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April 4 1977

Amsterdam, 25-Nov-76

Prof. Melvin Ferentz  
 Physics Department  
 Brooklyn College of CUNY  
 Brooklyn, N.Y. 11210,  
 U.S.A.

Dear Professor Ferentz,

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

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 mode. We discovered that the F.P. registers are saved in the mode the F.P. processor has at the moment the program is stored. This means that the low order 32 bits of the users double precision registers were not saved whenever his program was stored in single mode. By adding set instructions in m45.s just before the lines where the F.P. registers are moved to and from -u, we solved this 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 times 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.

Sincerely, *E.G. Keizer*

E.G. Keizer

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 De Boelelaan 1105  
 Kamer 4A-16  
 Amsterdam  
 The Netherlands

Prof. Melvin Ferentz  
 Brooklyn College of CUNY  
 Brooklyn, NY 11210  
 U.S.A.

Dear Professor Ferentz,

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 that reads: mov buf+2,(sp)

I inserted:  
 mov buf,r1  
 sys stat;dev;buf  
 bes er1  
 cmp buf,r1  
 bne er1

A similar change has to be made to nrcff(I), file: s7/nrcff.i.s. This file contains a slightly different version of ttyn. The following commands may be considered candidates for recompilation: em, Goto, pr, rm, login, mail, mesg, ps, who. I recompiled only the first four.

I have already informed Mr. Lucas.

Sincerely,

George Rolf

PURDUE UNIVERSITY  
 SCHOOL OF ELECTRICAL ENGINEERING  
 WEST LAFAYETTE, INDIANA 47907

April 9, 1977.

Professor Melvin Ferentz,  
 Physics Department,  
 Brooklyn College of CUNY,  
 Brooklyn, NY 11210.

Problems with creat system call on Unix version 6

Dear Professor Ferentz,

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 go to zero, however the inode is not deallocated because it is the shell's current directory. At 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 pathame 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

```
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;
    openl(ip, FWRITE, 2);
  } else
    openl(ip, FWRITE, 1);
}
```

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

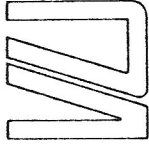
```
creat()
{
  register *ip;
  extern uchar;

  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;
    iput(u.u_pdir); /* namei left parent dir locked */
    return;
  }
  ip = maknode(u.u_arg[1], 07777 & ("ISVTX"));
  if (ip == NULL)
    goto err;
  openl(ip, FWRITE, 2);
} else
  openl(ip, FWRITE, 1);
}
```

Sincerely yours,

*George H. Goble*  
 George Goble

VRIJE UNIVERSITEIT



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Prof. Melvin Ferentz,  
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datum 31.05.77

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BNR INC.

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May 26, 1977

Professor Melvin Ferentz  
UNIX User's Group  
Brooklyn College of CUNY  
Brooklyn, NY 11210

Dear Professor Ferentz:

We are using a UNIX operating system on our PDP 11/70. I would like to know if there is a compiler available for CDSOL or RPG II.

Sincerely,

*Bernon Gottlieb*

Bernon Gottlieb  
Controller

BG:cp

Dear Mel,

I would like to announce the availability of a Pascal Compiler for UNIX. Under separate cover I have sent two cassettes to Mike O'Brien for incorporation in the next distribution. Both binaries and sources are included.

The compiler is a heavily modified derivative of the P compiler. It produces intermediate code which is then interpreted at run time. I estimate the execution speed of a Pascal program to be about a factor of 10 slower than a corresponding C program. On the other hand, object programs are very compact, about a factor of 3 - 4 smaller than the corresponding C program. The (1 part) compiler can compile itself in about 48K bytes of memory including the interpreter, the object code of the compiler, and all working storage. We are currently working on a new release in which the intermediate code can be (optionally) executed to assembly language. This option will provide for quicker execution, but large programs, e.g. the compiler itself, will not fit in the PDP-11's address space.

Yours truly,

*Andrew S. Tanenbaum*

Andrew S. Tanenbaum.



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THE UNIVERSITY,  
GLASGOW, G12 8QQ.

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EXT. 476/7458

10th June, 1977.

Professor Melvin Ferentz,  
UNIX News Editor,  
Brooklyn College,  
City University of New York,  
Brooklyn,  
NEW YORK 11210,  
USA.

Dear Professor Ferentz,

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 licence-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 modification 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.naz' 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 '6 to '63 should be reserved for locally added system calls, and no distributed software should make any assumptions about 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 PC5 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 wish to contribute to the U.S. distribution centre.

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

Best wishes.

*Alastair C. Kilgour*

Alastair C. Kilgour.



DEPARTMENT OF COMPUTER SCIENCE

UNIVERSITY OF ILLINOIS AT URBANA-CHAMPAIGN URBANA, ILLINOIS 61801, U.S.A.

April 20, 1977

Richard Miller  
University of Wollongong  
New South Wales  
Australia 2500

Dear Mr. Miller,

I just got the UNIX news today, and was greatly interested to learn of your work with UNIX on the 732. It so happens that we bought a 732 a year ago, running ST in background batch as a slave to an 11/35 UNIX, and have yet to obtain any real satisfaction from it. Without getting into too many details, I will say that our problems were bad enough that Interdata is letting us have MT for no charge (although they are taking their time in sending it).

I have been spending some spare time in the last few weeks making the second pass of the C compiler Generate 732 code. Unfortunately, I haven't the time to give an appropriate level of effort to this project, and I have only gotten about half done with it, and some of that done a bit sloppily. I wonder if there is some possibility of obtaining a copy of your 732 C compiler? Perhaps you would also be interested in corresponding or collaborating on the project as well. I am quite familiar with the kernel of UNIX and I might be able to provide some useful assistance in getting the full system up. I might also be able to help scrounge up source for some of the programs we need to change if they are to run on UNIX on the 732 (I would have to dig up the FORTRAN compiler for instance, as we use the 732 for number crunching).

Please let me know how you feel about this as I am quite anxious to do something to improve the usefulness of our machine. If it is possible to obtain a copy of your C compiler, please let me know what I would have to send to effect the transfer.

Sincerely,

Alfred D. Whaley

*Cc to Mo/ Ferentz*



STATE OF WISCONSIN

DEPARTMENT OF ADMINISTRATION  
One West Wilson Street • Madison, Wisconsin 53702

Patrick J. Lucy  
Governor

Robert K. Dun  
Secretary

May 25, 1977

Professor M. Ferentz  
Physics Department  
Brooklyn College of CUNY  
Brooklyn, New York 11218

Dear Professor Ferentz,

We have recently acquired UNIX and we would like to join the UNIX user's group.

Our hardware configuration is:

- 1 11/45 with 124K of core
- 4 Delta data terminals
- 2 Teletype (ASR33's)
- 1 300 lpm line printer
- 2 800 bpi, 9 track magtape drives
- 2 RP02 disk drives (20 mb's apiece)
- 1 Dual decotepe drive
- 1 Compuscan OCR (Model 170)

We have been running UNIX on this configuration for the last four months. Our main interest is online editing and typesetting. We have an APS-4 phototypesetter.

We would like to start getting the UNIX newsletter, etc.

Sincerely,

*M. Ahmad*

Mahmood Ahmad  
Management Information Specialist

MH:rvt 261522