGE

I need to use YACC++. Can you mount the file system for YACC++ to my machine?

RESPONSE

You can now access YACC++ through the "yxx" module.

UNIX: CHECKING WHO HAS BEEN USING MY ACCOUNT

MESSAGE

Is there a command I can run to see if someone has accessed my account?

RESPONSE

Try:
last yourusername
see "man last" for options.

UNIX: FILENAME COMPLETION

MESSAGE

I'm running the C shell in UNIX, but I don't seem to have filename completion. How do I set this up?

RESPONSE

Use the following command:
set filec
in your .cshrc. The man page for "csh" talks about filec and other features of the C shell, if you are interested.

UNIX: MAKING SOLARIS TERMINALS DISPLAYS BETTER WITH STTY

MESSAGE

Experiment: From a Sun OpenWindows 4.1.3 xterm window log into a Solaris 2.x machine using rlogin; now do an "ls" and get the first character of each line display in the last column of the display with the rest of the line wrapped to the next line of the display. Log out and the condition persists. Check stty all, try reset with no effect.

RESPONSE #1

The condition happens when the TAB is not set to 8 spaces, set and then check out.

RESPONSE #2

I use "stty -tabs" and this works well for me.

MOTIF: USING THE MRE ("MOTIF RESOURCE EDITOR") ON UNIX

MESSAGE

I'm running the "Motif Window Manager" on UX5 client myws. I get the following error when trying to invoke the "MRE" (motif resource editor) utility:
myws.lbl.gov% MRE
Warning: I18NOpenFile: Couldn't open file MRE.uid - MrmNOT_FOUND MRE: cannot open UID hierarchy.
Check UIDPATH environment variable
Goodbye.
This utility does work on other [Sun] "clusters" (e.g., opus).

RESPONSE

The following BETTER work:
— Load the motif module
setenv UIDPATH $MOTIFHOME/bin/%U

With that setting for UIDPATH, MRE repeatedly worked just fine on bigsur, UX5, UX6, csr, martysun. (I may well put this into the motif module). Further, you should copy the file $MOTIFHOME/bin/MRE_types into the directory where you run MRE, so it doesn't complain about not finding it. . . . Well, "worked just fine" is not entirely accurate: I have noted that—despite this—MRE on bigsur complains vociferously:
Warning: translation table syntax error: Unknown keysym name: osfDown [etc]
Then it works OK.
No such complaints on UX5, UX6, csr, martysun, ... This seems to be related to some misery with a file /usr/lib/X11/XKeysymDB, which is part of the X11R4 or X11R5 or X11R5.pl21 distribution — depending on what machine you use! Wonderful. (Who is it that said that a foolish consistency is the hobgoblin of little minds."?) bigsur has the .pl21 distribution version , which seems to give MRE the fits.

UNIX: DBX ON THE SGI WIMSEY MACHINE

MESSAGE

I have been compiling a program, ACEDB, which uses some calls to X, including XtCreateApplicationContext. I can compile and run the program fine, but when I try to run dbx on my compiled program, I get the following message after I call up the executable to run:

```
dbx version 2.40 3/7/92 1:12
Type "help" for help.
Reading symbolic information of '/a/genome/
home/myprog" . . . (dbx) r
[...]
Process 4629 (xace) Illegal instruction
[XtCreateApplicationContext, :0x52eb08]
*[XtCreateApplicationContext, 0x52eb08]
addiu  sp,sp,-32 (dbx)
```

It appears that I can get into the program fine

(hence the copyright and program declaration), but dbx and the XtCreateApplicationContext instruction just don't get along. Has something changed on wimsey.lbl.gov that might affect this?

RESPONSE

The SGI engineers suggest that you
- make sure there's no core file in the directory. (dbx will try to read that core file and use it in with the source.)
- make sure you are not forking any child processes because dbx won't automatically follow the process context.
- verify that you're initializing the variables before making the XtCreateApplicationContext call.

There have been no changes on wimsey in several months.

KERMIT: UPGRADED ON UNIX

MESSAGE

It's not a pressing problem, but I would appreciate it if you upgrade Kermit on the UX cluster. Currently it's Version 4E(072) from 1989. The current version is 5A(188) and is much faster.

RESPONSE

Installed Kermit 5A(188) on UX5 and other Sparc UNIX systems. Built the latest UNIX Kermit, 5A(188),from source. Installed it on the Computer Center Sparc UNIX machines; so Kermit now accesses this version : C-Kermit 5A(188), 23 Nov 92, SunOS 4.1 (BSD)

MESSAGE

I tried to do "rn" and I got a whole bunch of warnings for "bogus newsgroup." Can you tell me what problem is so that I can fix it?

RESPONSE

Explained to the user that the newsgroups were removed as a result of netnews house cleaning and the messages are completely normal.

NAMESERVERS AND CSA5

MESSAGE

Please send this to the appropriate person.
The config.tel file for TELNET on the Workstation server has the wrong ip number for CSA5. Can someone change it?

RESPONSE

Am forwarding this message to the Workstation Group (wksg@lbl.gov), who will certainly take care of it. I do believe the config.tel doesn't need any mention of CSA5 in it all— because Telnet gets the IP numbers for hosts from the nameserver. My config.tel has no mention of CSA5 (nor any other LBL machine) and I can telnet to CSA5 and other machines just fine.

MACINTOSH: TECHMAIL SETUP

MESSAGE

Does anyone know the correct server settings (in the User Preferences) for TechMail. I've tried various combinations (lbl.gov, UX5, UX1, etc..) but I get a "Connection Refused" error when I try to Get Mail.

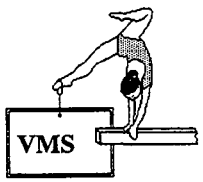
RESPONSE

The "user name" will be your login name on UX1. The "Postoffice Server" will be UX1.lbl.gov and the "Outgoing Mail server" will be UX1.lbl.gov. This does presume that your Mac is on the network and that MacTCP is installed.

VMS: USING MAIL ON CSA5

MESSAGE

I wish to run mail on one of the EOS machines to send/receive mail on CSA5. Where can I find out how to do this. (Note that I'd like to use CSA5, not just any machine on the CSA cluster.)



RESPONSE

On the EOS node, submit the following procedure to CSA5_DECWINDOWS:

```
$ set display/create/node=EOSn
$ mc decw$mail
```

You need to enable security on the EOS node to allow HUMBERT on CSA5 to open windows.

VMS: GOT A PARITY ERROR ON A VMS BACKUP TAPE

MESSAGE

Is there any way I can get past the parity error in the first save set to get to the saveset I want to restore? What "operator assistance" should I have given?

```
myvax>mou/for mkb500:
%MOUNT-I-WRITELOCK, volume is write locked
%MOUNT-I-MOUNTED, HZHBCK mounted on
    _DLS4$MKB500:myvax>backup
    mkb500:pp5gev_may92.bck/rewind/log *.*
```

%BACKUP-E-POSITERR, error positioning MKB500:[000000]PP5GEV_MAY92.BCK; - SYSTEM-F-PARITY, parity error
%BACKUP-I-OPERSPEC
%BACKUP-I-OPERASSIST, operator assistance has been requested
%BACKUP-I-NOOPER, no operator is available to handle the request %BACKUP-I-OPERSPEC, specify option (QUIT or CONTINUE)continue
%BACKUP-F-LABELERR, error in tape label processing on MKB500:[000000]files2.bck - SYSTEM-F-PARITY, parity error
[...]

RESPONSE

It is certainly worth trying to CONTINUE. If that fails, unlikely that you can do much with this tape. In fact, if you can't read the tape even after continuing, so that it doesn't cause you any more troubles, I suggest you store on some other media whatever data you can read and throw the tape away. Please note that we do not recommend putting multiple save-sets on 8mm tape because parity errors typically cause the tape drive to lose its position, and potentially lose more than one saveset.

VMS: MOUNTING LOCAL DISKS FROM VAX WORKSTATIONS ON THE CSA CLUSTER

RESPONSE

It is NOT possible to mount workstation local disks on the CSA cluster and we would probably not remove this restriction because there are problems associated with the security and protection of these local disks.

VMS: ACCESSING GSS TAPES (FROM THE OLD CDC MACHINES)

MESSAGE

How do I access gsstape for retrieval of archival programs?

RESPONSE

Please see the CSA HELP article TAPES, subtopic GSS, which explains how to access GSSTAPE etc.

MODEMS: DIALING UP TO LBL VIA ICS

MESSAGE

When I dial up on the 2400 baud modem, I find I have to hit [enter] d [enter] before I get any response from the computer (I have to do this before the computer prompts me for d,t,o, etc.). Any ideas why this should be so?

RESPONSE

Hope the following helps:
When you dial in, the two modems, (yours and the one at LBL that answers when you call (presumably 486-7930 or 486-7900)), are "negotiating" so that they communicate using exactly the correct (MNP) protocol. Further, when you call at 486-7930, you need to hit the enter or returns so that the communication interface at LBL can decide your baud rate.

MESSAGE #2

Thank you for the advice. I was using 486-7930 before, and I find I do not have to hit any keys if I use 486-7900 instead. What is the difference between the two connections?

RESPONSE

The 486-7930 number connects you to the host computer at the same rate as you called it: 300 or 1200 or 2400 baud. Hence, the communications interface needs to find out your baud rate, hence the need to send some data—by pressing enter—by which it figures out your baud rate.
The 486-7900 number connects you to the host computer at 9600 baud, whether you call it at 300 baud, 1200 baud, or 2400 baud. Of course, the data between your modem and LBL communications interface doesn't change speed, just the flow between the communications interface and the host computer at LBL. Although this sounds like a great gain, in fact some software —Kermit, Vi, etc.— seem not to work with such speed changes in the communications paths. Hence, it is often recommended to use the 486-7930 number. I use it and have been quite happy with it. However, if 486-7900 works for your applications, please use it. I am sending copies to the experts, who will naturally correct whatever needs correction and/or amplification.

GRAPHICS (PVI): REFRESHING THE GRAPHICS WINDOWS WHEN FOCUS IS RAISED

MESSAGE

Currently, DI3000 (on CSA2) does not include the feature to refresh an obscured graphics window when focus is raised and it is brought to the foreground. This is because in the files SY_GRAPHICS:[PVI.USER.DATA]DRVX11.CFG and DRVXDW.CFG the value for

"Window_Damage" is given as 0 (which means no refresh). Could you please change that value in both files to 2, i.e. Window_Damage = 2? That would correct this shortcoming.

RESPONSE

Done.

GRAPHICS: PREVIEWING POSTSCRIPT FILES ON SUN UNIX

MESSAGE

I would like to use ghostview, but do not know the path for it. Is it available through the Modules package?

RESPONSE

Please use

module load graphics/preview

PC: VIRUS PROTECTION

FYI:

(1) Several cases of the michaelangelo virus have been reported on PC's in 47D, 58, and 52. The infections are probably all from a student running on a PC that does not have f-prot. f-prot has been installed and presumably will remain installed preventing future problems.

(2) We tested fprot side by side with Data Physician (licensed by DOE) and found that DP was better at cleanup, no files were lost as with f-prot. DP is available from the Gateway machine in the lab.

VMS: FORTRAN OPTIMIZER ERROR

MESSAGE

I have a program that gives different results when run with and without optimization. Unfortunately the results are correct without optimization and incorrect with optimization so it is difficult to run with the debugger and attempt to get an idea what is happening.

If you are interested in this program I can run it for someone (the major problem is that linking the programs takes about 2 minutes). A small number of routines is involved (maybe a half dozen), but I have been recompiling only one routine, so I believe that only that one routine is involved.

RESPONSE

Called the user.

Suggested compiling with the /CHECK qualifier, which inserts run-time code to check for array subscript errors and the like. He did so and the optimized version ran OK ; no run-time errors with subscripts emerged. It also ran OK under VAX FORTRAN 5.9. Suggested he tried using the statement VOLATILE to label the local variables in the critical subroutine "off-limits" to the optimizer;otherwise, the optimizer may delete the variables when it uses various tricks to speed up the code. He did so and the new optimized version ran OK,-without the /CHECK qualifier. Exempted just one crucial local variable from the VOLATILE statement; recompiled; problem re-surfaced. So it appears the problem is with the optimizer. He sent me the code; I am requesting that the VMS project pass it along to DEC.

VMS (PCA): ERRORS WHEN RUNNING IT WHERE IT IS NOT LICENSED

MESSAGE

I tried to run a piece of code with the PCA today, with scant success. Here's the message I got;

```
$ r track
%LIB, error activating image
DSA101:[SYS1.SYSCOMMON.][SYSLIB]
PCA$COLLECTOR.EXE;6 -SYSTEM,
 protected images must be installed
[horrible error messages deleted ...]
```

RESPONSE

PCA is available and installed only on CSA3. It appears that you were trying to run it on CSA1. Please use it on CSA3.

If you want wider distribution of your comments or questions, we encourage you to send them to trouble since it is seen by a wide range of people, including Divisional management. To use Trouble, enter the VMS, Software Tools, or UNIX mail system and send mail to the address

trouble <return>

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

We encourage new users to include their names and phone numbers in the exchanges; this way we can help them resolve those "startup problems" right away.

NEWS FROM ISS

ISS On-Line Help

ISSHELP is on its Way!

Esther Schroeder

In an effort to improve ISS' accessibility to those using administrative data, and to generate speedier responses to user questions, we have established ISSHELP, a new electronic post office box. E-mail sent to this address will be directed initially to Esther Schroeder, Rich Nosek, Marilyn Graham, Stephen Abraham, Linda Suarez, and Kay Bristol, one of whom will either answer the question on the spot or forward it to the appropriate resource for response.

Using ISSHELP, we will try to answer a wide variety of questions on administrative data; we hope to provide assistance on any topic or project with which ISS is presently involved. These might be . . .

- questions concerning the availability and accessibility of data on the VAX;
- questions on how to use the VAX/Toolkit;
- questions on how to use the new Account Authorization system;
- questions about writing your own Focus reports;
- questions about downloading data to a Mac or PC;
- questions concerning the meaning of a particular data item in the detail ledger.

Forward comments and questions to me at x5306 or

UNIX or Software Tools Mail:	**ECSchroeder@lbl.gov**
VMS Mail:	**lbl::ECSchroeder**

New Training Reports

Nick Armstrong

New reports on Training that requires periodic re-certification have been added to the People/Personnel/Training section of the Toolkit.

Two sets of reports are available:

- The first set of reports lists all courses for which re-certification is required.
- The second set of reports lists the names of employees who will be needing re-certification for one or more courses within the next few months.

Forward comments and questions to Nick Armstrong at x5361 or

UNIX or Software Tools Mail:	**NVArmstrong@lbl.gov**
VMS Mail:	**lbl::NVArmstrong**

Helpful Tip

. . . from Linda Suarez

Did you know . . .

That you can easily list FOCUS database fieldnames, aliases, and their formats without searching through Master File Descriptions (MFD)?

?F Lists fields currently available to you in the MFD.

?FF Lists fieldnames and formats of fields currently available to you in the MFD.

?A Lists aliases currently available to you in the MFD.

?AF Lists aliases and formats of fields currently available to you in the MFD.

Syntax: ?F [filename] [string]
?FF [filename] [string]
?A [filename] [string]
?AF [filename] [string]

The brackets enclose optional parameters where:
filename ..... is the name of the MFD (generally the same name as FOCUS database).
string ..... is a character string up to 12 characters long. The query only displays fieldnames beginning with the character string. If you omit this parameter, the query displays all fieldnames in the MFD.

If you are in the TABLE, GRAPH, MODIFY or SCAN environment, you can obtain a fieldname list by omitting the filename parameter.

Examples:

```
>> ?f fgenldgr
FILENAME= FGENLDGR
* DUM1
* LABEL_DATE  LABEL_INFO  RUNDATE  LABEL_FMON  LABEL_FY
* ACCOUNT
* EXP_TYPE   YTD_AMT    LIEN_AMT PRELIEN
* FSCL_MON   AMOUNT
>>
>> ?f fgenldgr label
FILENAME= FGENLDGR
* LABEL_DATE  LABEL_INFO  LABEL_FMON  LABEL_FY
>>
>> ?ff fgenldgr label
FILENAME= FGENLDGR
* LABEL_DATE/A6 LABEL_INFO/A14 LABEL_FMON/A2 LABEL_FY/A1
>>
>> table file fgenldgr
>?af
* /A1
* LDATE/A6   LINFO/A14   RDATE/A8   LFMON/A2   LFY/A1
* ACT/A6
* EXPTYP/A2   YTD/P14.2S  LIEN/P14.2S  /P14.2S
* FMON/A2    AMT/P14.2S
* /A36      /A4       /A2       /A3       /A5
>
```

THE CONSULT SERVICE

Martin Gelbaum

Following are examples of typical on-line exchanges from our CONSULT forum.

UNIX: POINTERS TO AVAILABLE SOFTWARE

MESSAGE

On a more general level, there are TONS of utilities available, but I for one am in the dark about 95% of them, unless I happen to catch something in the Computing Newsletter. Is there a listing of the most useful utilities and a one sentence outline of what they are for?

RESPONSE

Regarding the software available on our UNIX machines:

(a) **man software** lists much, if not most, of our main software.

(b) If you use modules, set up with statements like these at the top of your .cshrc:

```
# Load module for gs, ghostview, xv, &c. The command
# module display graphics/preview
# gives an outline of what's in this module.
if (-e /usr/local/Modules/init/csh) then
   source /usr/local/Modules/init/csh
   module load graphics/preview
endif
```

(This loads the modules for ghostview, etc., just as it says.) Once you have set up the use of modules,

```
module avail
```

shows a list of the packages (modules) available via module .

(c) There is always "man -k keyword".

Hope this helps.

JOVE EDITOR ON SPARC UNIX MACHINES

MESSAGE

Is it possible to install the editor "jove"? I can only run emacs right now and I hate many of its "features."

RESPONSE

Jove is on our Computer Center Sparc UNIX machines, in the directory

/usr/local/unsupported/JOVE

If you add that to your path, you can use jove.

UNIX: S (STATISTICAL) SOFTWARE

MESSAGE

Is S software installed on any accessible machine?

RESPONSE

The Computer Center does not own that software. Mark J. Durst, (x4136, e-mail address **MJDurst@lbl.gov**), was kind enough to say that he could help at least one other user get access to S. I hope the offer still stands!

UNIX: SETTING DEFAULT PROTECTION ("UMASK")

MESSAGE

In UNIX, what must I do to ensure that all new files will be created with the file protections I prefer (chmod 755) ?

RESPONSE

Please use the command

umask 22

in your .login file. Please note the following from "man umask":

"umask [value]

Display the file creation mask. With "value", set, the file creation mask. Value is given in octal, and is XORed with the permissions of 666 for files and 777 for directories to arrive at the permissions for new files. Common values include 002, (giving complete access to the group, and read (and directory search) access to others), or 022, giving read (and directory search, but not write permission to the group and others)."

UNIX: SUN IPC PROCESSOR SPEED

MESSAGE

Does someone have some order of magnitude estimates for the time required for a floating add and a floating multiply on a Sun workstation such as an IPC?

RESPONSE

The brochure about the Sparcstation IPC states that it has a 25-MHz Sparc integer and floating point unit and benchmarks at 15.8 Dhrystone MIPS and 1.7-MFLOPS double precision LINPACK. If you would like the entire brochure, please let me know and I can send it to you.

HOW TO CONVERT AUTOCAD DRAWINGS TO POSTSCRIPT

MESSAGE

Do utilities exist to convert AutoCAD drawings (stored in DXF or IGES format) into PostScript files? If so, how do I find out how to use them?

RESPONSE #1

The pbmplus package may help. You need to run **module load graphics/pbm** to use it on the Computer Center Sparc systems—UX5/6— as well as sseos, etc. (It's also available on CSA, after **local_tools graphics**.) Its documentation says it can read and write AutoCAD slide format and write AutoCAD DXB format. After loading that package on UNIX, see **man ppmtoacad** and **man sldtoppm**.

RESPONSE #2

IGES is a metafile, a description of a picture rather than a picture (a Sun rasterfile, for example, is a picture). I assume that dxf is the same thing. There is no tool here that I know of that will go directly from one of these to PostScript. One possible path is to use some code (which I hope you have, can get or know about) to take the metafile and turn it into a picture—display it into an X window for example. From this, you can create a PostScript file which is basically a raster dump using either "imconv" or one of the pbm utilities.

Use **module load graphics/tools**, then **man imconv** or **man -k pbm** to find out more about one of the raster file converters.

RESPONSE #3

I did not see the original question, but in viewing the reply I thought I should point out that AutoCAD can read these files and produce a PostScript file. You do this by opening the drawing in Auto Cad. Before Printing, go to **configure** the plotter. Tell the configure routine that you are going to a PostScript device and give it a name. Then when you plot the file tell it to plot to a file and it will. If you have more questions on this, you may call Fred Goozen at x6924. He does it all the time.

ANONYMOUS FTP

MESSAGE

In an item on p. 23 of your April Issue, I read that "Anonymous ftp is not supported at LBL." I wonder if this meant that

- LBL's policy is to prohibit LBL machines from allowing anonymous ftp,
- The Computer Center's machines won't ever allow anon-ftp,
- The Computer Center's machines don't currently, but might later, support it,
- or something else.

As anonymous ftp is rather handy, I had assumed that various research groups at the lab might already—and certainly would in future—"publish" data and reports this way. We haven't gotten around to looking into it yet. Is there some lab policy on this? Thanks .

RESPONSE

Well, perhaps that statement did go a bit too far. In fact, I know of three anonymous FTP sites here at LBL. However, at least one of them limits the hosts from which it accepts FTP connections. On the other hand, quite a few of the Computer Center machines definitely do not permit incoming anonymous FTP connections. I will try to clarify the overall policy—if indeed such exists. We are looking into other ways to make data publicly available over the network—including a Gopher server. We have avoided making a firm policy. Instead, we balance data availability and security issues on a case-by-case basis. In the December 1992/January 1993 LBL Computing Newsletter, p. 13, there is a brief description of Gopher.

X11: SETTING THE NUMBER OF LINES SAVED BY XTERM

MESSAGE

Can someone tell me please how to increase the buffer size (number of lines remembered) in the console (xterm) window. I am running x11r5, on myws, served by UX5.

RESPONSE

Please note this from "man xterm":

-sl number

"This option specifies the number of lines to save that have been scrolled off the top of the screen. The default is 64."

Further, please note that this line

xterm*saveLines: 1000

if loaded in "xrdb -load .Xdefaults", will make 1000 the default number of lines saved for xterm windows (console or not).

X11: PRODUCING A COLOR POSTSCRIPT FILE FROM A X WINDOW DISPLAY

MESSAGE

I am trying to produce a color PostScript file from an X window display. I use "xwd" to produce a

file. However, "xwud" on that file produces only a white pane and "print via xpr" of the file produces a black rectangle. I have tried all the options I could (-xy , -gray , etc.) all with no success. Is there something more than is implied in the manual pages?

RESPONSE

Here's how to do it:
Enter **xwd > some_xwd_file<cr>**
and the cursor changes to a cross. Put your cursor into the window and click a mouse button. Make sure the window is completely unobscured by other windows, completely on the screen, etc. To verify that you got something reasonable, type
xwud -in some_xwd_file<cr>
and you should see what you grabbed. If you didn't, then there is a problem with either "xwd" or "xwud" on your machine (what machine are you using?) . . . Convert to PostScript using "imconv" or one of the "pbm" utilities (available on UX5/UX6). There are no magic options to either "xwd" or "xwud".

GEOMETRY ROUTINES

MESSAGE

Can anyone direct me to (public domain) code (source or library) routines, or printed algorithms or equations which will calculate any of the following:

→ (1) intersection points and/or area overlap between two arbitrary polygons

RESPONSE

This is described in algorithms for "polygon clipping." See "Computer Graphics, Principles and Practice" by Foley & Van Dam, et al, for a detailed discussion of several polygon clipping algorithms.

→ (2) intersection points between a straight line and a circle

RESPONSE

In Foley & Van Dam, this is described on p. 1100. Basically, given a linear equation S(t) and a parametric variable t, you must solve the quadratic equation:
(S(t) - P) * (S(t) - P) = r**2 to find values of t (if any) between the line and the circle.

→ (3) intersection points and/or area overlap between a triangle and a circle

RESPONSE

The intersection point code can be hacked on to give the area overlap.

→ (4) intersection points and/or area overlap between an arbitrary polygon and a circle

RESPONSE

This is an extension of the triangle/circle case. Problems along the lines of "calculate the intersection of this thing and that thing" have usually all been solved for graphics renderers of various types, particularly raytracers. Check out the FAQ in **comp.graphics**, which I think has references for this type of problem.

RESPONSE

The brochure about the Sparcstation IPC states that it has a 25-MHz Sparc integer and floating point unit and benchmarks at 15.8 Dhrystone MIPS and 1.7-MFLOPS double precision LINPACK. If you would like the entire brochure, please let me know and I can send it to you.

VMS: NINE-TRACK TAPE DRIVES

MESSAGE

I have some (3) 9-track tapes with data on them from DEC's BACKUP routine. It seems that if I wish to use the data again I should copy the data to 8mm tapes. Are there any 9-track tapes left where I can do this?

RESPONSE

The nine track tape drives have been moved into the machine room. If you want to use them, the operator on duty will let you in. We do not expect to discontinue nine track tape drive service for the extended future. We may further reduce the number of drives. The move was not intended to signal that the service was being phased out; it is just that they were seldom used and we needed the space. Space for them was available in the machine room. Unfortunately this makes it more inconvenient for users to access them.

COMMUNICATIONS: SENDING A FAX VIA E-MAIL

MESSAGE

I just read about sending a fax via e-mail. How does one do this? Its sounds just great.

RESPONSE

You must register the account(s) you will be sending faxes from. To do so, send a request to **fax-request@csam.lbl.gov** from the account(s) from where you will be sending faxes. All the request needs to include is a three-character password that you will use when sending faxes. After you are registered, you can send faxes by prepending the following to your E-Mail MESSAGE

FAXpassword:
<your-three-character-password-here>
FAXnumber:
<phone-number>
FAXmemobegin:
45 184
These are comments for the cover page.
FAXmemoend:

The outgoing fax line is a Pacific Bell line in the 510 area code, so there is no need to dial a '9' before dialing an outside phone number. Also, our long distance service requires dialing a '1' before the area code.

MACINTOSH: PRINTING TO TRANSPARENCIES ON THE HEWLETT-PACKARD LASERJET 4M

MESSAGE

How do I print transparencies from my Mac on our new HP LaserJet 4M? Better yet, how do I configure the LaserJet 4M so that I can put transparencies in the foldout tray, and then select some option on the Mac so that I don't have to push buttons on the LaserJet and answer all kinds of dialogue boxes on the Mac?

RESPONSE

HP says to use the "MP" tray (p. 3-28). There doesn't seem to be any special setup needed on the printer: I guess the defaults are okay. On the Mac, you'd select the "LaserJet 4M" from the Chooser. Then in the Print dialog, select the MP tray. It works.

CENTRIS 610 PROCESSOR

MESSAGE

I'm interested for primarily informational purposes only. Several colleagues of mine are trying to decide what machine to buy (Centris 610 or 650).

RESPONSE

According to MACWorld, the only way to add a math co-processor to a Centris 610 is to replace the 68LC040 processor chip with a regular 68040 processor chip AND a heat sink for about $400. Do you want me to call for a more accurate price?

MACINTOSH: FILEMAKER PASSWORDS

MESSAGE

Is there a laboratory security policy that prohibits using FileMaker in multiuser mode? I know common sense dictates password protecting files, but people in EH&S have been telling me that they've been told they can't use FM multiuser unless they put the file on their server, that it is a lab security violation to do so. If there is a security risk, we'd better tell everyone. If not, it may be an EH&S policy, and I won't pursue the issue any further.

RESPONSE

There is not a security risk with using FileMaker with passwords in multi-user mode. Also, I know of no LBL policy prohibiting multi-user FileMaker on individual machines. EH&S might have such a policy due to internal reasons. You might want to check with Anil More or Roberto Morelli in EH&S if you questions concerning their policies.

If you seek information on subjects that are not time-critical (e.g., DOE/LBL/Divisional computing policy matters, projected services, training issues), you should consider the CONSULT service an appropriate forum for your computing questions. Forward messages to

consult@lbl.gov

If you're on a Computing Services machine, just send mail to

consult

THE POSTMASTER'S CORNER

Processing Files Enclosed in Electronic Mail

William Jaquith

Some of the common questions asked about electronic mail concern files enclosed within electronic mail . . .

Users of most electronic mail programs can include or "enclose" files within their mail messages when they originate mail. The questions about enclosed messages usually come from the electronic mail recipients because they do not know what to do with an enclosed file.

When a recipient receives the mail on the same (computer) operating system and has the same program as the originator, (his correspondent), then the recipient can easily read and edit the enclosed mail message.

However, when the recipient is on a computer with a different operating system (UNIX, VMS, DOS, Windows, and Macintosh are all examples of different computer operating systems), then the enclosed mail message very likely has to be extracted (copied or moved) from the enclosure and then translated. Even when the file has been translated, the file may have no meaning for the recipient. For example, a user on a VMS host will not be able to do anything with a Macintosh Filemaker document.

So it is important to understand what kind of resources your correspondent has when you are sending electronic mail. If your recipient is running in the same environment (Macintosh to Macintosh or PC to PC) and your correspondent has the same program (Excel or Filemaker), then the recipient will be able use that enclosed file.

When you do not know what resources your recipient has, it is possible to create a "text" version of your file and read that into your mail message. Sometimes this is referred to as "ASCII"[1] text. Note that if you do not "enclose"this message but put the text into the body of the message itself, then this message can be easily read by the recipient. An "enclosed" file in a mail message will have to be extracted before the recipient can read the message.

Today there are some mail gateways that do some file conversions and some file translations automatically for you. Some of these gateways link different electronic mail environments like UNIX mail, VMS Mail, cc:Mail, and Quickmail. We will discuss the use of these gateways in future articles.

Hermes
Postmaster@lbl.gov

[1] For a larger discussion of ASCII, refer to the article on p. 31 of the November 1992 issue of the Computing Newsletter.

VMS E-MAIL TIPS

Martin Gelbaum

VMS users having difficulty "really" deleting their mail messages can successfully remove [any or all of] them by doing the following:

- invokeMAIL
- within MAIL, use these commands

  DELETE[MESSAGE-LIST]

  where "MESSAGE-LIST" could be "/ALL" (for all your messages) or a series of numbers

  EXIT

This should delete the marked messages (including the pesky MAIL$****.MAI files, which are used by VMS MAIL to store messages when they are longer than 1536 bytes).

> Remember, you must exit mail by typing EXIT or pressing <control-Z> after deleting the mail messages. If you QUIT mail, the "deleted" mail messages will not be deleted.

QUIT

Please note this from the HELP facility within MAIL (invoked by typing HELP to the MAIL prompt) on the subject QUIT:

"QUIT exits you from MAIL without emptying the WASTEBASKET folder. Thus, if you enter the DELETE command to delete a message and enter the QUIT command to leave MAIL, the message is still in your wastebasket folder when you return to MAIL." (<control-Y> performs the same function as QUIT.)

PURGE

Another command to try within MAIL (after using EXIT to remove the messages marked "deleted") is PURGE/RECLAIM. Note this from MAIL's HELP:

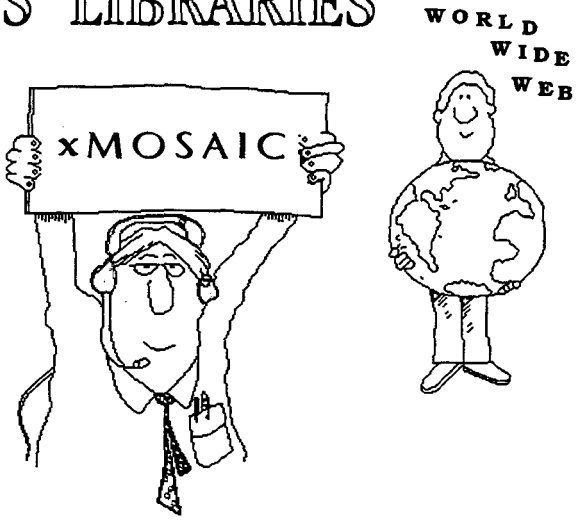
"PURGE deletes all the messages in the WASTEBASKET folder. When you EXIT from MAIL or enter a SET FILE command (to select a new mail file) an implicit PURGE is done to empty the WASTEBASKET folder. Purged message space is not available for reuse by VAX-11 Record Management Services (RMS) until you enter the PURGE/RECLAIM command. An automatic PURGE/RECLAIM is done when the amount of deleted space in a mail file exceeds 32767 bytes." (MAIL uses the CONVERT/RECLAIM Utility to reclaim space.)

Forward comments and questions to me at x4749 or

UNIX or Software Tools Mail:	**mgelbaum@lbl.gov**
VMS Mail:	**lbl::mgelbaum**

NEWS OF PHYSICS LIBRARIES

Werner Koellner



GENERAL INFORMATION

We maintain a large collection of advanced software in support of current work in HEP and related research on the CSA VAX (VMS) cluster and on the Sun (UNIX) platforms. In all cases, object libraries and executable (image) files are built on the local systems from local or imported source codes. Software developed and maintained at CERN represents the major part of this collection. In general the newest releases or pre-releases are offered as default versions for general use with updates and rebuilds occurring at unpredictable times. In most cases HELP library entries or man pages are provided to assist users in selecting or using some particular software package. Please let me know if some package that may be of considerable interest is not available.

o WHAT'S AVAILABLE

CERN LIBRARIES:

ARIADNE	QCD-Cascade Monte Carlo
CMZ	Code Maintenance
COJETS	pbar-p Monte Carlo
DZEDIT	Zebra Bank Doc./Display System
GARFIELD	Drift Chamber Simulation
GEANT	Detector Design
EURODEC	pbar-p Monte Carlo
FATMEN	Distr. File & Tape Management System
GENLIB	General Library
GRAFLIB	Graphics Interface Package
HBOOK	Histogram Package (in PACKLIB)
HEPDB	HEP Database Management System
HERWIG	hadron Monte Carlo
HPLOT	Plotting Package (in GRAFLIB)
ISAJET	pbar-p Monte Carlo
JETSET	Lund Monte Carlo
KERNLIB	General Library
LUCIFER	Lund Monte Carlo
MINUIT	Fitting (PACKLIB)
PACKLIB	General Library
PATCHY	Code Maintenance
PAWLIB	Physics Analysis
PDFLIB	Parton Density Functions
TWISTER	Lund Monte Carlo
ZEBRA	I/O & Memory Mgt. (in PACKLIB)

FILE CONVERSION (to be phased out):

HIGZCONV	Higz File Format Converter
RTOA	RZ to Zebra Alpha Export Fmt
RFRA	Zebra Alpha Export to RZ
RTOX	RZ to Zebra binary Export Fmt
RFRX	Zebra binary Export to RZ

FILE MERGING (to be phased out):

MERGERZ	Merging of ZEBRA Histogram Files

FILE TRANSFER (to be phased out):

ZFTP	Transfer between SUN,VAX, IBM
TELNETG	Higz Graphics on remote hosts

MISCELLANEOUS SOFTWARE:

CALCULATOR	Fancy HP Calculator
DISPLAY(5)	HBOOK/HPLOT Histogr. Manipulation
FOR_STRUCT	Source Code Structuring
EGS	e+e- Monte Carlo
JETNET	Pattern Recognition (Neural Networks)
JY411	CAMAC Drivers
MIDAS (WWW)	Networked Information Retrieval
MOSAIC	Networked Information Retrieval
MORTRAN	Fortran Preprocessing
PROBE	Examine Object Libraries
SWING	Directory Management
TOPDRAWER	Plot Processing
UGS	Unified Graphics Package
VIOLA (WWW)	Networked Information Retrieval
WWW	World Wide Web (Info. Retrieval)

NEWS

CSA

After typing NEW_C*ern, you will use pre-released libraries, etc. of CERN Release 93c (scheduled for June).
Type **WHICH_C*ern** to see which version is in use.
Type **PRO_C*ern** (the default) to point to Version 93b.

The GEANT 3.16 library has been built under **NEW_Cern.**

A beta release of the information (HyperText) browser xMOSAIC is now available on VAX/VMS machines and is now being offered through the Computing Resources Dept. More about this below.

With the above transition, the browsers WWW and MIDASWWW will be phased out.

SUN

After typing **new_cern**, you will be using pre-released libraries, etc., of CERN Release 93c (scheduled for June).
Type **which_cern** to see which version is in use.
Type **pro_cern** (the default) to point to Version 93b.

Type **new_cern** to access the GEANT 3.16 object library.

xMOSAIC, the elegant world wide information (HyperText) browser, has now migrated to the Information Resources Section of the Computing Resources Dept. More about this below.

With the above transition, the browsers "www" and "viola" will be phased out.

LAST MONTH

CSA

CERN software Release 93a is now the default (PRO_C*ERN). Type:
NEW_C*ern => New (pre)releases
WHICH_C*ern => using which?

A new version of TOPDRAWER with X window options is available. Please see more info below.

GEANT 3.16 will be released and chosen when you type new_c.

New releases: HERWIG 5.6, LEPTO 6.1, ISAJET 6.5, and KUIPC.

CERN Short Writeups PostScript files are now in **CERN$SHORTDOC.**

The LPAW Cern Discussion List has been discontinued (use HEPLIB now).

SUN

CERN software Release 93b is now the default (pro_cern). Type:
new_cern => New (pre-)releases
which_cern => using which?

A (somewhat basic) version of TOPDRAWER is now available. Please see additional info below.

GEANT 3.16 will be released and selected when you type **new_cern.**

New releases: HERWIG 5.6, LEPTO 6.1, ISAJET 6.5, KUIPC

CERN Short writeups PostScript files are now in **CERN_ROOT/import/doc/short**

Any symbolic links or scripts that allow execution of CERN or general Physics files will be removed. Instead "**module load <item>**" must be used to establish paths and environments.

MOSAIC, the super-fancy HyperText information management and retrieval package, has been upgraded to Version 0.13 or higher. See "World Wide Web and Related Browsers" below.

GENERAL INFORMATION

CSA

Imported and generally-used software is in the HEP_UTILITIES directory tree. Project-specific and other local software is in the PHYS$LIB directory area.

We recommend that you use logical names **CERN$*_LIB** to access the latest CERN object libraries. Use **NEW_C,** (or **PRO_C**) to choose the desired Release Version.

When linking please see various linker options files in CERN$LIBRARY and PAW$LIBRARY as well as in other areas.

The supported graphics packages are ATC-GKS, X11, and DI3000 (on CSA2).

SUN

CERN library files and sources are in directories beginning with $CERN_ROOT/sun. Other environment variables are CERN_LIB, CERN_BIN, CERN_EXE, and CERN_SRC. When linking with any library, just specify
-l<library>
where <library> is one of the following -

geantlib	Detector description and simulation tools
genlib	gen
garflib	garfield (Wire Ch. Simulation)
graflib(_x11)	hplot5, higz, gkspack
herwig	webber, LUND Monte Carlo
hepdblib	HEP database
isajet	p-p, pbar-p Monte Carlo
jetset	LUND Monte Carlo (Jetset73+Pythia55)
kernlib	kerngen, kernnum
packlib	cspack, epio, fatmen, ffread, zebra hbook4, iopack, zbook, zcedex
pawlib	paw, comis, sigma

(Remember, you can also consult a MAN page.)

COMPUTING ENVIRONMENT

To create the appropriate computing environment for smooth access to the maintained software, as well as the definition of standard symbols and logical names, execute the following:

CSA

It is best to put this line into your login.com

@PHYSICS$MANAGER:SETUP_PHYS

To establish a particular research project environment, execute or add to your login.com

@PHYSICS$MANAGER:SETUP_xxxx

where xxxx may be CDF, TPC, or a number of other current project names.

SUN

The following lines must be in your .cshrc

if (-e /usr/local/Modules/init/csh) then
source /usr/local/Modules/init/csh
... and then one or more of the following:

module load physics/cvs	(CVS)
module load physics/cern	(CERN)
module load physics/phys	(Misc. Physics)
module load physics/sdcshell†	(SDC Simulation)
module load physics/topdraw	(TOPDRAWER)

endif

(† = conflict with module **cern**)

HELP

CSA

Begin with

HELP @PHYSICS_UTILITIES

Specific HELP entries may be displayed directly as well.

SUN

Begin with

man physics

for a general overview of specific man pages.

DOCUMENTATION

(updated frequently)

CSA

CERN PostScript documents and User Manuals are in **CERN$CERNDOC**

So-called Short Writeups are in directory **CERN$CERNSHORT**

Other information files are in **CERN$INFORM** and **CERN$CERNHLP**

*.HISTORY	Release and bug-fix histories
*.DOC, *.MAN	Additional Users' Manuals
*.NOTE	CERN discussions, Bulletins
*.LOGyymmdd	Archived CERN discussion lists
CERN_CNL#.*	CERN Comp. News letter preprints
CPC_LIB_mmyy.	* Quarterly CPC Library indices

SUN

CERN PostScript documents and User Manuals are in **$CERN_ROOT/import/doc**

Short Writeups are in **$CERN_ROOT/import/doc/short**

Other documentation may be mentioned in specific man pages.

• THE CERN CONNECTION

We encourage users to report problems or questions regarding CERN libraries by writing to one of the following discussion lists, or to me (WOKoellner@lbl.gov):

LGEANT@CERNVM.BITNET (about GEANT)

HEPLIB@CERNVM.BITNET.....
.....(about Cern Library codes)

You may also subscribe to any of these discussion lists by sending an electronic mail message containing the single line

SUBSCRIBE <list> <your full name>
(**<list>** being one of the above) to

LISTSERV@cernvm.cern.ch.

• CERN LIBRARY USER LISTS

Users who wish to be alerted whenever I rebuild the default GEANT or PAW Libraries or update other CERN Libraries may register by sending me a request.

• xMOSAIC, THE WORLD-WIDE WEB and related BROWSERS

MOSAIC now on SUN and VAX

One of the goals of the World Wide Web Project is to work toward standardization in information processing, particularly in the format and syntax of HyperText documents. This goal underlies the massive efforts to make world-wide information databases, text and graphical data available at your fingertips. The initial offering—the WWW line mode browser—spawned MOTIF-based HyperText browsers VIOLA (UNIX), MIDASWWW (Vax/VMS) and, more recently, xMOSAIC (UNIX). Aside from access to non-scientific information, publications, books, news, art works, etc., these servers provide opportunities for information exchange and information sharing via world-wide wide-area networks that are already in place. For this reason I have made these products available in the context of physics-related software. The recent new product, MOSAIC, enjoys solid development support from its authors and superior elegance and versatility. More importantly, Martin Gelbaum of the LBL Computing Resources Dept. has ported this browser to the VAX/VMS platforms, so MOSAIC is offered and supported locally as a product of the Information Resources packages through the auspices of the Computing Resources Dept. The supported browsers will be MOSAIC and LYNX; please read the relevant articles about them elsewhere in this issue. I will be phasing out support for browsers WWW, VIOLA, and MIDASWWW in coordinated fashion.

The following information and procedures will become obsolete in a about a month.

See HELP WWW or man www for information on all supported browsers.

BROWSER INFORMATION

(CSA)

type "**midas**" (Motif browser)
or "**www**" (line-mode browser)

Type **HELP WWW** for more info

(SUN)

Type **module load physics/www**

then type "**viola &**" (HyperText browser)
or "**www &**" (line-mode browser)

see man www for more info

Besides the excellent online information, you'll find additional documents in **$WWW_ROOT/doc.**

• TOPDRAWER

Some efforts to enhance the functions and graphic output modes of this popular plotting program are underway. On the CSA cluster, the latest "RICE" version features X window plotting with automatic opening of an X Window when the input file is specified on the command line or via "set file input". Locally developed features like Adobe Illustrator Output for use on MACs to

create better publication-ready plots will be added to this version. The command to execute this version is "tdx". Consult HELP TOPDRAWER for additional information.

On the SUN, a somewhat limited version of this program has been installed, thanks in part to Rick Donahue (LBL) and Tom Pavel (SLAC). After doing "module load physics/topdraw", just type **topdraw [input file]** <cr> to execute the program.

o CERN LIBRARY

Release 93c of various CERN software is scheduled for June. Pre-releases of various packages are imported to LBL for those who may wish to have an early look at new features or bug fixes. Type "new_cern" to link with the new libraries or to use a new executable file (PAW, for example). Type "pro_cern" to revert back to Releases 93b. Type "which_cern" to find out which version is currently in use.

o CVS/RCVS (On the SUN UX5 File System)

CVS (Concurrent Version System) and RCVS (Remote CVS) is a public- domain program package which allows version and release control of typical large-scale HEP software developments on UNIX platforms. It permits and controls concurrent development in the multi-developer, multi-directory, and multi-group environment found in large research collaborations, with hierarchical storage and retrieval of software versions. Networking capabilities have recently been implemented and are being tested. This gives remote sites transparent access to source code stored at a master site. Thus software developers at remote sites are able to create, extract, modify, and eventually merge source code in nearly concurrent fashion.

CVS is a front end to RCS (Revision Control System) extending it in a number of ways, primarily in the notion of concurrent development and the extension of a product from a collection of files in a single directory to a hierarchical collection of directories each containing RCS managed files. There is also support for merging updated third party releases with local modifications and many other capabilities. Although CVS is relatively robust and presumably enjoys fairly active development, that cannot yet be said about RCVS. The latter is still in its infancy and development efforts seem marginal. In spite of CVS' robustness, there exist a number of problems which in many cases can be fixed by available patches. Everyone is looking forward to an upgrade release soon. If you wish to follow the CVS discussions you may subscribe to the mailing list by sending a request to

info-cvs-request@prep.mit.edu

To access CVS/RCVS you need to execute "module load physics/cvs". Please see "man cvs_intro," "man cvs_faq," or "man cvs" for further information.

o HERWIG

Version 5.6 of this Monte Carlo Event Generator for Hadron Emission Reactions with Interfering Gluons has been released. Link with this library via "CERN$HERWIG_LIB" (on CSA) or "-lherwig" (on the SUN). See also the following files:

Cern$Inform:Herwig56.Doc
User Manual

Cern$Inform:Herwig56.Tex
LaTeX list of available processes

Cern$Library:Herwig56.SUD
Default Sudakov Form Factors

Cern$Library:Herwig56.Inc
Fortran Include Sequences

o LEPTO

This LUND Monte Carlo Generator for Deep Inelastic Lepton-Nucleon Scattering has been upgraded to Version 6.1. Documentation is available in printed hard copy.

o PDFLIB

This is an integrated package of PARTON DENSITY FUNCTIONS including a program to calculate the strong coupling constant "alpha" to first or second order. Use

CERN$PDF_LIB (on CSA)
or
-lpdflib (on SUN)

when linking. The user manual is

CERN$CERNDOC:PDFLIB.PS

Forward comments and questions to me at x4398 or

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

VMS Mail: **lbl::WOKoellner**

THE WORKSTATION SCENE

NEW HELP DESK HOURS

There are new office hours for both the UNIX/VMS and Workstation Help Desks.

Every Morning

The Workstation Group Help Desk, in Bldg. 50B, Rm. 1237, (x6858), will be open for business Monday through Friday, from 8:30AM to 12 noon.

Every Afternoon

The VMS/UNIX Help Desk, also in Bldg. 50B, Rm. 1237, (x5981), will be open for business Monday through Friday, from 1 to 4PM.

While Bldg. 50B, Rm. 1237 will be open all day during the week,

- we encourage Macintosh and PC users to schedule their visits to the Help Desk in the mornings, and
- we encourage VMS/UNIX users to drop by in the afternoons.

Off-Hours Forwarding

The two phone numbers, x6858 and x5981, will be answered during the office hours. After hours, x5981 will be forwarded to x6211 (Operations) and x6858 will connect to the Workstation Group's voice-mail.

The Workstation Group staff will do their best to assist the VMS and UNIX users by finding the best answer for their questions or requesting that they send e-mail to "trouble."

Similarly, the VMS and UNIX group will assist Macintosh and PC users by finding the best answer for their questions or requesting that they send e-mail to "trouble."

Users will definitely get the help they need when they send mail to "trouble."

We appreciate your cooperation with this change, which, as you can imagine, is related to our efforts to provide the best service in the most efficient way.

The Workstation Group Laboratory, home of the WKSG Help Desk, the WKSG Evaluation Library, several WKSG members, is located in Bldg. 50B, Rm. 1237.

The **WKSG HELP DESK** hours are:

Mon - Fri 8:30 AM - NOON

The **VMS/UNIX HELP DESK** hours are

Mon - Fri 1 - 4 PM

To reach reach the Workstation group using UNIX, QuickMail, Software Tools mail, etc, send E-mail to:

`workstation@lbl.gov`

To reach the Workstation group using VMS mail, send E-mail to:

`lbl::workstation`

Main Help Desk Line.....x6858
Evaluation Library & Stores line x7444

To reach the **VMS/UNIX Help Desk** , send E-mail to:

ACQUISITION & SOFTWARE MANAGEMENT AT LBL

Bargain software will soon be a memory. Is there an alternative that won't break your departmental budget?

...by Workstation Member Bruce Burkhart

The Microsoft Saga

In April, LBL lost its *educational status* with Microsoft Corporation. This means that we will no longer be able to make direct purchases of inexpensive software products, as we did in the past.

In the past, LBL had been considered part of the University of California in its agreement with Microsoft to buy software at educational (read "lower") rates. At the conclusion of yearly negotiations between Microsoft and UC in April, the LBL connection was conspicuously missing in the newly-signed contract. The other National Laboratories that were affiliated with the UC System were also dropped. Microsoft's insistence on excluding the National Laboratories in the contract can probably be attributed to (1) a redefinition of "educational status," and (2) a balancing of corporate policy with new Federal regulations.

Microsoft is not the only company that is rethinking its business connection with the Federal Government. Probable cause—far-reaching new rules and regulations enacted last Fall by Congress (and now in place)—that reshape the principles by which business is conducted with Federal government entities.

The Fallout

Most every PC or Mac user at LBL has dropped into the Workstation Lab at some time to pick up a really low-cost copy of Word or Excel. Under the terms of the former agreement with Microsoft, it was a good software deal for LBL, and a good deal for the taxpayer. Expect that to change.

The Workstation Lab/Resale Desk

Our Present Status

Irrespective of on going negotiations, its's Business as Usual in the Workstation Lab Resale Center.

We did look ahead, and had sufficient time before the deadline of the original Microsoft agreement to order software. So, for the short term, our shelves are full at the "old and low" prices. Stock in the more popular applications (Excel and Word) should hold out for some time. If you haven't upgraded to Word 5.1, do so soon; we have several hundred on hand at $14.95. We also have a few hundred DOS 6.0 upgrades, at $48 per copy. With our other Microsoft, Claris and Apple software, you can still look for our traditional low academic prices.

Down the Road—this summer

When the current inventory of low priced academic Microsoft software is gone, new software has to be ordered. And since we've lost our academic standing with Microsoft, this new software will have to be ordered through normal retail channels. Although we will still get an academic discount in the retail channel, this price will be significantly higher than the prices we used to get when dealing with Microsoft directly.

Since the cost of restocking Microsoft products in the near future will be more costly, we will not keep an inventory of language (compilers), or other little-used, seldom-asked-for software, for PC/Windows or the Mac. However if requested, we will reorder this software on a one-to-one basis.

Pricing.

As *new* MS software (in 1 and 2 units) has to be purchased from non-educational channels, costs will triple (at least!) in most cases. Future MS software prices will stand out like red wine on a white tux. MS Word for the Mac is now on our shelf for $72.79: get ready for the package to sport a $250-$300 pricetag in the future. Word for Windows, Excel, PowerPoint and other popular applications will experience similar price increases.

Despite the rather dark scenario, there may be a silver lining. Here are some *ifs*.

- If LBL can negotiate an agreement with a third-party vendor, we can hope to supply software at volume prices. (These prices will *still* be an average of three times the cost of previous Academic priced software.)

- If you consider buying *Microsoft Multi Unit Packs*, you can realize a markdown. (You could, for example, buy a Word/Mac 20-unit license for about $4600. You get a single copy of the documentation (extra documentation

sets are available), and the savings are substantial ($230 per copy versus $290 for single copies). We used to get Word Academic 10-packs for $300.

- If users become *creative buyers,* savings can be realized. If you can't handle the Multi Unit route, why order a single copy of Word for Mac and/or Excel (about $290 ea.), when you could buy Microsoft Office ($445)? Office includes: Word, Excel, Powerpoint, and Mail (Note: MS Mail is not supported at LBL). You can save several hundred dollars, and your software registration problems are simpler. It comes on CD-ROM too.

- If you look for *special upgrade offers,* you can save. MacZone is currently offering an upgrade path to Mac Excel 4.0 for $94. T hey need a copy of your User Guide front page and serial or license numbers from your current version of Excel.

- If you're looking for new software, check out *competitive upgrades.* For example, let's say you have FoxBASE Mac, File Force, or one of several other database applications. Currently there is a competitive upgrade to FileMaker Pro 2.0 for only $108 (normally about $320). The deal requires proof of ownership of a competing database mentioned above. There are dozens of such offers available through software house catalogs.

Maintenance—upgrades

You will generally get cheaper and faster turnaround by handling your own software upgrades. Taking care of your own upgrade maintenance is a difficult issue and the Workstation Lab will help in those instances where a Lab wide upgrade is possible. Right now, you can drop by the WKSG Lab and pick up a Word 5.1 upgrade.

When an upgrade is announced that affects a large installed base at LBL—and is relatively inexpensive and comparatively simple to administer—the Workstation Lab will provide the service. In most cases, however, you will be encouraged to be responsible for single upgrades for both speed of delivery and low cost.

MAINTENANCE RELEASE FOR FILEMAKER PRO 2.0 (MAC AND WINDOWS VERSIONS)

March 1993 update for FileMaker Pro 2.0 on the Macintosh

In March, Claris Corp. brought out a new maintenance release (**2.0v3**) for FileMaker Pro 2.0. It includes "Updater" software, to update earlier versions of **FileMaker Pro 2.0** to the current version, some minor program fixes and a very helpful feature enhancement in the Import dialog box.

You can obtain a copy of the Updater by accessing the WKSG Server2. (See below for details on how to access the server.) On the server there is a folder named *FileMaker update* which contains the FileMaker Pro 2.0v3 Updater, a FileMaker Pro 2.0v3 Release, and UpdateMaker Read-Me. Please read the UpdateMaker Read-Me for details on installing the new version.

When you run the Updater, the changes are incorporated into your original software, creating a "new application." If you don't have an original FileMaker Pro 2.0 program and would like to purchase a copy, please contact the WKSG Store at x7444.

Enhanced Feature

• A Match Field button was added to the Import dialog box for the same version FileMaker Pro to FileMaker Pro importing feature. The button aligns fields when the names match and enables import for fields of compatible types.

Minor Program Fixes

This update
• Improves file linkages for Lookups across the network;
• Corrects certain problems when Printing. (It prints objects colored with the FileMaker Pro color menu correctly on color Apple ImageWriter printers.)
• Improves the printing of fonts in EPSF graphics;
• Corrects certain problems when using AppleEvents. (It changes several constants to match those defined in the Apple Events Registry.)
• Changes the user terminology for the "Clone" event to Duplicate.

To access the server:

- Select Chooser under the Apple Menu.
- Select the AppleShare icon and the lbl AppleTalk zone.
- Select file server: WKSG Server2. Click OK.
- Register as a guest. Click OK.
- Choose WKSG 300M Disk (Do NOT click on the little box next to the diskname). Click OK.
- Open the server icon when it appears on your screen and open the *FileMaker updater* folder. This file contains the FileMaker Pro 2.0 Updater, a FileMaker Pro 2.0v3 Release, and UpdateMaker ReadMe.

Important: When you are through copying the information you want from the WKSG Server, please drag the server icon to the trash. This will allow someone else to access the server.

Note: If you don't have access to the network, please stop by the Workstation Group Lab (Bldg. 50B, Rm. 1237) with a formatted Macintosh diskette. The Workstation Group hours are 8:30 AM-12 noon, Monday through Friday.

March 1993 update for FileMaker Pro 2.0v2 for Windows

FileMaker Pro 2.0v2 for Windows is also the latest version (March 1993). If you would like to update your 2.0v1 program, you may fax your request to Claris at (408) 987-7447. Make sure you give them your software serial number and your address so they can mail you the FileMaker Pro 2.0v2. (Unfortunately, since there is no Updater software on the Windows version, you'll have to contact Claris directly for this maintenance update.)

Improvements

Here is a list of improvements with the new version.

- Improves application stability when over 200 fonts are installed on your PC.
- Fixes data integrity problems in files larger than 16 MB.
- Improves gray scale printing and increases compatibility with third party printer drivers.
- Improves file linkages for lookups across the network and for lookups involving repeating fields.
- Improves compatibility with Farallon PhoneNET 3.0 for Windows.
- Fixes problems with import field mapping in ScripMaker.

. . . *Carole Casaretto*

MacDumps

Bill Benson

Computing Resources has been offering "MacDumps" disk backups for Macintoshes on LBLnet for nearly four years. About half the Macs visible on LBLnet are currently using this service, as well as a dozen or so on the campus network. If you are using some other method, or none at all, here are some points to consider.

Confidentiality

Backups are done from one of the two UNIX hosts (dp1 or dp2). Your Mac is "locked" to one or the other of these two hosts and will NOT respond to requests from any other machine. Network access is secure, since there are no user logins on these machines.

When a backup is completed, the dump file is immediately written to tape. The tapes are stored behind locked doors in an area accessible only to Computing Resources personnel.

Security.

Original dump tapes are stored on-site (in metal cabinets) for immediate access. Copies are also made and stored off-site, so that should a catastrophe occur (earthquake, fire, etc.), the complete contents of all disks, including vital institutional data, can be recovered.

This possibility is real. An LBL scientist who lost his home in the Oakland hills fire of '91 reports that despite faithfully backing up his Mac at home, the backup floppies perished alongside the Mac in the same room.

Redundancy.

If you're relying on a single tape drive, what do you do if it breaks just when you need to restore something? Do you depend on a single individual to understand your setup? We have multiple dump servers, tape drives, & personnel to handle such contingencies.

Archival storage for dump tapes.

Sometimes it happens that you suddenly can't find a file that should be on your disk. When this is a file you haven't opened in a while, it may have been missing for some time, so having just the latest backup won't be enough. We keep dump tapes for the past six months, so older files can be recovered as easily as current ones. About half our requests are to restore single files and half to restore crashed (or stolen) disks.

Quick restores.

Restoring a file with MacDumps usually takes only a few minutes.

Bargain rates - no hassle.

The rates for MacDumps are set to be affordable: a flat $15 per month regardless of disk size. This is the total cost, after a one-time startup charge of $25. You just leave your Mac powered on overnight, and the backups are done automatically over the network.

A different setup could well involve a dedicated server, tape drive, media, and commercial software, plus hardware and software maintenance and the hassle of managing it. All these costs, plus personnel, should be combined when comparing rates.

Notification.

MacDumps alerts you to backup problems with automatic E-mail. Problems can range from mistyping your disk name to the side effects of sharing certain files across the network on mounted AppleShare volumes. The problem with the latter is that certain applications deny read access, so that neither MacDumps nor any other backup software can read files opened in this way.

This is a particularly subtle problem, since unless your backup software detects this situation and sends notification, you probably won't realize your crucial database isn't being backed up till it's too late to do anything about it (see the Dec/Jan Newsletter, pp. 40-41).

Consider this . . .

Even if don't think you have anything critical on your disk, it could be very painful to reconstruct 40-80-100 megabytes from original floppies and other less accessible sources. Not to speak of the time spent doing it, which could easily offset the saving from not doing backups.

For further details, see the write-up on the WKSG Server 2 AppleShare server in the lbl zone, 300M Disk, Backup Utilities folder, macdumps@dp2 folder. This describes the information we need to find your Mac on the network. Installation is simple - just put Dumper in your System Folder and reboot.

Forward questions and comments to me at x5703 or

macdumps@lbl.gov, lbl::**macdumps**,
lbl::**whbenson**, or **whbenson**@lbl.gov

YES, I would like to receive the LBL Computing Newsletter

NAME .....

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STATE .....

ZIP

PHONE .....

Return to.....LBL Computing Newsletter
Diana Morris - MS 50F
Lawrence Berkeley Laboratory
Berkeley, CA 94720

Attention: **NL MAILING LIST**

COMMENTS, QUESTIONS, SUGGESTIONS FOR FUTURE ARTICLES:

You can also send an e-mail message to newsletter@lbl.gov

Lawrence Berkeley Laboratory
Rita McLean - 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 (510) 486-<xxxx>

INFORMATION AND COMPUTING SCIENCES DIVISION

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

INFORMATION TECHNOLOGY RESOURCES PLANNING

Head: Dave Stevens (DFStevens)	7344	50B	2232D

INFORMATION AND COMPUTING RESOURCES

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

ADVANCED DEVELOPMENT PROJECTS

Head: Dennis Hall (DEHall)	6053	50B	2239D

COMMUNICATIONS & NETWORKING RESOURCES

Head: Bob Fink (RLFink)	7083	50B	2258B
Network Systems			
Bob Fink (RLFink)	5692	50B	2258B
LBLnet Manager			
Ted Sopher (TGSopher)	4144	50B	2258G
COMMUNICATIONS & NETWORKING FACILITIES			
Sig Rogers (SGRogers)	6713	50B	2258F
DATA COMMUNICATIONS SUPPORT GROUP			
Paul Murray (PGMurray)	5354	50B	2215
Terminal Installation and Repair			
INTEGRATED COMMUNICATIONS SYSTEM OFFICE			
Head: Sam Gibson (FSGibson)	4234	50B	2258D
TELEPHONE SERVICES			
Linda Smith (LKSmith)	4440	50B	2267J
ICS SERVICE CENTER			
Richard Gregory (R_Gregory)	7947	50B	2267K
ICS OPERATIONS ENGINEER			
Cindy Wood (CLWood)	4777	50B	2258E

COMPUTING RESOURCES DEPT.

Head: Marv Atchley (FMAtchley)	5455	50F	117
Deputy: Harvard Holmes (HHHolmes)	5742	50F	115
Central Office	5871,2	50F	146

GRAPHICS

Nancy Johnston (NEJohnston)	5093	50F	145

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Eric Beals (ERBeals)	5351	50F	143

UNIX SYSTEM AND DISTRIBUTED PRINTING

Craig Eades (CAEades)	6569	50F	144
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System Manager: Roger Cochran (RJCochran)	5565	50F	127

WORKSTATION GROUP

Nancy Johnston (NEJohnston)	5093	50F	145
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COMPUTING FACILITIES

Operations Area	6211	50B	1215B
Duncan Connor (DJConnor)	6211	50B	1275A
Dan Van Zile (GDVanZile)	5534	50B	1275F

NERSC Consulting Number is 510-422-1544

IMAGING TECHNOLOGY GROUP

Head: William E. Johnston (WEJohnston)	5014	50B	2276

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, 7300	50B	-2258G
DECnet Administration			
William Jaquith (WDJaquith)	6966	50F	- 128
IBM PC & Mac Network Administration			
William Jaquith (WDJaquith)	4388	50F	- 128
Nancy Travis (NJTravis)	7690	50B	-1232D
Mark Rosenberg (MLRosenberg)	6708	50B	-1232C
Distributed Printing/Shiva FastPath administration and requests			
Bob Rendler (RERendler)	5629	50F	- 129
AppleTalk/Shiva **FastPath Support**	5354, 7300	50F	- 2215

LBLnet troubles	trouble@lbl.gov
LBLnet installation requests	net-install@lbl.gov
LBLnet comments or non-critical trouble reports	lblnet@lbl.gov
LBLnet IP number administration	ip-request@lbl.gov
LBLnet SLIP requests	slip-request@lbl.gov
LBL Postmaster for Lab-wide mail	postmaster@lbl.gov
Network Advisory Group (NAG)	nag@csam.lbl.gov

IP Numbers: for CSA Cluster	CSA1	128.3.254.196
	CSA2	128.3.254.197
	CSA3	128.3.254.198

ICS

ICS Access Names

[VAX 66xx's (Generic)	CSA]
VAX 6610 (VMS)	CSA1
VAX 6610 (VMS)	CSA2
VAX 6610 (VMS)	CSA3
SUN-3/280 (UNIX 1)	UX1
SUN-690 (UNIX 5)	UX5
SUN-690 (UNIX 6)	UX6
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	932-8618
Palo Alto	415-366-1092	361-8701
San Jose	408-432-3430	432-8618
Fremont	510-490-7366	490-7366
Davis	916-758-3551	
Burlingame	415-588-3043	
Vallejo	707-644-1192	
Antioch	754-8222	

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