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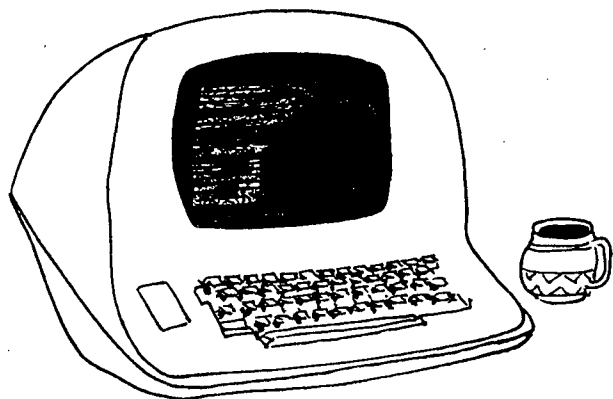
Lawrence Berkeley National Laboratory

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LBL COMPUTING NEWSLETTER

Lawrence Berkeley Laboratory
University of California, Berkeley

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Vol. 20, No. 5, May, 19 83

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For Reference

Not to be taken from this room

LBL COMPUTING NEWSLETTER

PUB-429

NAMES AND NUMBERS TO KNOW

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

50D/106	x6722	COMPUTER POLICY BOARD
50A/4112	x5511	William A. Lester, Jr., Chairman
50B/3238	x5313	Walter D. Hartsough
50A/4119	x5131	Paula K. Hawthorn
90 /3215	x6286	George L. Pappas
50 /137	x7087	Henry Ruderman
90 /1106	x5728	Mark Strovink
71 /259	x4825	Chin-Fu Tsang
		Michael S. Zisman

50A/4112	x4764	OFFICE OF COMPUTING RESOURCES
50B/2258A	x5739	Robert J. Harvey, Head
50B/2258B	x7344	James A. Baker
50B/2258C	x7083	David F. Stevens
		Kenneth G. Wiley

50B/2232E	x5224	COMPUTATION DEPARTMENT
50B/2232A	x5775	Paul Rhodes, Department Head
50B/2232B	x6287	Howard White, Deputy Department Head
50B/2232C	x6296	Margaret Yamada, Administrator
50B/1232C	x5455	Everett Magnuson, Budget Manager
50B/2232D	x5351	F. Marvin Atchley, Computer Operations & Networks
50A/1127A	x5568	Eric Beals, Consulting & User Relations
50 /209A	x6019	Jerry Borges, Operating Systems & Product Set
		John Colonias, Applications

50B/2232	x5871,2	DEPARTMENTAL SERVICES
50B/1245	x5981	Central Office Number
50B/1245A	x5529	Consultants' Office
50B/1215	x6211	Computation Department Library: Maggie Morley
	x5311	Operations
50B/2249B	x6205	Coke/Cope Operator
50B/2215A	x6256	Expediter Services: Irene Bernal
50B/2249	x6219	Keypunch Service
50B/1245	x6094	PSS (Program Storage System): Tape Services
50B/1245	x6094	GSS Tape Repair Service: Dortha Hines
90 /3136	x6494	Sticky Label Service: Dortha Hines
50B/2262C	x6310	Building 90 Remote Job Entry (RJE) Station
50B/2232	x5654	To open or change an account, Fran Permar
50B/2266	x6713	Guest cards, locker space, & parking permits: Gean Broughton
50B/2259	x5354	To connect a remote terminal (RJE or interactive): Sig Rogers
50B/1245A	x5529	Terminal or Port Repair: Electronics Maintenance
50B/1245	x6094	Introductory seminars: UNIX: Maggie Morley
		WRITEUPS & HANDBOOK on fiche: Dortha Hines

PUB-429 12-82/1200

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

TERMINAL SWITCH ACCESS NAMES

COMPUTER	DEVELCON DIRECTORY NAME	--- GANDALF CLASS CODE ---		
		300 bps	1200 bps	9 600 bps
VAX Program Development Machine	PDM	na	na	na
VAX Numerical Modeling Machine	NMM	na	na	71
VAX Interactive Graphics Machine	IGM	na	na	73
PDP 11/70 (UNIX 1)	UNIX1	15	na	11
PDP 11/70 (UNIX 3)	UNIX3	55	na	51
CDC 6600B, 6400C	RECC	05	03	01
IBM 4341 (UCB)	CCDB	na	na	na

- (1) **na** means NO DIRECT ACCESS. However, Indirect access from GANDALF to all computers is available via DEVELCON.

GANDALF class code **67** connects you to DEVELCON.

(Then) enter **return (<cr>)** so that DEVELCON can determine your terminal speed.

DEVELCON responds with **Request:**

(Then) you enter your DEVELCON directory name and a carriage return.

(If you use this method more than occasionally, please contact Sig Rogers, x6713).

- †† **Note:** There are many additional hosts operated by other groups that are available on the terminal switches. To gain access, you should make arrangements directly with the appropriate group representative.

(2) ACCESS FROM GANDALF/DEVELCON

GANDALF -- with TSB⁶

1. Turn on terminal.
2. Push button on TSB.
3. When green light comes on, hit **<cr>** (return).
GANDALF will prompt with an asterisk (*)
5. Enter class code (e.g., "51" for UNIX3) & **<cr>**
GANDALF will prompt with "SERVICE XX START"
6. Another **<cr>** will get you the host prompt.

DEVELCON

1. Turn on terminal.
2. Push button on TSB⁶. When green light comes on, hit **<cr>**.
3. When you get a **Request:** prompt, enter host directory name (e.g., **unx1**), followed by a **<cr>**.

GANDALF -- without TSB⁶

1. Turn on terminal.
2. Hit **BREAK** key.
GANDALF will prompt with an asterisk (*)
3. Enter class code (e.g., "11" for UNIX1) & **<cr>**
GANDALF will prompt with "SERVICE XX START"
4. Another **<cr>** will get you the host prompt.

(3) DIAL-UP ACCESS to DEVELCON is available.

486-4959 -- 300 BPS
486-4979 -- 1200 BPS
VA-3400 & 212A equivalent.

... Sig Rogers, x6713

⁶ (Blue) Terminal Support Box

HERE'S SICBIG

SICBIG, a Special Interest Committee on Large High-Speed Computers was established in the Golden Gate Chapter of the Association of Computing Machinery on February 2, 1983. Statement of purpose is as follows:

"The organization will facilitate development of computer systems that are capable of arbitrarily large high-speed calculations conveniently and economically.

"The community served includes industry, government, and academia. Member interests may arise from their roles as users, designers, educators, manufacturers, or students.

"The organization will promote the development of a group of people who will be experts in the problems peculiar to computer systems for large high-speed calculations and will facilitate access to appropriate systems.

"The group will be able to function as a resource for government bodies investigating the unique problems of super computer systems."

For more info, contact Frank Olken (x5891 OLKEN@LBL-CSAM) or ...

Mary Fowler
Technology Development of America
Advanced Computational Facility
233-3 NASA Ames Research Center
Moffett Field, CA 94035
(415) 965-6515

NEWS OF LOCAL USER GROUPS

GETTING STARTED

Lab folks who are interested in establishing a Local User Interest Group on site should contact Sally Shlaer, x4687.

DATATRIEVE LUG NEWS

The next meeting of the Datatrieve User Group will be held at 1:30 PM Monday, May 16, in the Bldg. 70A Conference Room (70A/3377). For more information, contact LUG facilitator ...

... Valerie Sherriffe, x5362
or x4460

VAX LUG NEWS

The next meeting of the VAX Local User Group will be held at 2 PM Tuesday, May 17 in the Old Directors' Office (50/154). For more information, contact LUG facilitator ...

... Nancy Deerinck, x4680
or x6411

GRAPHICS LUG NEWS

Users who are interested in organizing a GRAPHICS Local Users Group at LBL are requested to contact Maggie Morley (x5529) or ...

... Jim Miller, x6255

RT-11 LUG NEWS

The next meeting of the RT-11 User (Lunch) Group will be held at noon on Thursday, May 5 in the Bldg. 46A Conference Room. For more info, contact ...

... Mike Green, x5598

CRYPTOGRAM

N D S F G L P F N D S G S R C D P J B R C N P H A R I S E E S G I
B E G J P O S H G I H S C S P R G I L C D Q R N O B K G K F M
F P G L R C D P Y B O F L D . F . J P I H A P I .

VAX SOFTWARE UPDATE

Important additions have been made in the Computation Department's VAX Software Library in the past year.

Two mathematical libraries have been added to augment IMSL and NAG. They are LINPACK and MINPACK, which solve systems of linear and non-linear equations respectively.

Many graphics packages have been added to the software library. DI3000, GRAFMAKER, and CONTOURING constitute a library of graphic systems which allow the user to do device-independent, interactive, three-dimensional graphics. TELLAGRAF is a conversational graphics system which produces charts and graphs. CUECHART is built on TELLAGRAF and is designed to make charts and graphs easier to prepare by using stencils of predefined charts. MOVIE.BYU allows three-dimensional modeling with animation.

Many new languages have been added to make program development easier. PASCAL, C, and native mode DATATRIEVE are now on the system. In addition, there is FORTRAN77 and BASIC.

New VAX users will appreciate two computer-aided instruction courses now on the system. These are VMSCAI - an introduction to VAX/VMS and EDTCAI - an introduction to the EDT Editor. However, you must have a VT100- or a VT52-compatible terminal to access the course.

The Code Management System is a program library system that can be used as an aid to program organization, development, and maintenance. It tracks program changes and reconstructs past program phases.

Listed below is the current VAX software.

VMS Operating SystemAll 3

Libraries

IMSL.....All 3
NAG.....All 3
LINPACK.....All 3
MINPACK.....All 3

Non-graphics products

FORTRANAll 3
BASIC.....PDM
PDP-11 Datatrieve.....All 3
Native Mode DatatrieveAll 3
PASCAL.....PDM
CPDM

Graphics Products

DI3000, GRAFMAKER, CONTOURINGIGM
TELLAGRAF, CUECHART.....IGM
GRAFPAC.....All 3
IDDS.....All 3
MOVIE.BYUAll 3

Editors

SOS.....All 3
EDTAll 3
TECO.....All 3

Networks

THCAll 3
DECNETAll 3
ARPANET.....NMM

Miscellaneous

Code Management SystemAll 3
SEEDISPDM, IGM
FPS 164 Compiler, Simulator.....PDM
Software Tools.....All 3
DISCO Seismic System.....NMM
VMSCAI.....All 3
EDTCAI.....All 3

... Noel Brown, x4387

VAX CLASSES

IN JUNE

VAX user classes will be given in June from 10 AM to noon in the NRCC Conference Room, Bldg. 50D, Rm. 116.

Wednesday	June 8
Friday	June 10
Wednesday	June 15
Friday	June 17

The number of participants is limited, and advance registration is required. To register, please contact Lisa Long, x5947.

... Noel Brown, x4387

Here's GRAFEASY . . .

NEW VERSION OF GRAFMAKER INSTALLED

On June 1, 1983 version 3.5 of GRAFMAKER will replace version 3.0 on the VAX-IGM.

Anyone wishing to use version 3.5 prior to June 1, 1983

LINK yrprgrm,'GREASY','a driver'

After June 1, 1983 version 3.5 will be the production version, which is accessed by

LINK yrprgrm,'GRAPH','a driver'

The new version contains corrections, and additionally includes 16 GRAFEASY subroutines. The GRAFEASY subroutines are based on GRAFMAKER and allow you to generate pie charts, bar charts and line graphs using only a few calls.

NOTE WELL *** NOTA BENE *** NOTE WELL

Since the new version of GRAFMAKER contains changes to the internal structure of the picture vectors, the resulting picture vectors are incompatible with those created by the previous version of GRAFMAKER. Saved picture vectors created with the old version of GRAFMAKER must be recreated using the original program loaded with the new subroutine library.

The source codes for GRAFMAKER test programs that came with the new version have replaced the old ones. To reach these files (named GTEST*.FOR)

\$ D13 \$ DITEST

The executable versions of these test programs are prepared for running on the AED, the IMLAC, and TEKTRONIX (and ADM3A with retrographics boards). To run these programs do

\$ D13

\$ DEMO_AED for example

\$ RUN GTEST3 for example

MANUALS for the new GRAFMAKER version 3.5 (with GRAFEASY) are available through the Computation Department Library, x5529.

. . . Shirley Dawson X4386

UNIX NEWS

We have just received word that the tape containing device-independent *troff* is on the way. As soon as it arrives, we will install it on the TID unix machine so that we can make full use of the phototypesetter. Unfortunately, we will then need to rework the Versatec output driver on UNIX-3 so that it can remain a suitable preview device for the typesetter. At this time, we will also add a sans-serif font (based on the existing, but incomplete, Nonie font) to be used for previewing the Geneva font on the typesetter. To this end, we have decided to defer implementation of the new version of *vtroff*, as well as the proposed *froff* and *dfoff* until the *troff* conversion is complete, at which time we will reevaluate these three projects.

The conversion of the disks on UNIX-1 from RP04 emulation to RM05 emulation was completed last month without a hitch. We have run a series of performance measurements and are pleased to report that the effort produced the desired results. Last Fall, during the busiest of times, the system was cpu-bound, and the disk was busy about 75% of the time keeping up; more recently, at cpu-saturation, the disk is only busy about half the time. Furthermore, last Fall we saw occasional periods of disk saturation where the cpu was forced idle because of a disk backlog. In a week of measurements on both UNIX-1 and UNIX-3, done after the conversion, no disk saturation was observed. While this reflects only a modest improvement in overall performance, it has proved to be worth the effort.

. . . Marty Itzkowitz, x5893

COPE CONTROLLER TO BE RETIRED

Effective July 1, 1983, the COPE Communications Controller will be turned off. Affected users will be transferred to alternate data communication protocols. Forward comments and questions to . . .

. . . Sig Rogers, x6713

ARPANET REACTIVATED

On 1 January 1983 the connection to the ARPANET that originated from RECC/BKY was disconnected -- a move dictated by ARPANET's decision to change their fundamental protocol. On 1 April 1983 that connection was re-established on the VAX/VMS host NMM. Whereas the original software and hardware were developed and maintained by LBL staff, the new package is entirely purchased: the hardware controller that communicates with the IMP was manufactured by *Associated Computer Consultants* and is their model LH-DH/11; the software is a product of *Compton Corporation* and is called ACCESS-T.

In order to use the ARPANET you must have an account on NMM and also have access to some account on a remote host. The three basic services provided are:

telnet: log into another host as if your terminal were directly connected to it (like DecNet "set host");

ftp: (file transfer protocol): move a file between file systems (like DecNet copy);

tcpmail: send mail (like Software Tools msg). You receive mail via Mail or msg.

Of course, all these services that are available to NMM users are also available to remote users -- where NMM is the remote host: the hosts that use the ARPA protocols are generally symmetric.

Brief standard help articles are available; the **ftp** and **telnet** facilities have internal help; and **tcpmail** prompts for all input. A limited number of User Manuals are available for purchase at the Computer Center Library (50B/1245A, x5529). To get started, a very brief introduction follows.

Invoke help as:

\$help @arpanet

Invoke mail as:

\$tcpmail [/file=<filename>] <person> at <host>,...

You will be prompted for subject, text, and carbon copy names. End your text with a line consisting only of a period. The "/file=" option uses the file named as the text, instead of prompting for it.

Invoke the virtual terminal facility as:

\$telnet [<host>]

You will be prompted for the host name if you don't supply it. If the connection is successful, you will be prompted by the remote host. Login and conduct your session as usual, logging out when you are

done. To close the connection from this (local) end, type "^bye" or "^quit". This is necessary if the remote host does not close the connection for you. It is also useful to "escape" from a login sequence. For help with or status-report about the whole connection, type "^help" or "^status".

Invoke the file-transfer facility as:

\$ftp [<host>]

You will be prompted for the host name if you don't supply it. There are no other command-level prompts in ftp, however, commands requiring arguments will prompt for them if missing. Basic commands are **help**, **commands** (a more detailed form of help), **login**, **logout**, **get**, **put**, and **status**. You must login before you can get or put (copy from or to) files. **Quit** and **bye** terminate ftp (and logout for you). It is possible to query the remote end of the connection: this is done by prepending a "/" to such remote commands as **help** and **status**. A very useful remote command is "/stat *.*", which gives a directory listing. Both ends of the connection are very chatty, and begin all comments to you with 3-digit codes.

Experimentation is encouraged. Some sites that LBL staff may find useful or interesting to communicate with are:

nic: the network information center for the entire ARPANET community. Try logging in with user-name "nic" and password "nic".

lbl-csam: a VAX-11/780 running Unix 4.2BSD. Provides a demonstration of the ARPANET ability to move mail, files, and terminal traffic between otherwise incompatible hosts.

lblg: this VMS host is more familiar as a DecNet partner to NMM. It is actually not on the ARPA backbone (IMP) network, but connects through **lbl-csam** to **lblg** via a local network utilizing the ARPA Internet Protocol (IP). This illustrates the ability of ARPANET to transparently bridge the gap between networks -- a technique called **internetworking**.

satnet-echo: this host is a typical **echo-server**, whose function is to reflect everything sent to it. It is a way of testing the functioning of ARPANET under long-distance, high-delay conditions. In this case, the remote host is overseas, two satellite hops away, requiring a round trip of four satellites and probably more than 100,000 miles. You will find in function it is like using DecNet to perform a "set host" function to yourself.

mfe: this is the PDP-10 Tenex host which will be a major gateway for LBL staff to access the CRAY-1 and 7600 supercomputers run by the National Magnetic Fusion Energy Computer Center at Livermore. Several LBL scientists have already used it, and classes are being held to instruct others.

... Steve Lewis, x7100

19 83 VAX MAINTENANCE SCHEDULE

IGM

5/22 0000 - 1200
 3/23 0000 - 0800
 4/20 0000 - 0800
 5/23 0000 - 0800
 5/24 0000 - 0800
 5/25 0000 - 0800
 6/22 0000 - 0800
 7/20 0000 - 0800
 8/22 0000 - 0800
 8/23 0000 - 0800
 9/21 0000 - 0800

NMM

4/24 0000 - 1200
 7/24 0000 - 1200
 3/25 0000 - 0800
 4/25 0000 - 0800
 4/26 0000 - 0800
 4/27 0000 - 0800
 5/27 0000 - 0800
 6/24 0000 - 0800
 7/25 0000 - 0800
 8/26 0000 - 0800
 9/23 0000 - 0800

PDM

3/12 0000 - 1200
 3/13 0000 - 1200
 6/11 0000 - 1200
 6/12 0000 - 1200
 4/13 0000 - 0800
 5/11 0000 - 0800
 6/13 0000 - 0800
 6/14 0000 - 0800
 7/13 0000 - 0800
 8/10 0000 - 0800
 9/12 0000 - 0800
 9/13 0000 - 0800

UCLBL COMPUTER CENTER

PM SCHEDULE

Effective 5/1/83

7600 (CDC) Mondays

CDC 0500 - 0800

Thursdays

CDC 0600 - 0800

6600B (CDC) Tuesdays

CDC 0500 - 0800

6400C (CDC) Mondays

CDC 0500 - 0800

UNIX1 Sunday, May 15

RTSG 0030 - 0600

Monday, May 16

RTSG 0030 - 0600

Tuesday, May 17

RTSG 0030 - 0600

UNIX2 Thursday, May 19

RTSG 0030 - 0600

UNIX3 Saturday, May 21

RTSG 0030 - 0600

IGM Sunday, May 22

RTSG 0000 - 1200

Monday, May 23

RTSG 0000 - 0800

Tuesday, May 24

RTSG 0000 - 0800

Wednesday, May 25

RTSG 0000 - 0800

NMM Friday, May 27

RTSG 0000 - 0800

PDM Wednesday, May 11

RTSG 0000 - 0800

ATL Thursdays

Maint ... 0600 - 0800

COM Tuesdays

Maint ... 0700 - 0900

PSS Wednesdays

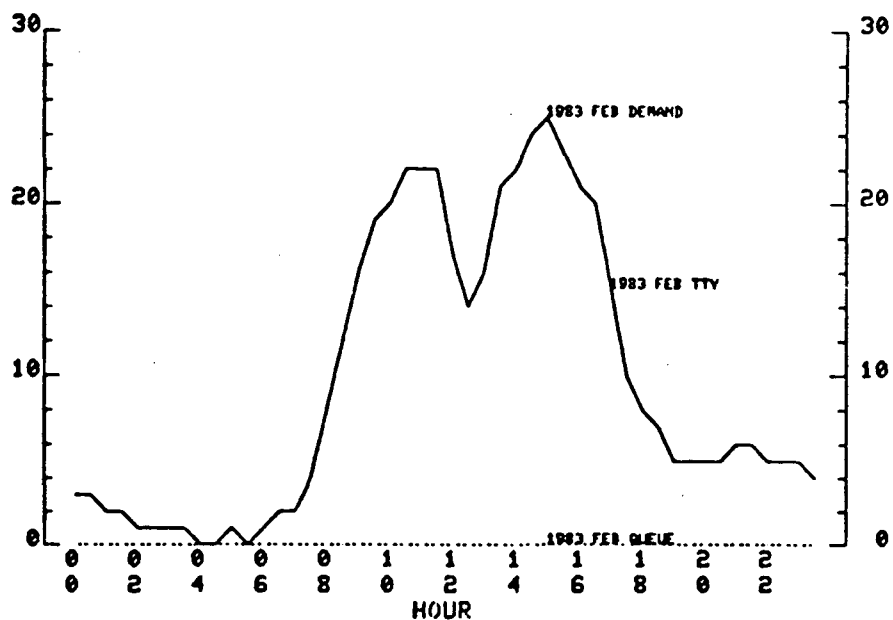
CDC 0600 - 0800

INTERACTIVE STATISTICS

LBL COMPUTER CENTER
PERFORMANCE MEASURES

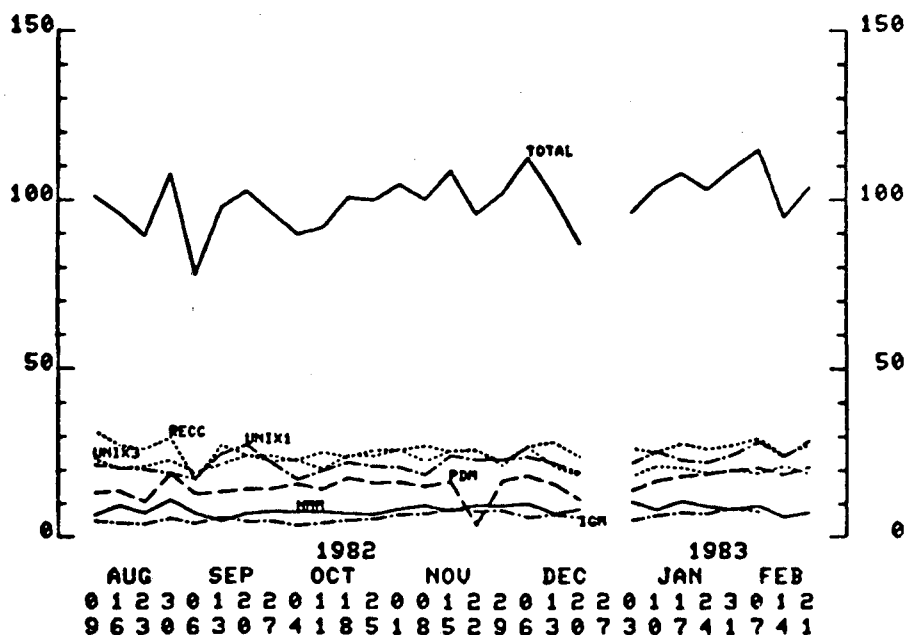
RECC CONNECTIONS AND UNSATISFIED DEMAND
6600 AND 6400 COMPUTERS

FEB 1983 WORKDAYS



INTERACTIVE TERMINAL ACTIVITY

AVERAGE NUMBER OF TERMINALS CONNECTED
SAMPLED AT HOURLY INTERVALS, PRIME USE PERIODS, WORKDAYS



COMPUTATION DEPARTMENT LIBRARY
BLDG 50B, RM. 1245A
LAWRENCE BERKELEY LABORATORY
ONE CYCLOTRON ROAD
BERKELEY CA 9 4720