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Volume 23, Number 7
July, 1986

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PUB-429 7-86/1400

Newsletter Closing Date is Wednesday, July 16, 1986 . . . and no later.

Address all communications for the Newsletter to login **news** on UX4.

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

"Nothing fixes a thing so
intensely in the memory as
the wish to forget it."

Michel de Montaigne - (1533-1592)

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NAMES & NUMBERS TO KNOW

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

COMPUTING DIVISION

Head: Leroy Kerth (LTKerth)7474 50B - 2232

OFFICE OF COMPUTING RESOURCES

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

Ethernet Manager: Sig Rogers (SGRogers).....6713 50B - 2258G

ADVANCED DEVELOPMENT PROJECTS

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

Workstation Group

Group Leader: Richard LaPierre (RLLaPierre)....4692.....46A - 110

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Head: Marv Atchley (FMatchley).....5455 50B - 2245

Asst.Head: Sandy Merola (AXMerola)4389 50B - 2239B

Central Office5871,2 50B - 2239

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Applications Group

Head: Dennis Lawrence (DJLawrence).....6019 50F - 104

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

Software Tools: JASmith@LBL

DEVELCON

DEVELCON Access Names

[VAX 8600's (GENERIC)CSA]

VAX 8600 (VMS) CSA1

VAX 8600 (VMS) CSA2

VAX 8650 (VMS) CSA3

VAX 8600 (VMS) CSA4

VAX 8600 (VMS) CSA5

VAX 11/ 780 (UNIX4)UX4

VAX 11/ 750 (UNIX5)UX5

VAX 11/ 750 (UNIX6)UX6

VAX 11/ 780 (UNIX7)UX7

Dial-up Access Numbers

All Machines - 300 BPS 486-4959

All Machines - 1200 BPS 486-4979

All Machines - 2400 BPS 486-4969

Local TYMNET Access Numbers

Oakland 430-2900 Vallejo 707-644-1192

Walnut Creek 938-9550 Concord 685-6003

Pleasanton 462-8900 Fremont 490-7366

San Francisco 974-1300 Antioch 754-8222

Santa Clara 408-986-0646 Palo Alto 415-366-1092

COMPUTER CLASS SCHEDULE

Jerry Borges

The following computer classes are to be offered by the Computing Division. There is no charge for these classes; to enroll, obtain your supervisor's approval and then contact Pat Bean (x7008). If you have questions about what's being offered, or suggestions for other computer-oriented topics, contact Jerry Borges (x5568).

DATE	TIME	DESCRIPTION	INSTRUCTOR
July 14, 15, 17	9 AM - NOON	Introduction to VAX/VMS	Rosemary Allen
Jul 22, 24, 29, 31	9 AM - NOON	Introduction to VAX/UNIX	Dave Cleveland
Aug 12, 14, 19, 21	9 AM - 11:30 AM	C Programming	Marty Gelbaum
Sept 8, 9, 11	9 AM - NOON	Introduction to VAX/VMS	Rosemary Allen
Oct 21, 23, 28, 30	9 AM - NOON	Introduction to VAX/UNIX	Dave Cleveland
Nov 3	10 AM - NOON	Introduction to SPSS	Elon Close

L^AT_EX COURSE

Jeanne Miller

It has been proposed that a five-day comprehensive course in L^AT_EX be taught at the Laboratory beginning at the end of August. The class would be taught at LBL by an instructor from the T_EX Users Group in Providence, RI.

The course would probably be given in two segments, three days the first week and two days the following week. Cost per student would be about \$300.

If you would be interested in attending such a class, please contact me (x5074), or Jerry Borges (x5568).

SMARTSTAR ONLY ON CSA1

Jerry Borges

Starting July 7, the SMARTSTAR suite of text and data management tools (SMARTDESIGN, SMARTCALL, and SMARTQUERY) will be available from CSA1 only.

This is a consequence of potential increased software licensing costs and relatively minor use of the utilities.

HELLO UNIX 8 - GOOD-BYE UNIX 7

Marv Atchley

We have installed an IS (Integrated Solutions) Model V-24 system, featuring a Motorola 68020 CPU, as UNIX 8 ("UX8"). It has been up and available for tryout/evaluation since June 15. Our benchmarks have shown that it is considerably faster than the VAX 11/780's (UX4 & UX7) -- and we will recharge it at the same rates, so programs that are CPU-intensive will cost less to run.

Concurrent with this, we plan to turn off UX7 on August 1. Users of UX7 should plan to move to other machines. (To open an account on UX8, call Pat Bean, x7008).

Here's some background. The present cost of operating our UNIX machines continues to exceed income. Although the problem has many facets, the most significant appears to be the high cost of hardware maintenance on the VAX 11/780 systems.

We are required by DOE to recharge computer users the costs of operating these systems, and the high cost/performance results in a \$50 per hour non-prime CPU rate. When one compares this rate to the \$25 per hour stand-by CPU rates for 8600 time on the CSA VMS cluster, the problem becomes obvious. This high cost, plus the lack of a modern FORTRAN compiler on our present systems, results in very low utilization (less than 10%) of the UNIX CPUs during off-hours.

Our "capacity model" for UNIX shows that during prime time, we are using roughly half of our total current interactive capacity, and one third of the CPU. This situation has resulted in normally quick access and good response time, but the excess hardware capacity is costing more than users are willing to pay.

A TPEG (Technical Planning and Evaluation Group) sub-committee is currently studying this situation, and will present a report and recommendations at an open meeting, probably in July.

Now, the IS CPU is more than twice as powerful as the 11/780, but information on how this system will perform in a multi-user environment such as ours is speculative at present. Hardware maintenance costs are projected to be quite low - perhaps 10% of a 11/780. The operating system provided by IS is BSD 4.2, and local software is being added. Most users will not notice any differences between IS and our present systems.

This present change is the first step in our plan to provide good UNIX service at an acceptable cost.

COMPUTING SERVICES VMS DISK BACKUP POLICY

Rosemary Allen

There are three categories of backup for disks in the CSA cluster --

- daily,
- weekly,
- never.

Additionally, two types of backup are performed --

- incremental,
- full volume/archival.

All **incremental** backups are created on disk. An incremental saves files that have been created or modified since the last full backup. Once an incremental is successfully completed, the previous incremental is deleted from the disk.

Full volume/archival backups are created on tape and will contain copies of all files from an entire disk volume. Following an archival backup to tape, the backup date is recorded on each file. To check this date, use the "directory/date=backup" command. Archival backup tapes are kept indefinitely and can be used to restore individual files.

The procedure for backups differs with each category of disk and is structured to be able to restore an entire disk volume of data following a hardware failure. A

restoration is accomplished by using the last full/archival tape backup and adding the incremental disk backup. While the backup procedures will always restore a crashed disk, it will not always provide for the recovery of individual user deleted files. An example: On a **daily** category disk a file created yesterday resides on the incremental backup from last night. If the file is deleted today, it must be recovered before the incremental backup is done tonight since that incremental backup will not contain the file.

A disk in the **daily** category has an automatic incremental backup done each night. A disk in the **weekly** category has an incremental backup done once per week. A full volume backup is triggered to be done based upon the size of the incremental saveset. Once per month, a full volume backup tape set is stored in the permanent archival storage area.

A disk in the **never** category is not included in any Computing Services backup scheme. It is the responsibility of the user(s) of the disk to perform backup as necessary. In the case of disk failure, the disk will be restored with the master file directory entry and the disk quota for each user assigned to the volume. No user data will be restored.

About UNIX system backup procedures: There is -- and will remain -- only the **daily** category of disk backup available on UNIX disks, but the conversion of the physical mechanism of UNIX backups into the automated mechanism mentioned above is currently in progress. The daily UNIX incremental tape backups that are now done will no longer be performed. This will adversely affect the ability to recover user-deleted files on UNIX systems since only the latest daily incremental backup will be kept on disk.

Note: UNIX, in contrast to VMS, does **not** automatically maintain multiple copies of user files. Users are encouraged to keep copies of important files that change often (more than once a week).

WORKSTATION NEWS

[23.7.1].....

• WORKSTATION GROUP ELECTRONIC MAIL

Workstation Group members can now be reached from the cluster or the Computing Division's UNIX machines by sending mail to **lbl::WKSG** or **WKSG@lbl.arpa**. We hope this alternative (to the telephone) will be of assistance to users who have problems or would like to forward helpful hints.

[23.7.2].....

• SOME BASIC IMPROVEMENTS

(Correspondent Jack Zelter sends us more good information).

PC-World finally published something of great value for those who use BASIC. The June issue, page 356, describes a clever 2-byte program that will:

- Recover your file if you are in the BASIC editor and have accidentally typed "new" (and forgot to SAVE it previously).
- Unprotect a BASIC program previously saved with the "p" option. This means you can list and edit the program.

The author explains that he developed it because he needed to recover BASIC programs he had saved in protected mode after he lost the unprotected version. IBM recommends saving both the unprotected source and protected programs, but there is no indication in the filename that a program is or is not protected. As the number of programs grows, so does the problem of tracking which are protected and which are not.

The program is very easy to create and use. For those without easy access to PC-World, here is how to do it:

>From the DOS prompt, type "debug"<CR>. You will see the "-" prompt. Continue as follows:

Action	Explanation
-e 100 ff 1a <CR>	(write hex ff, 1a at 100, 101)
-n unprot.bas <CR>	(provide filename to debug)
-r cx <CR>	(request change in cx register)
:2 <CR>	(load cx register with value of 2)
-w <CR>	(write data to file)
Writing 0002 bytes	(message from debug)
-q <CR>	(exit debug)

This will create the program "unprot.bas". To use the program to recover a program in the BASIC editor after you've typed "new", just load the **unprot** program with 'load "unprot"'. This program is so short it will not overwrite the erased program already in memory, but will simply set the proper flag so that

BASIC will think the original program was not erased. You can now type "list" and see the recovered program and continue.

To unprotect a protected program, first load the protected program into the BASIC editor, then load "unprot" afterwards. This resets the flag, and you can now list or save the program in an unprotected mode.

So far, I've only tested this procedure in DOS 2.1, but since the BASIC programs have the same format on all DOS versions I would expect it to work on all of them. I will test it on 3.1 at the first opportunity.

If someone wants this program and doesn't wish to fool around with the debugger, I'll be happy to provide it to him. (Contact Jack at x5377).

[23.7.3].....

• FREE LOTUS 1-2-3 TIPS

LOTUS Version 1A Users: Here are some tips for you from MACROPAC INTERNATIONAL of Cupertino. Those of you who use LOTUS Version 2 will find that some, but not all, of these may apply.

(1) SINGLE-CELL RECALCULATION

Do you have a large spreadsheet, set for manual recalculation, that takes forever to calculate using <F9 CALC>? If so, you may be interested in a little trick to recalculate a single cell. Simply press

<F2 EDIT> <CR>

at the cell you want to calculate.

NOTE, however, that this only works in cases where the cell is not dependent on serial calculations.

How does it work? Hitting <F2 EDIT> <CR> is like entering the cell's formula for the first time. So in a sense, you're not RE-calculating, but calculating that cell as if for the first time.

For a handy macro to recalculate MORE than one cell in a spreadsheet without having to CALC the entire spreadsheet, see "101 MACROS FOR LOTUS 1-2-3 (tm)"¹

(2) CHANGING A FORMULA TO A VALUE

Perhaps you've had this situation: you have a cell with a formula in it. It gives you the value you want, but now you want to "permatize" the value so that it's not subject to later changes of the spreadsheet.

It's simple. Just put your cursor on the cell in question, and press

¹ \$49.95 from MACROPAC INTERNATIONAL, 19855 Stevens Creek Blvd., Suite 168, Cupertino, CA 95014.

<F2 EDIT> <F9 CALC> <CR>

The cell will change from a formula to just a straight value.

This tip can also be used to change the @today cell you may have entered in your spreadsheet (and which will update itself automatically tomorrow, whether you want it to or not) to "permatize" it into an unchanging record of today's date on the spreadsheet.

Note: In case you want to change all the formulas in a range to values, you may be interested in a macro designed to do just that. See "101 MACROS FOR LOTUS 1-2-3 (tm)".

(3) GOTO ANOTHER PART OF THE SPREADSHEET -- AND RETURN

This has happened to everyone using an electronic spreadsheet: you want to "visit" another part of the spreadsheet, just to look at a number or a formula. After several pagedowns, tabrights, down down right right down, you're finally there.

But now you have to go through the same exercise -- in reverse -- to return to your original starting point.

Take heart, there is a solution. From your original starting point, use your "<F5 GOTO>" key. The panel will prompt you with the message -

ENTER ADDRESS TO GO TO

at which time you simply use your cursor to move to your destination. Once you're there and you've seen what you want to see, just press

<ESCAPE>

You will be transported immediately back to your starting point.

If you've decided you want to STAY at the visited cell, simply press <CR> instead of <ESCAPE> and the <F5 GOTO> will leave you at your destination.

And now that you know this trick, you may be interested in a macro that "remembers" your last <F5 GOTO> destination, so that you can switch back and forth between the two locations at the touch of a key. See "101 MACROS FOR LOTUS 1-2-3 (tm)".

(4) MOVING PAST LOCKED-IN TITLES -- WITHOUT USING TITLES-CLEAR

Another little-known feature of the <F5 GOTO> key is its ability to move past locked-in titles.

Suppose you're entering data on your newly-designed spreadsheet. You have your titles all nicely locked in, and you are pages and pages in to your data entry. Suddenly you realize that one of your title blocks is misspelled, or perhaps worded incorrectly. If you clear your titles, it's very time-consuming to move to the

"corner" cell, establish the titles again, and return to where you left off.

The solution is simply to use your <F5 GOTO> key. This key will let "visit" a cell above your titles just to look at it. You can also press <F5 GOTO>, move above the titles, press <RETURN>, to remain there, make the required changes, and finally return to where you left off by using the <END> <HOME> keys.

Speaking of <END> <HOME> -- which takes you to the lower-righthand corner of your spreadsheet -- you may want to check out a macro which takes you to the lower-LEFTHAND corner. See "101 MACROS FOR LOTUS 1-2-3 (tm)".

(5) PUT A <<BEEP>> INTO YOUR CALC BUTTON

You have a large spreadsheet, which takes forever to CALC. And what bothers you most is the fact that you have to just SIT there, staring at an annoying WAIT WAIT WAIT message.

How about putting a <<BEEP>> into your F9 CALC button? Simply press

F9 CALC

then press

/bbb <ESCAPE>.

As soon as the calculation is complete, the computer reads the next keystrokes, which will (1) call up the worksheet menu, and (2) select the choice starting with letter B. But since there is no choice starting with the letter B, the computer beeps at you, which is your cue that the calculation is over.

This little trick can be used after the print command, the file save command, and is especially useful for putting beeps in your macros. See "101 MACROS FOR LOTUS 1-2-3 (tm)".

[23.7.4].....

• WREN II - NEW HALF-HEIGHT DISK DRIVE FROM CDC

We have been testing a new half-height 50Mb (40Mb when formatted) disk drive from CDC. The new drive, called the "WREN II", is about twice as fast as the 30Mb "WREN I" drives that we have been using. This may be a plus depending on your particular application. The WREN II is available for less than \$900.

To get the full potential out of the drive, one must also purchase a device driver that overcomes the operating system's (PC-DOS's) inability to deal with a drive that is over 32Mb.

Contact the Workstation Lab (x6858) for more information.

[23.7.5].....

● HACKED & TROJAN HORSE PROGRAMS:

What follows, from ARPA.NEWS INFO-IBMP, is a comparatively recent list of programs that can penetrate and (often) destroy computer systems.

Name	Category	Notes
ARC.COM	HACKED	Someone keeps running SPACEMAKER or a similar EXE squeezer on SEA, Inc.'s ARC archive program, then uploading the resulting COM file to Bulletin Board Services without the author's permission. Not kosher, whoever you are. SEA won't support the COM version -- this is an unauthorized modification.
ARC513.EXE	*TROJAN*	This hacked version of ARC appears normal, so beware! It will write over Track 0 of your [hard] disk upon usage, destroying the disk.
BALKTALK	*TROJAN*	This program used to be a good Public Domain utility, but some one changed it to be TROJAN. Now this program will write/destroy sectors on your [hard] disk drive. Use this with caution if you acquire it, because it's more than likely that you got a bad copy.
DISKSCAN.EXE	*TROJAN*	This was a PC-MAGAZINE program to scan a (hard) disk for bad sectors, but then a joker edited it to WRITE bad sectors. Also look for this under other names such as SCANBAD.EXE and BADDISK.EXE...
DOSKNOWS.EXE	*TROJAN*	This one is still being tracked down -- apparently someone wrote a File Allocation Table (FAT) killer and renamed it DOSKNOWS.EXE, so it would be confused with the real, harmless DOSKNOWS system-status utility. All that's known for sure is that the REAL DOSKNOWS.EXE is 5376 bytes long. If you see something called DOSKNOWS that isn't close to that size, sound the alarm. More info on this one is welcomed -- a bagged specimen would be especially welcome.
EGABTR	*TROJAN*	BEWARE! Description says something like "improve your EGA display," but when run it deletes everything in sight and prints "Arf! Arf! Got you!"
FILER.EXE	*TROJAN*	Labelled "Great new filing system" - wiped out 20 Megabyte hard disk. We're looking for confirmation on this.
LIST60	HACKED	Vuern Buerger's LIST 5.1, patched to read 6.0.
QMDM110.ARC	HACKED	ONLY versions 1.10 and 1.10A! They are copies of 1.09, hacked to read 1.10. There have been rumors of a worm in 1.10, but there hasn't been any evidence of it. Other versions are OK.
QMDM110A.ARC	HACKED	
QUIKRBBS.COM	*TROJAN*	This Trojan horse advertises that it will load RBBS-PC's message file into memory 2 times faster than normal. What it really does is copy RBBS-PC.DEF into an ASCII file named HISCORES.DAT...
SECRET.BAS	*TROJAN*	BEWARE!! This may be posted with a note saying it doesn't seem to work, and would someone please try it; when you do, it formats your disks.
STRIPES.EXE	*TROJAN*	BEWARE SYSOPS!! This one draws an American flag (nice touch), but meanwhile it's busy copying your RBBS-PC.DEF to another file (STRIPES.BQS) so Bozo can log in later, download STRIPES.BQS, and steal all your passwords. Nice, huh!
VDIR.COM	*TROJAN*	This is a disk killer that Jerry Pournelle wrote about in BYTE Magazine.

FYI: A HACKED Program is any program that someone got into and made changes. It is not necessarily dangerous. A TROJAN HORSE is a hacked program that gives the impression of being beneficial or benign, but, in reality, it does bad things to your disk when you run it. If you have any questions on this topic or know of other programs to beware of, please contact Workstation member Buck Koonce (x5739) or Computer Protection Program Manager D. F. Stevens (x7344).

[23.7.6].....

• A NEW WORKSTATION FROM XEROX

The Workstation Group has a new unit from XEROX (Model 6085) that is both a Star-like device and an IBM-PC compatible. This device has a large 19-inch bit-mapped monitor that has to be seen to be fully appreciated. This ethernet-compatible workstation is remarkable in its ability to prepare complicated text with graphics documents. Output can be routed to high-quality XEROX network laser printers or to dot matrix printers. The 6085 (which costs slightly more than a fully-configured IBM PC/AT), uses the Phoenix ROM to emulate a PC and runs all the major software. The Workstation Group will provide demonstrations to Laboratory personnel. To arrange for a demo, contact Buck Koonce (x5739) or Bill Brown (x6585).

[23.7.7].....

• LASERJET PRINTERS AND UNIX

(from Garth Burns of Applied Sciences Division)

A driver for Hewlett-Packard's LaserJet and LaserJet Plus printers -- using the (Math Elite) J-Cartridge only -- is up and running on UX7. A version for the HP LaserJet has been in use by the Technical Information Department thanks to Dick Bailey and consultant Tom Strong. A newer version for the H-P LaserJet Plus with some refinements is now available to users (thanks to ASD for that ... Ed). The full range of math symbols, superscripts and subscripts is available. The new driver has been tested for two months and bugs have been corrected.

For a copy of the driver and additional information, contact Stan Combs (x6735).

QUOTES ON THE IMAGEN

Bob Rendler

The *imagen* (when you invoke *itroff*) prints only right-hand double quotes (") instead of a neutral double quote, as you'd expect. A terminal keyboard has just the one double-quote key.

What's the story?

It is conventional when using the typesetter to use pairs of grave (`) and acute (') accents to generate double quotes, rather than the keyboard double quote character ("). (The former looks better on typeset output). In order to make quotes compatible between the typesetter and terminals, special macros have been written to stand for the left and right double quotes.

• USING -me

If you are using the *-me* macro package, you use the sequence *(lq and *(rq for the left and right double quote respectively.

e.g. *(lqIt's a far, far better thing ... *(rq

• USING -ms

If you are using the *-ms* macro package, use the sequence *Q and *U for the left and right double quote respectively.

e.g. *QIt's a far, far better thing ... *U

The above works with either *itroff* (old *troff*) or *iroff* (new *troff*) as the sequences are macro calls and not *troff* special characters.

• USING iroff

Under *iroff* (device-independent-*troff*) the keyboard double-quote key is a neutral double-quote character and prints as such.

e.g. "It's a far, far better thing ..."

• USING troff SPECIAL CHARACTERS

Along with *iroff* came defined *troff* special characters for dealing with left and right double quotes. The special characters \ (LD and \ (RD print as the left and right double quote respectively.

e.g. \ (LDIt's a far, far better thing ... \ (RD

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