UNIX News
Volume 2, Number 10, May–June 1977

UNIX News, volume 2, number 5, published in June 1977 by Professor Melvin Ferentz of Brooklyn College of CUNY, was the last issue of the newsletter under that title. In July 1977, the first issue of *;login: The UNIX Newsletter,* appeared. These excerpts from *UNIX News* have been reproduced as they appeared in the original, including any typographic errors. *Note: We have not included the mailing list and other addresses and telephone numbers that appeared in the original issue.*

Third Software Distribution

The Third Software Distribution is now being prepared for release. We expect to start mailing it out in late July. The Software Distribution Center has been moved from Chicago Circle to the City University of New York. We all owe Mike O'Brien a debt of gratitude for the work he as done in setting up the software distribution service. Mike is leaving Chicago for the West Coast soon. He prepared the Third Distribution and has passed on to me (Mel Ferentz) all of the tapes people sent him as well as the entire correspondence file.

The distributions will be prepared on the City University's 370/168, which we view as a suitable back-end for a UNIX system. Complete details on the distribution will be continued in the next Unix News. Those of you who have already sent tapes to Chicago will receive your tapes mailed from New York. No further tapes should be mailed to Chicago. The CUNY Computer Center sells tapes over-the-counter and while we will continue to write onto your tape if you send one, the preferred medium for us is to write your distribution on a virgin 2400 foot tape. An order form will be included in the next newsletter.

Urbana Meeting

The Urbana Meeting was attended by over 150 people and was a great success. The attendance list will be published as soon as we get a tape from Steve Holmgren to replace the one he send us that was folded and spindled by our favorite postal service.

We have been promised minutes of the meeting which will also appear as soon as received.

Children's Museum Information System

The Children's Museum has announced the availability of its "Information System—Version 3." A four page product description was distributed at the Urbana Meeting. For a copy of the description, more details, or licensing information, contact Bill Mayhew.

Future Software Releases

At the Urbana Meeting it was said (announced is too strong a verb) that Bell is preparing Programmer's Work Bench for release this summer with Version 7 of Unix soon thereafter. Mini-Unix has been released and LSI-Unix and Mert will probably follow along at some later date.

Vrije Universiteit, Amsterdam
From E.G. Keizer

We are using UNIX on our PDP 11/45 for almost a year now and are very enthusiastic about it. Our system is somewhat over-loaded but we hope that the disk drives we ordered will help to solve the problem.

Lately we found a "bug" in the UNIX kernel. One of our users was having troubles with his program that was switching back and forth between single and double precision Floating Point node. We discovered that the F.P. registers are saved in the node the F.P. processor has at the moment the program is stopped. This means that the low order 32 bits of the users double precision registers were not saved whenever his program was stopped in single mode. By adding setd instructions in m45.s just before the lines where the F.P. registers are moved to and from _u, we solved the problem. Consequently the F.P. registers are always stored in double mode. The programs db and cdb will have to be changed to reflect the new situation.

A few months ago somebody noticed that the times stated by the time command were somewhat off. Time expects that the system command times returns process and system times in 60ths of seconds. But since we have a 50 Hz power supply, times returned those times in 50ths of seconds. He changed time.s according to our situation.

We had some problems with the pipe mechanism. When several processes were writing simultaneously on one pipe their messages got intermixed if the pipe pointers reached the end of the pipe buffer.

In case somebody is interested in a driver for the old DEC DM11 multiplexer, we would be glad to send a copy of our driver.

Katholieke Universiteit Nijmegen
From George Rolf

If no one else wrote you about the matter before, here is our fix to the ttyn(III) problem mentioned in the February issue of UNIX News. I found the bug about 3 months ago.

```
After the line at reads:    mov    buf+2,(sp)
I inserted                  mov    buf,r1
                            sys    stat;dev;buf
                            bes    er1
                            cmp    buf,r1
                            bne    cr1
```

A similar change has to be made to nroff(I), file: s7/nroff1.s. This file contains a slightly different version of ttyn. The following commands may be considered candidates for recompilation: em, goto, pr, rn, login, mail, mesg, ps, who.

Problems with creat system call on Unix version 6
From George Goble, Purdue University

We have discovered two problems with the "creat" system call. The following sequence of commands will cause "orphaned" files (files that are not in any directory) to be created:

```
chdir /tmp
mkdir a
chdir a
rmdir /tmp/a
ls -l / >orphan
chdir /
```

The rmdir causes the link count for the /tmp/a inode to goto zero, however the inode is not deallocated because it is the shell's current directory. As this point one can create files in the current directory. One (except super user) cannot create directories in the current directory because mkdir does a stat on ".." which does not exist. Upon doing a chdir /, the reference count for the old current directory goes to 0, causing deallocation of its inode and stranding the newly created files.

The second problem occurs when the maknode call in creat() fails due to no inodes on the device. Namei leaves the last directory inode in the pathname locked because a return is executed after the maknode failure. The next process to reference the locked inode will go to sleep (and hang!) with PINOD (-90) priority.

The fix for the first problem consists of adding an error return if the current directory inode has a link count of zero. Below is a copy of the existing creat() in /usr/sys/ken/sys2.c and the revised one.

Existing creat() in /usr/sys/ken/sys2.c

```c
creat()
{
    register *ip;
    extern uchar;

    ip = namei (&uchar, 1) ;
    if(ip == NULL) {
        if(u.u_error)
            return;
        ip = maknode(u.u_arg[1]&07777&(~ISVTX) ) ;
        if = (ip==NULL)
            return;
        open1(ip, FWRITE, 2);
    } else
        open1(ip, FWRITE, 1);
}
```

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Modified create() in /usr/sys/ken/sys2.c

```
create()
{
    register *ip;
    extern uchar;

    ip = namei (&uchar, 1) ;
    if(ip == NULL) {
            if(u.u_error)
                    return;
            if((u.u_cdir->i_nlink == 0) && (fubyte(u.u_arg[0])!= '/')) {
                    u.u_error = ENOENT;
err:                iput(u.u_pdir); /* namei left parent dir locked */
                    return;
            }
            ip = maknode(u.u_arg[1]&07777&(~ISVTX) ) ;
            if (ip==NULL)
                    goto err;
            open1(ip, FWRITE, 2);
    } else
            open1(ip, FWRITE, 1);
}
```

University of Glasgow

From Alistair C. Kilgour

I am writing to let you know of the formation of a U.K. Unix Users Group. The first meeting took the form of a Colloquium at Glasgow University on Friday 27th May, attended by about 40 people. Short Talks were presented on aspects of the kernel including the scheduler and the buffer cache system, the structure of CAC "Network Unix", the features of the Carnegie Mellon INGRES relational database system, and some early experience with the Toronto graphics software. During the afternoon session the User Group was formally constituted. Two officials were elected, myself as chairman and Peter Gray of Aberdeen University as Secretary and Newsletter Editor. It was not felt necessary at the present time to elect any form of executive committee.

It was agreed that an attempt should be made to constitute the group as a Special Interest Group under the umbrella of DECUS U.K. We are seeking approval of this move both from Bell and from the DECUS Executive Board. DECUS have agreed to handle distribution of the U.K. Unix Newsletter, and will undertake to send it only to accredited Unix license-holders, so we don't foresee any problems with Bell. General information about meetings etc., will be published in the DECUS U.K. Newsletter, but all system-specific material will be restricted to the SIG publication.

On the question of languages the appearance in the U.K. of the Princeton RT11 FORTRAN implementation was generally welcomed, at least by the "engineering" interests. The availability (subject, of course, to having purchased appropriate DEC licenses) of a good FORTRAN which can be configured for the full range of hardware is bound to enhance the appeal of Unix in non-computer-science departments.

Software Standards

Concern was expressed on several points in the area of system standards, particularly in distributed software. Among the points raised were the following:

(i) User group standard software: since it is increasingly difficult for U.K. users to attend personally any of the U.S. meetings, it would be nice if the views of users outside the U.S. could be sought before a piece of software or a system mod. is adopted as a standard. In the case of the Yale Shell, we are all delighted with it, but future proposals could be more controversial.

(ii) Assumed hardware: wherever possible distributed software should be configured for a "standard" system, with instructions for modifications required for other hardware. Assumed conventions about pathnames, etc., should be made explicit.

(iii) Documentation: manual pages should be in 'nroff' form, using the standard 'tmac.naa' macro definitions, and have extension '1' or '6'. Other documentation should include any required nroff macro definitions.

(iv) System calls: the adoption of the 'terms' system call as a standard was suggested. The group from 56 to 63 should be reserved for locally added system calls, and no distributed software should make any assumptions about the system calls in this range.

Software Distribution

The meeting agreed that Glasgow University Computing Science Department should enter negotiations with a view to becoming a software distribution centre for the U.K. We have three exchangeable HK05 drives, and by the end of July should have an 800/1600 bpi magnetic tape drive. We will also act as a collection centre for software which U.K. users with to contribute to the U.S. distribution centre.

If any U.S. Unix addicts are visiting the U.K. this summer, please drop in and see us. (I'm sure that goes for all of the U.K. Unix sites).