

# Lawrence Berkeley National Laboratory

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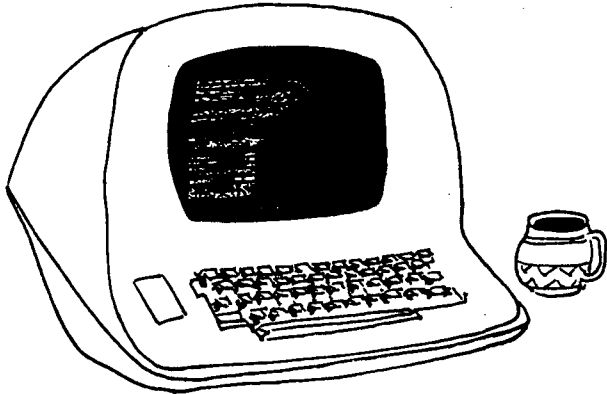
1982

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# LBL COMPUTING NEWSLETTER

Lawrence Berkeley Laboratory  
University of California, Berkeley

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Volume 19, Number 1

January, 1982

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To get on the mailing list for the LBL Computing Newsletter, contact Dortha Hines, 50A/1148, x6094.

**Next Newsletter deadline:** Friday, January 15, 1982. And no later ...

Please send all Newsletter correspondence to Maggie Morley, Editor, Bldg. 50B, Rm. 1245A, (415) 486-5529; or to login name **man** on UNX1, TID7, or UNX3.

Publication Number 429

PUB 429

## Names and Numbers to Know

From on-site, dial the 4-digit extension given.  
 From an FTS line, dial 451-<4-digit extension>.  
 From off-site, dial 486-<4-digit extension>.

## Computer Center

Paul Rhodes, Department Head.....50B/2232E, x5224  
 Howard White, Deputy Department Head.....50B/2232A, x5775  
 Jerry Borges, Software Support and Development.....50A/1129A, x5568  
 Eric Beals, User Relations.....50B/2232D, x5351  
 F. Marvin Atchley, Computer Operations.....50B/2262A, x5455

## Computer Center Services

Consultants' Office.....50B/1245, x5981  
 Computer Center Library: Maggie Morley.....50B/1245A, x5529  
 Operations.....x6211  
 Coke/Cope Operator.....x5311  
 Expediter Services: Irene Bernal.....50B/2249B, x6205  
 Key punch Service: Verneice Arnett.....50B/2215A, x6256  
 PSS (Program Storage System): Pat Gillenwater.....50B/2274, x5234  
 GSS Tape Repair Service; Dortha Hines.....50A/1148, x6094  
 Sticky Label Service: Dortha Hines.....50A/1148, x6094  
 Building 90 Remote Job Entry (RJE) Station: Connie Sheldon.....90/3136, x6494  
 To open or change an account, Fran Permar.....50B/2258, x6310  
 Guest cards, locker space, & parking permits: Marlene Collins.....50B/2232, x5654  
 To connect a remote terminal (RJE or interactive): Sig Rogers.....50B/2262C, x6713  
 For repair of terminals or ports: Electronics Maintenance.....50B/2259, x5354  
 Seminars on the CDC systems: Joyce Rybandt.....50A/1143, x6229  
 To sign up for VAX classes: Lisa Long.....50A/1140, x5947  
 For microfiche sets of WRITEUPS and HANDBOOK: Maggie Morley.....50B/1245A, x5529

## MORE ON STICKY LABEL PRINTING SERVICE

As announced in the October Newsletter, BKY now offers a sticky-label-maker service. 4 types of label-maker programs are presently available, as follows --

- (1) **LARGE**  
For large [1 3/8" x 4"] labels; 8 possible lines of input data per label (8 card/lines must be provided for each) fixed input; single or multiple copies of each label. Sample jobdeck is called "LARGE".
- (2) **SMALL**  
For small [1" x 3 1/2"] labels; 6 possible lines of input data per label. (6 cards/lines must be provided for each). Fixed input; single or multiple copies of each label. Sample jobdeck is called "SMALL".
- (3) **ITEM**  
For small [1" x 3 1/2"] labels; 1 data card/line of input generates a 1 or 2 line label output. Fixed input; single copies of each label. Read and write format specifications can be altered to adapt to any label format desired. Sample jobdeck is called "ITEM".
- (4) **MAILERS**  
Mailing address labels - large only, 7 possible output lines. Many search features, alphabetical sort (of full list or of search options). Comprehensive document for set-up and maintenance of MAILERS program is available on UNX1 and UNX3. Call

`lpr -n /mnt/hines/labdoc`

Set-up for all jobs is straightforward. Once the initial list has been created, the sticky-label job can be submitted as any other batch job. No COS card is required when you submit a job printing on large labels. When submitting a job printing on small labels, a COS card (saying "\*\*SPECIAL PRINT SMALL LABELS\*\*") must be made out at the IO counter. Sticky labels and paper tape carriage ribbons will be provided, (cost automatically charged to your account).

\*\*\* Users are responsible for inputting/updating their own data. \*\*\*

To get a copy of this writeup, execute the following:

```
<jobcard>
LIBCOPY,MAGGIES,OUT,LABEL.
DISPOSE,OUT=PR,PA=1F. . . . Use pa=1f only at BKY
<end-of-job card>
```

## Sample Label Programs

(1) For Large Labels

```
large,5,100,50000.acctno,users name
*b
run76.
link,x,l=out,pp=[lc=777777].
dispose,output=sl.
  program label (input,output)
  dimension name1(9),name2(9),name3(9),name4(9)
  real name1,name2,name3,name4,who1,who2,who3,who4
  read 1,num
  1 format (i4)
  print 10
  10 format (1h1)
  print 2
  2 format (6h1*ovf*)
  i=0
  12 i=i+1
  if(i.eq.11) go to 13
  print 6
  6 format (39h*****
  print 9
  print 9
  print 9
  print 9
  9 format (39h*
  print 9
  print 9
```

\*)

```

        print 6
        print 11
11 format (5h      )
        go to 12
13 continue
        j=0
3 continue
        if(j.eq.9) go to 7
        j=j+1
        read 4,who1,who2,who3,who4
4 format (4a10)
        if(who1.eq.4hquit) go to 300
        name1(j)=who1
        name2(j)=who2
        name3(j)=who3
        name4(j)=who4
        go to 3
7 continue
        i=0
8 continue
        i=i+1
        print 5,name1(1),name2(1),name3(1),name4(1)
        print 5,name1(2),name2(2),name3(2),name4(2)
        print 5,name1(3),name2(3),name3(3),name4(3)
        print 5,name1(4),name2(4),name3(4),name4(4)
        print 5,name1(5),name2(5),name3(5),name4(5)
        print 5,name1(6),name2(6),name3(6),name4(6)
        print 5,name1(7),name2(7),name3(7),name4(7)
        print 5,name1(8),name2(8),name3(8),name4(8)
        print 5,name1(9),name2(9),name3(9),name4(9)
5 format (1x,4a10)
        if(i.eq.num) go to 20
        go to 8
20 i=0
        j=0
        go to 3
300 stop
        end
0100   *** is the number of labels for each set

        *** put input data cards here, after the number card,
           before the quit card
        *** takes 8 data cards to create one label set

```

```

(1) university of california
    berkeley
(2) ucb/white
(3) astronomy department
(4) attn: s. m. white
(5) campbell hall
(6) room 601
(7) berkeley, california 94702
(8) campus
quit

```

## (2) For Small Labels

```

small,5,100,50000.acctno,users name
*b
run76.
link,x,l=out,pp=[lc=777777].
dispose,output=sl.
        program label (input,output)
        dimension name1(6),name2(6),name3(6),name4(6),num(1)
        real name1,name2,name3,name4,who1,who2,who3,who4
        read 1,num
1 format (i4)
        print 10
10 format (1h1)
        print 2

```

```

2 format (6h1*ovf*)
i=0
12 i=i+1
if(i.eq.11) go to 13
print 6
6 format (34h*****
print 9
9 format (34h* *)
print 9
print 9
print 6
print 11
11 format (5h )
go to 12
13 continue
j=0
3 continue
if(j.eq.6) go to 7
j=j+1
read 4,who1,who2,who3,who4
4 format (4a10)
if(who1.eq.4hquit) go to 300
name1(j)=who1
name2(j)=who2
name3(j)=who3
name4(j)=who4
go to 3
7 continue
i=0
8 continue
i=i+1
print 5,name1(1),name2(1),name3(1),name4(1)
print 5,name1(2),name2(2),name3(2),name4(2)
print 5,name1(3),name2(3),name3(3),name4(3)
print 5,name1(4),name2(4),name3(4),name4(4)
print 5,name1(5),name2(5),name3(5),name4(5)
print 5,name1(6),name2(6),name3(6),name4(6)
5 format (1x,4a10)
if(i.eq.num) go to 20
go to 8
20 i=0
j=0
go to 3
300 stop
end

0050 *** is the number of labels for each set

*** put input data cards here
*** takes 6 data cards to create one label set

```

```

(1) university of california
(2) santa cruz
(3) ucsc/hep
(4) attn: dennis smith
(5) division of natural sciences
(6) santa cruz, california 95064
quit

```

### (3) For One Data-Card Label

```

item,12,500,50000.acctno,users name
*b
run76.
link,x,l=out,pp=[lc=777777].
dispose,output=sl.
7-8-9
program label (input,output)
print 10
10 format (1h1)
print 2

```

[illegible]

. . . Dortha Hines, x6094

## RT-11 NEWS

The following are current news items for LBL RT-11 users. For more information on any of these items, contact Randy Michelson (x6411) unless otherwise noted. To get on the mailing list for LBL RT-11 information, please send your name, LBL mailcode, and phone number to Randy at **mailcode 46A**.

**ATTENTION!!** Please use my new LBL mailcode above and send me your new mailcode.

Please note that the LBL RT-11 mailing list is used sporadically to distribute RT-11 technical information informally within LBL; the information is not intended for distribution outside LBL or to associated campus groups.

- (1) RT-11 consulting hours are Monday through Friday, 1300 to 1700 in Bldg. 46A, Rm. 1150 (x6411).
- (2) RT-11 users who have not previously received the LBL COMPUTING NEWSLETTER (or its predecessor, the Computer Center Newsletter) should contact Maggie Morley, 50B/1245A (x5529) to obtain copies of Vol. 18, No. 8, No. 10, No. 11, & No. 12 (August, October, November, & December, 1981) for earlier RT-11 news items.
- (3) Reminder: RT-11 is a licensed software product. Licensing costs and legal issues should be discussed with Ken Wiley, LBL Software Manager, Office of Computing Resources (x7083 or x6411). LBL policy explicitly forbids illegal copying of licensed software. See **Policy and Procedure Memos** Vol. VI, No. 49 and Vol. VII, No. 26.
- (4) Yet another note on the DSD automatic powerdown retrofit kit: (See RT-11 News item 5 in LBL Computing Newsletter, Nov. 1981, Vol. 18, No. 11 and RT-11 News item 4 in LBL Computing Newsletter, Dec. 1981, Vol. 18, No. 12.)

DSD Service Note GEN-5 lists the serial numbers of DSD 440 and DSD 480 drives which require a replacement power harness to work with the new powerdown option, part number 900382-01. If you are buying a powerdown option, call Randy first with the serial number of your drive! The replacement harness is free from DSD.

- (5) **BEFORE YOU BUY — CHECK HARDWARE FLEA MARKET!** LBL projects wanting to trade or exchange hardware (new or used) should contact Randy Michelson, LSI11/PDP11 flea market coordinator. Currently available:



2 x KD11-HD LSI11/2 CPU + 32kw memory  
 2 x KD11-HA LSI11/2 CPU + KEV11 EIS/FIS chip;  
 10 or more 3M RK05 cartridges used 10 hours or less  
 (will trade four RK05 cartridges for each RL02 cartridge; Nashua OK);  
 4 x KDF11-HF LSI11/23 CPU + 64kw memory + KEF11 FPU chip;  
 1 x DSD 440 floppy disk system.

- (6) DSD 440/480 users: if you have a relatively new drive, you may have to replace the PROM's on the controller card inside the drive chassis. This ECO applies to controller type 4840 (not 4440). If the 3 large 2716 PROM's 80078, 80079, and 80080 are not marked REV B, contact Randy to arrange for replacements. One symptom of the REV A PROM's is that RT-11 will hang up if you try to read from a drive without a disk installed but with the door closed. This should instead type an error message after retrying a few times.
- (7) **WARNING!** BORER 1533A CAMAC crate controllers on LSI11 CPU's (via Q-BUS to UNIBUS converters) will execute undesired "invisible" READ cycles when executing CONTROL functions. This is because of a hardware incompatibility between the LSI11 and the BORER 1533A (which was designed for the UNIBUS, not the Q-BUS) related to the 1533A's "NO-READ" bit. LSI11/23 CPU's do NOT exhibit this problem.
- (8) **WARNING!!** PDP11 users with BORER 1533A CAMAC controllers who use Pam Wiedenbeck's CAMAC routines (or LBL BASIC) must explicitly set bit 11 of the CSR (the "NO-READ" bit) to prevent extraneous READ cycles from WRITE or CONTROL functions. (This problem can also be fixed permanently by patching the CAMAC routines.)
- (9) Information from 19 November 1981 LLL Microcomputer User Group Meeting:
  - A. DEC has unbundled the pricing of the LSI11/23 CPU from memory. LLL price for a CPU (including MMU) without any memory will be \$1329.; LLL Stores will stock the CPU-only under the SAME stock number currently used for the CPU + 64KW memory (5975-65962). The existing stock of 25 units will be issued at the old price of \$2846.; the new price will go into effect thereafter (possibly with the usual averaging formula: CURRENT PRICE = AVERAGE PRICE for last THREE orders).
  - B. LLL CAMAC support is expanding. The SDE group is setting up a clearing house for LLL-designed hardware and software. Instrument loan may be getting some loan modules for user evaluation (short term!). SCUL will have copies of the DOE standard CAMAC subroutines, as well as some test software (in PASCAL and FORTH) written by Alan Saroyan, and manufacturer's software for Kinetic Systems and Standard Engineering Corp. crate controllers. LLL stock has added several CAMAC modules, including Kinetic Systems Dataway Display, Dataway Display Control, and rigid extender, and Standard Engineering Corp. flexible extender. LLL plans to hold CAMAC user meetings about once every three months.
  - C. LLL is investigating possibilities for having a hardware flea market similar to LBL's.
  - D. There is a problem with the LLL 8K EPROM card design which can cause bus timeout errors. If you use this card, call Gary Berry, 181-3-0602, for a description of the problem and the three-wire change required to correct it.
  - E. If an LSI11 executes a three-word instruction whose SOURCE operand causes a bus timeout, the CPU traps through 4, but the stacked PC is left pointing to the third word of the instruction (instead of the first word of the next instruction). This caused a problem for a user writing a PASCAL routine to map the existing addresses. (When his interrupt-service routine executed an RTI, the CPU executed the destination operand as an instruction!)
  - F. The newly announced low-end LSI11 single-board computer ("FALCON") is NOT a replacement for program-development machines with RT-11. It is suitable for dedicated controller applications. It requires a large (XM monitor + at least 64KW) development machine for compiling and debugging the "MICROPOWER PASCAL" language. The "FALCON" does NOT support EIS/FIS instructions, but does have limited on-board memory plus serial and parallel interfaces. It also has a standard Q-bus connection.
  - G. Professor Walraven at UC Davis benchmarked the SKY COMPUTER array processor on a Simpson's rule integration. It was 12.9 times faster than an LSI-11/2 (incline FIS code), and 16.6 times faster than an LSI11/23 (threaded FPU code). (Randy has a copy of the test machines and results). See RT-11 News Item No. 8H in LBL Computing Newsletter, Dec. 1981, Vol. 18, No. 12.
- (10) The RT-11 user committee is still seeking volunteers from each division. Contact Frank Robben, Chairperson, Trailer 29C, (x4420).
- (11) An RT-11 V4.0 video tape course from LLL is available in Bldg. 41. The course consists of ten one-hour lessons, and is intended for inexperienced users. Keys must be signed out from Randy Michelson (x6411) or Joe Katz (x5636). This course was obtained courtesy of Mike I. Green and Joe Katz.
- (12) RT-11 users interested in periodic informal lunch gatherings to discuss each other's systems, and to exchange advice and solutions to problems should contact Mike Green, (x4607). The meetings are generally scheduled for the second and fourth Thursdays of each month at noon.

- (13) RT-11 users who become members of DECUS can sign up to receive copies of the RT-11 Special Interest Group newsletter (the Minitasker) and the LSI11 SIG newsletter. For an application, write directly to

DECUS, US Chapter  
Membership Processing Group  
One Iron Way, MR2-3/E55,  
Marlboro, MA 01752

Membership is free, and is open to all users of DEC computers.

- (14) The AUTOPATCH C version of the RT-11 LINKER does not link OMSI PASCAL programs correctly (because the transfer address comes from a library rather than the main program). A patch in the November 1981 RT-11 Software Dispatch corrects this problem.
- (15) By the time this is published, AUTOPATCH D should have arrived. Licensed RT-11 users should contact Randy to get in the queue for distribution, and should contact Ken Wiley (x7083) about obtaining the required update licenses.
- (16) DEC has announced new releases of the Scientific Subroutines and Laboratory Subroutines packages (SSP V1.3 and LSP V1.2). LBL has not yet received its update copies, but should soon. Licensed SSP and LSP users should contact Randy to get in the queue for required update licenses.
- (17) Because of budget cuts, Randy Michelson could not attend the DECUS FALL SYMPOSIUM. If anyone at LBL attended RT-11 or LSI-11 sessions, please contact Randy to pass on what you have learned!
- (18) Al Zalkin, (x5762) requests that anyone who has successfully used XM virtual jobs contact him.
- (19) DEC has announced a new release of MU BASIC, V2.1. LBL RT-11 support is not presently licensed for MU BASIC, so any licensed users at LBL will have to obtain their upgrade licenses themselves. If anyone at LBL is using MU BASIC, please contact Randy for information about the new release.

. . . Randy Michelson, x6411

#### VAX CLASS IN JANUARY/FEBRUARY

Another VAX user class will be given in late January and early February in the NRCC Conference Room, Bldg. 50D, Rm. 116. There will be four two-hour sessions.

|           |             |                    |
|-----------|-------------|--------------------|
| Tuesday,  | January 26, | from 10 AM to noon |
| Thursday, | January 28, | "                  |
| Tuesday,  | February 2, | "                  |
| Thursday, | February 4, | "                  |

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

. . . Uzi Arkadir, x5194

#### Computer Center Statistics

| SYSTEM PERFORMANCE IN NOVEMBER | 7600   | 6600   | 6400   | UNIX1  | UNIX3  | VMS1    | VMS2    | PHYS   |
|--------------------------------|--------|--------|--------|--------|--------|---------|---------|--------|
| System Availability            | 95.14% | 97.56% | 96.36% | 96.98% | 92.37% | 100.00% | 100.00% | 99.03% |
| Median Service Interval (hrs)  | 19.22  | 48.41  | 48.58  | 74.87  | 22.00  | 720.00  | 720.00  | 356.50 |

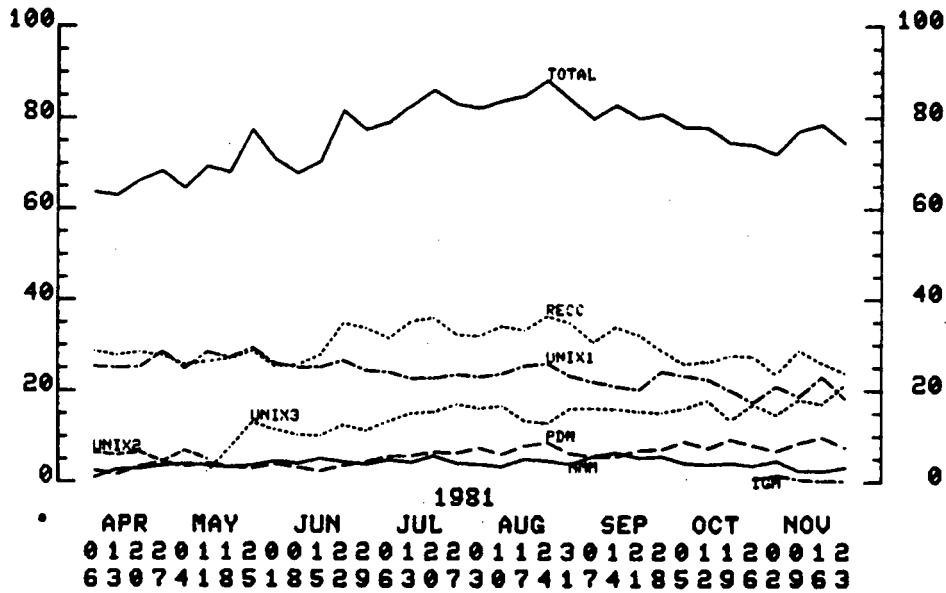
Jobs Processed: 41,204 on 7600; 21,617 on 6000's; 62,821 total

| 7600 TURNAROUND TIME        | 20 min | 2 hrs | 4 hrs |
|-----------------------------|--------|-------|-------|
| % of RUSH jobs returned     | 90.81  | 98.75 | 99.67 |
| % of ALL jobs returned      | 83.25  | 94.33 | 97.39 |
| % returned, CU limit = 100  | 78.29  | 90.79 | 91.45 |
| % returned, CU limit = 500  | 64.20  | 83.33 | 96.30 |
| % returned, CU limit > 1000 | 29.78  | 59.49 | 74.41 |

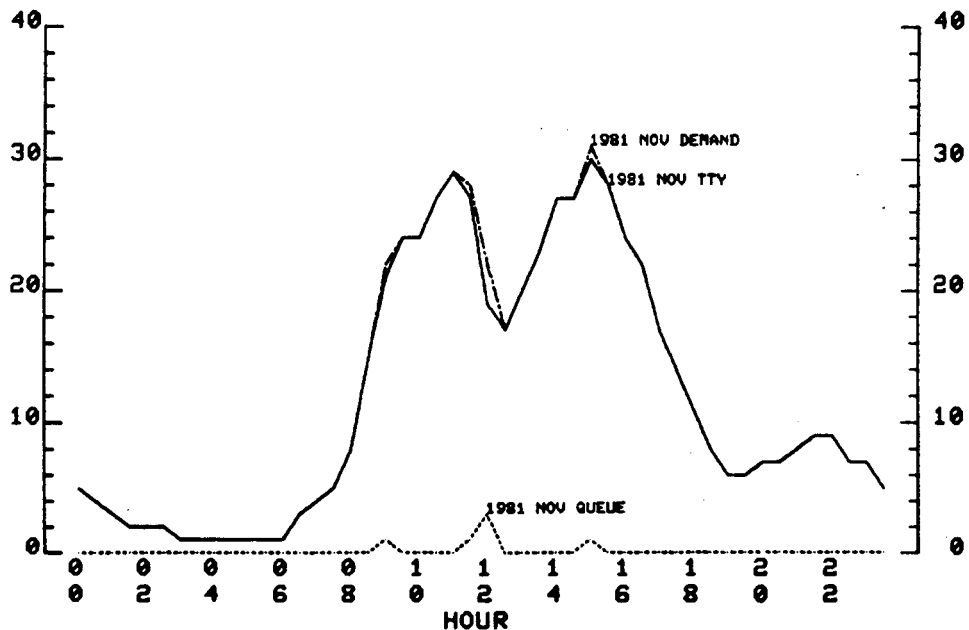
## INTERACTIVE STATISTICS

LBL COMPUTER CENTER  
PERFORMANCE MEASURES

## INTERACTIVE TERMINAL ACTIVITY

AVERAGE NUMBER OF TERMINALS CONNECTED  
SAMPLED AT HOURLY INTERVALS, PRIME USE PERIODS, WORKDAYSINTERACTIVE CONNECTIONS AND UNSATISFIED DEMAND  
6600 AND 6400 COMPUTERS

## NOVEMBER 1981 WORKDAYS



Computer Center Library  
Bldg. 50B, Rm. 1245A  
Lawrence Berkeley Laboratory  
One Cyclotron Road  
Berkeley, CA 94720