newsletter of the
Technical UNIX®
User Group

This month ...

Late Breaking News...
Next Meeting to be held at UNISYS
See inside for details

Editor's Note

by Darren Besler, Editor

Welcome to the second newsletter of the Technical UNIX User Group. I hope you like the appearance and layout of the newsletter. I haven't had any negative criticisms, so you all must like it. And if you do have any suggestions or criticisms I would really like to hear from you.

I was very impressed with the larger turnout at the October Meeting, although a much larger turnout is still desired. Gilbert Detillieux gave a very good talk on Shell programming tips. If his presentation was a little over your head maybe a more down to earth presentation on just Shell programming could be put together for the novices in the group. We are still looking for suggestions for topics to be presented at future meetings.

As of this issue, I still haven't had any newsletter articles or tidbits submitted except for those provided by Gilles and Gilbert Detillieux. Again, I will stress that the success of this newsletter is dependant upon article submissions by the membership.

The preferred method of acticle submission is in some machine readable form. The preferred method is on a Macintosh or MS/PC-DOS diskette. Articles may also be submitted via modem or on hardcopy. If you have an article to contribute, give me a call and we can work out a convenient method of submission.

You have probably noticed that last months newsletter was dated September and this one is dated November. No, you didn't miss an issue. Let's just say that everything never works out the way you would like and we'll call this a goof up. If it was April I could call it an April fools joke, but it isn't so I have to claim responsibility.

See you at the next meeting and I hope the daemons were good to you.

The Fortunes File

Random fortune from a public domain DOS program called MURPHY, which delivers Murphy's Laws fortune-cookie style:

The Sausage Principle: People who love sausage and respect the law should never watch either one being made.

(Got a favorite fortune? Send it in to the newsletter. We'll print the best ones received each month.)

Meeting Location Change

For November's meeting only, we will be gathering at UNISYS, 300 - 1661 Portage Avenue. In order to have an idea of the number of people to expect please RSVP if you are planning on coming out to the meeting. This can be done by phoning Susan Zuk at 786-8483 and leaving a message that you will be attending the meeting. This can be done up until 5:00 pm the day of the meeting.

Phone Numbers and Addresses

Editor: Darren Besler   (H) 254-3392
                                (W)934-5475
Info: Susan Zuk   (W)786-8483
       Gilbert Detillieux   261-9146

Technical UNIX User Group
P.O. Box 130
Saint-Boniface, Manitoba
R2H 3B4

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President's Corner

by Gilbert Detillieux, President

The big news from last month's meeting is the elections. No, not the ones that we're all tired of hearing about on TV or radio (those north or south of the border), but the user group's elections. They weren't elections as such, since no position had more than one nominee. Regardless, here are the results:

President: Gilbert Detillieux
Secretary: Susan Zuk
Treasurer: Gilles Detillieux
Newsletter Editor: Darren Besler
Membership Secretary: Pat Macdonald

The positions of vice-president and programme secretaries remain vacant. We may be able to get by without a vice-president, though it would be nice to have someone to fill in for me if I can't make it to a particular meeting. I guess we'll cross that bridge when we come to it.

More importantly, we still need programme secretaries, to plan future meetings, arrange to have guest speakers, and so on (we would like to have several people, rather than have one person responsible for planning all the meetings). This would not be very demanding, particularly since the next meeting to plan is January's, and it's a fun way to get to know others in the group. Please get in touch with either Susan Zuk (786-8483) during business hours, or me, Gilbert Detillieux (261-9146) anytime, if you would like to get involved.

The other new development is that the name of the group is being registered. The name search has already been done, and by the time you read this, the name notation should be approved, and the bank account set up. We will then officially be the Technical UNIX User Group!

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To date, only six people have paid their $20 annual membership fee. Remember, we need these funds for production and mailing costs associated with this newsletter. This fee was due October 11. If you want to continue to receive this newsletter, please send us your payment soon. Cheques should be made out to the "Technical UNIX User Group" and can either be mailed to the group, or given at the next meeting.

While on the subject of the newsletter, we would like to receive material for inclusion in future issues. If you've recently read or heard an interesting news item about UNIX, or have recently tried out some new piece of software for UNIX, we'd like to hear about it too. Why not write up a few paragraphs and submit that to Darren?

● ●

The November meeting will end off with a workshop, rather than a presented topic. The workshop topic will be UNIX system administration and resource accounting. We hope to have a terminal set up in the meeting room, for demonstrations. The format of these workshops will be much the same as our usual round table discussions, but focussed on a more specific topic. So have your system administration related questions, problems, hints, and suggestions ready for then. That will be at 7:30 PM, on Tuesday November 8. The location of this meeting is indicated elsewhere in the newsletter.

The December meeting will be a very informal pre-Christmas get-together. There will be no business meeting, and no structured presentation. It will be a chance for members to get to know each other better, and should be lots of fun.

Until next time, take care, and have a happy Hallowe'en!

The Top Five on TUUG-FM:

1. Still Haven't Found What I'm Grepping For - M4
2. Sleep, Child o' Mine - Forks 'n' Execs
3. Never Split Us Apart - IN/ix-S
4. Caught You Swapping in the Background - The Shuffle Daemons
5. Better Be $HOME Soon - Crowded Disk

Meeting Schedule

(except November 8)
2nd Tueday of every month
7:30 PM
Room 431,
Basic Medical Sciences Building
Health Sciences Center

The NeXT Computer - Press Release

NeXT Inc. introduces a new type of computer system aimed at higher education

NeXT Inc., of Palo Alto, on Wednesday, October 12, 1988, unveiled the NeXT Computer System, designed to meet the demanding and diverse needs of higher education.

The system encompasses the best attributes of workstations and personal computers, adds features previously found only on mainframes and introduces entirely new innovations.

"NeXT's mission is to collaborate with higher education to develop innovative, personal and affordable computer solutions for the next decade and beyond," said Steven P. Jobs, president and chief executive officer of NeXT.

"We began our product design process at key higher education centers in this country, discovering what they wanted from a computer. Based on what we heard, we have created a revolutionary learning and research environment that represents what computing will be like in the 1990s."

Currently, there is a revolution in software development and use on college and university campuses, generating powerful concepts such as simulated environments for both research and learning. The problem is that higher education lacks a predictable computing target for software developers, which slows emergence of practical products.

"NeXT intends to provide this target by raising the lowest common denominator for standard capabilities in academic computing. In this way, we will help spur the realization of some innovative and important software ideas," Jobs said.

NeXT saw the need in higher education for a computer that combined qualities of workstations and personal computers, with cabilities far-exceeding either.

Specifically, the company took the workstation concepts of built-in networking, large standard display screens, multitasking and a robust application development environment, and designed and packaged them in a one-foot cube with personal computer-like characteristics such as affordability, efficient manufacturability and cool, quiet and reliable use.

At the same time, NeXT recognized that significant innovations were necessary to extend its computer system beyond a laundry list of impressive features.

NeXT chose to innovate in four main areas:

A mainframe on two chips:
The architectures of both workstations and personal computers contain inherent bottlenecks to higher performance that cannot be resolved by faster processors alone. To manage the flow of information within the system to yield peak efficiency, NeXT designed the ICP and OSP, two proprietary VLSI (very large-scale integration) chips that endow the system with mainframe-like capabilities.

NextStep:
Although UNIX provides powerful capabilities and is the most prevalent operating system for higher education and research, the complexity of UNIX-based computers has put them beyond the reach of almost everyone except scientists and engineers. At the same time, developing graphical application software has traditionally extracted an inordinate amount of time and expertise.

NeXT has addressed both these problems with NextStep, an object-oriented software environment. NextStep makes the power of UNIX accessible to all users, while it also significantly reduces the time, expertise and software code developers need to construct graphical, end-user applications.

Personal Optical Storage and the Digital Library:
The potential for desktop computers to open the world's knowledge to an individual has been restricted, in part, by inadequate mass storage and poor searching and indexing capabilities. To break through these restrictions, NeXT used a new storage technology called magneto-optics to create a removable, read/write/erasable 256 Megabyte Optical Disk as the Computer System's standard mass storage device.

The Optical Disk makes possible the concept of the "Digital Library," which can comprise on-line reference and literary works, musical scores or images of photographic quality.

Included with every system is a powerful searching and indexing tool called the Digital Librarian and a "starter" Digital Library.

Sound and Music:
Sound is considered a vital communication medium. As a result, NeXT has made sound capabilities integral to its computer system: a microphone jack for input, CD-quality stereo output, a powerful 10 MIPS (million insructions per second) Digital Signal Processor (DSP) and a standard voice mail application.

To encourage the development of applications that include sound, music and voice, the system also includes the SoundKit and MusicKit.

The Sum is greater than the parts-

"Many of the NeXT Computer System's individual components represent major technological breakthroughs," Jobs said. "Taken in sum, they generate capabilities and potential exceeding that of any existing category of computer system."

The sytem's basic hardware configuration includes the computer, a one-foot cube that houses on a single board all the computer's highly integrated silicon chips; the 256 Megabyate Optical Disk for editable storage and retrieval of vast amounts of information; the 17-inch, extremely high-resolution MegaPixel Display; and the 400 dpi Laser Printer, which is the first affordable PostScript laser printer and the first low-cost laser printer to provide 400 dots per inch (dpi) resolution.

Underlying all the system's capabilities is a small, powerful and efficient set of computer chips, all of which are standard and fit onto a single board. There are three high-performance processors in every system.

The main processor is Motorola's top-of-the-line microprocessor, the 68030. Accompanying it is Motorola's 68882 Floating-Point Unit, for fast mathematical computations. Both these chips run at 25 megahertz.

The third processor is a 10 MIPS Motorola 56001 Digital Signal Processor chip, for real-time sound and array processing. The board can also support up to 16 megabytes (MB) of main memory.

Two proprietary VLSI chips, designed by NeXT, give the sytem its mainframe-like qualities.

The Integrated Channel Processor (ICP) manages the flow of data among the central processing unit (the 68030), main memory and all peripheral devices. By offloading the 68030 and ensuring the efficient flow of data within the system, the ICP allows the 68030 to run at its full rated capacity of 5 MIPS.

The ICP provides 12 dedicated DMA (direct memory access) channels, including channels for Ethernet networking and for disks, monitor, printer and other peripheral devices. The single ICP chip replaces several hundred chips performing similar functions on a mainframe computer, and it raises sustained system throughput to a level impossible with either personal computer or workstation architectures.

The other VLSI chip, the Optical Storage Processor, controls the 256 Megabyte Optical Disk, making possible this new storage technology The Optical Disk combines the vast storage capacities, removability and reliability of laser technology with the fast access and full read/write/erase capabilities of Win-

chester (magnetic) technology. The Optical Disk provides unprecedented information storage, manipulation and retrieval. With the Optical Disk working in conjunction with the Digital Librarian, a specially designed searching and indexing tool, users can almost instantaneously locate any textual information, in any form, anywhere in the computer.

They can also browse through the system to uncover information, ideas or connections between concepts.

Software is Part of the System.

NeXT includes an unparalled amount of software in the price of every NeXT Computer System. The software starts with Mach, an advanced multitasking operating system compatible with 4.3BSD UNIX, which is the standard operating system in higher education communities.

In addition, the NeXT Computer System includes NextStep, a complete software environment consisting of four components: the Window Server, the Workspace Manager, the Application Kit and the Interface Builder. The object-oriented environment was developed with the Objective-C programming language, from the Stepstone Corp.

NextStep solves the two major problems with UNIX-based systems: They are too complex and difficult for most non-programmers to use, and they require developers to spend an inordinate amount of time and expertise creating graphical, end-user applications. For users, NextStep makes the power of UNIX available by substituting a window-based, graphical and intuitive interface for the traditional UNIX comand-line interface. For developers, NextStep includes the Application Kit, a set of interacting software "objects" for constructing applications.

Also included in NextStep is Interface Builder, a completely new kind of software development tool. Interface Builder works graphically, letting the developer construct an application by choosing from a palette of available objects and using the mouse and keyboard to modify the objects as needed, define the layout and establish connections between objects.

This process permits the rapid construction of graphical user interfaces and makes application development accessible to a much larger community.

NextStep uses the Display PostScript system to ensure true WYSIWYG (What You See Is What You Get) between the screen and the printer. The Display PostScript system includes a high-performance implementation of the PostScript language, the de facto imaging standard for printing. It simplifies the programming of graphical applications that support high-quality printing.

To further aid developers, the NeXT Computer System includes the SoundKit, MusicKit, array processing routines,

assemblers, compilers, debuggers and a terminal emulator.

Standard with each system, on the 256 Megabyte Optical Disk, is a basic Digital Library. A Digital Library can contain complete reference works, books, images or musical scores.

The bundled library includes the Webster's Ninth New Collegiate Dictionary, including definitions, pronunciations and illustrations, not just spelling; Webster's Collegiate Thesaurus; the Oxford Dictionary of Quotations; the Oxford University Press edition of William Shakespeare; The Complete Works. NeXT technical references and other pertinent technical references.

The NeXT Computer System also includes a rich set of bundled application software. These applications include WriteNow, a full-featured word processing program; Mathematica, a symbolic mathematics program; the powerful NeXT SQL Database Server, from Sybase; Allegro CL Common Lisp; Jot, a personal text database manager; and a graphical electronic mail application with integrated voice mail capabilities.

NeXT has built its business plan and products to meet the needs of higher education. The company determined these needs through close collaboration with leaders at college and university campuses nationwide, uncovering the gaps between current and ideal computer technology for this marketplace.

"Higher education is a huge market, certainly big enough in itself to grow NeXT to critical mass," said Dan'l Lewin, vice president of sales and marketing and NeXT. "Beyond that, higher education is the most demanding and diverse marketplace conceivable. It provides a real acid test. If we can do well here, were can do well anywhere.

"The key is understanding and committing to a business model that works the way higher education does, both in its generic form and as it varies from campus to campus. That's where NeXT has the edge, because we are the only computer company that has amassed both the market knowledge and the technological ability to deliver the right computing tools," Lewin said.

During 1988, NeXT will market its computer System directly to several dozen of the nation's top institutions and software developers. NeXT expects to appeal to higher education on the strength of its technology tools and through the personal business relationships the company has established with the higher education community.

Price and Availability

The standard NeXT Computer System configuration, which includes 8 MB of main memory, the 256 Megabyte Optical Disk, the MegaPixel Display, keyboard, mouse and complete system software, will sell for $6,500. The 400 dpi Laser Printer will sell for $2,000. All prices quoted are for higher education.

NeXT will ship systems to its key customers and developers starting this quarter, and expects to ship systems with final software by the second quarter of 1989 to a broader base of institutions and developers. Available options to the standard configuration include 4 MB RAM expansion modules (up to 16 MB total), 660 MB and 330 MB high-performance Winchester drives, an Ethernet kit, blank Optical Disks and printer toner cartridges.

NeXT Inc., of Palo Alto, was founded in October 1985 by Steven P. Jobs, co-founder and former chairman of Apple Computer Inc., and five other individuals. The mission of the privately held company is to collaborate with higher education to develop innovative, personal and affordable computer solutions for the 1990s and beyond.

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If after reading the above press release you want to find out more information about the Next Computer, there is a very detailed article in the November issue of Byte magazine.

I would like to thank William Kiss of the University of Manitoba's Computer Science Dept. for passing on this press release to the Technical Unix User Group.

Editor

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Masscomp and Concurrent Computer Merge

Massachusetts Computer Corp. (Masscomp) of Westford, MA, is acquiring all shares of Concurrent Computer Corp. of Trinton Falls, NJ. The two companies' product lines will be combined, with Masscomp's real-time UNIX systems at the low end, and Concurrent's at the high end. The Concurrent systems will switch over to a new, real-time version of UNIX which is still under development.

Although Masscomp is the buyer, the merged company will be called Concurrent Computer Corp., and its president will be James Sims, the current president and CEO of Concurrent. Masscomp's president and CEO, Russell Planitzer, will serve on the board of directors of the combined company. The corporate headquarters for the new company will be Concurrent's existing headquarters in Trinton Falls, NJ. All products will now be produced at Concurrent's manufacturing facilities in New Jersey and in Cork, Ireland. Masscomp's manufacturing facilities will be closed, and nearly 300 jobs will be lost in the process.

The above was submitted by Gilles Detillieux.
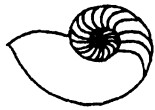
Minutes From the Business Meeting
October 11, 1988

1. Minutes:

MOVED: (Keith Green) The minutes from the September 13th be approved.

SECONDED: (Gilbert Detillieux)

In Favour: 13   Opposed: 0   Carried

2. Membership Dues:

It was voted in the September meeting that membership fees for the current year will be $20.00. The fees will be mainly used to cover the production and mailing costs of the newsletters.

Membership fees are due as of the October meeting. People can either pay their dues at the Upcoming November meeting or send a cheque (written out to "Technical UNIX User Group") to P.O. Box 130, Saint-Boniface, Manitoba, R2H 3B4. Receipts will be issued to all members.

3. Newsletters:

Our first newsletter was very well received. Thank you Darren for all your hard work.

Newsletters will be sent to all members, a week prior to every meeting. There are 10 meetings a year (excluding July and August). The members will be receiving 10 newsletters and possibly a summer edition (this will be decided at a later date).

The newletter will be comprised of an editorial column, President's corner, and the previous month's minutes. In addition to the regular sections we require member input. Member contributions can be regarding anything read, packages being evaluated or used or any new break-throughs in the marketplace. The articles need not be long.

The group would also like to start a "fortune of the month". If you have seen or know of any comical sayings or jokes please submit them.

Any material can be sent to the post office box address or directly to the editor, Darren Bessler. There is also a facility to submit information by modem.

Please help us to create your newsletter. It can only be accomplished with member input.

3. Elections:

MOTIONED: (Gilbert Detillieux) That the slate of candidates be adopted.

SECONDED: (Robert Day)

In Favour: 13   Opposed: 0   Passed

President: Gilbert Detilliuex
Vice President: Vacant
Secretary: Susan Zuk
Treasurer: Gilles Detillieux
Newsletter Editor: Darren Besler
Membership Secretary: Pat Macdonald
Program Secretaries: Vacant

The open positions and duties are as follows:

Vice President: Chairs the meetings when the President is unavailable.

Program Secretaries: Plans upcoming meetings. Would prrefer several people, so work can be divided and more ideas are available.
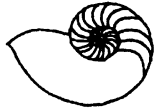
5. Next Meeting:

Topic: System Administration Workshop
Date: November 8th, 1988
Time: 7:30pm
Place: Unisys office, Canadian Indemnity Building, 300-1661 Portage Avenue

Technical UNIX® User Group

Agenda
for
Tuesday, October 11, 1988
7:30pm
UNISYS
Canadian Indemnity
300-1661 Portage Avenue

1. Round Table   7:30

2. Business Meeting   8:00
   a) Membership Secretary' Report
   b) Newsletter Report
   c) Treasurer's Report

3. Break   8:30

4. Presented Topic   8:40
   System Administration Workshop

5. Adjourn   9:30