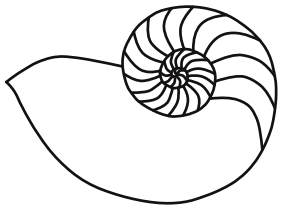
Volume 5, Number 8 June 1993 $2.50



MUUG Lines

Manitoba UNIX® User Group

Newsletter of the Manitoba UNIX® User Group

Your Disk Space Quota

(And What You Can Do About It)

By Gilles Detillieux

A question that comes up often among users of our MUUG Online system is "What is my disk quota?" The next question these users usually have is "What can I do if I need more space?" To give these users a helping hand, and to save the administrators from having to answer the same questions time and time again, I will deal with both of these questions here.

The quota command will list what your disk usage and limits are. Just enter the command: "`quota -v`". Amounts are shown in kilobytes. The "quota" listed is your soft quota, and the "limit" listed is your hard limit. Without the "`-v`" option, only warnings about being over your quota are shown.

You cannot exceed your hard limit — programs that attempt to do so will get write errors. If you exceed your soft quota you will get a warning, and you have no more than three days to bring your disk usage down below your quota. If you fail to do so, your soft quota will become your hard limit, and you will not be able to allocate more space until you clean up.

If you need more space than your quota allows, there are a few things you can do about it:

1) Clean up. It is surprising how quickly one can accumulate stuff, and one should get in the habit of regularly cleaning up. Use the "`du`" command to see which of your directories are tying up the most space. You should download to your own system any files you want to keep, and remove anything you don't need. If you haven't downloaded files from MONA yet, you should read the help page on that topic (enter the command "`help downloading`") before you attempt this.

2) Make use of short term storage. You don't have to worry about going over your quota, as long as you clean up after yourself. Your hard limit is quite generous, and should suffice for most needs.

If you find you need more storage than your hard limit allows, you may create a temporary directory for yourself under the "`/var/tmp`" directory, for short term usage only. This directory is on another partition, and is not currently subject to the quota restrictions in your home directory. However, if you do make use of this directory, please clean up after yourself. The administrators take a dim view of users who attempt to use this for long term storage. Also be forewarned that files in this directory will be deleted without warning when space is tight on this partition. Use it at your own risk.

3) Get more long term storage. If you find you need more long term storage than your current quota allows, and you feel you can make a convincing case to justify it, you can ask to have your quota increased. Address such requests to the Computer Use Committee, <cuc@muug.mb.ca>, who will look at your case. Cases that will be of benefit to the group will be seriously considered; request for trivial reasons will be gleefully ignored.

With these guidelines in mind, you should be able to get the space you need for any project you undertake on MONA. Most of this article is available online, by using the "`help quota`" command. Other help pages are also available, which deal with a number of other questions that come up often. Users are encouraged to read through these help pages before asking the administrators for help. Any suggestions for additional help topics will be welcomed.

This Month's Meeting

Meeting Location:
Our next meeting, the traditional June BBQ, is scheduled for Tuesday, June 8, at 6:30 PM. Paul Hope is hosting it this time. The address is 5652 Henderson Highway, about 12 km north of the Perimeter Highway, and just south of Lockport. See inside for a map. RSVP to Paul by June 4, preferably by e-mail to <phope@muug.mb.ca>.

Meeting Agenda:
Eat, drink, and be merry. After all, it's a party!

Inside This Issue

Newsletter Editor's Ramblings 2
President's Corner 3
Feedback: Ask Monsieur Ex 3
Industry: Open Systems News 4
Net News: CA Domain Statistics 5
Industry: UNIX on the Desktop 6
The Fortune File: Berkeley California 9
SIG Sideline 10
Map to the June 8 BBQ 10

UNIX is a registered trademark of UNIX System Laboratories, Inc.

OS Wars: Blah, Blah, Blah, Blah, ...

By Gilbert Detillieux

For several months now, the Operating Systems Wars have been played out by many of the great, and not so great, contenders. Each vendor's claims of offering the superior system have been getting bolder and more outrageous. Vendors of proprietary systems, along with supposedly "impartial" publications that are in bed with them, have long been tolling the death knell of UNIX. Vendors of UNIX systems aren't taking this lying down, and have come together again, ready for another good fight.

But where does all this leave us poor users? With all the hype, it's getting harder to know what to believe and what is a safe migration path. This sort of confusion is what some vendors are hoping for. But in the long run, I feel, sanity will prevail, and these tactics will backfire on the vendors that use them.

After all, most users don't particularly care which system their applications are running on, or from which vendor it came. They want to be sure their applications will run, and will continue to do so for as many years as they'll be needed, regardless of how the systems and the applications themselves evolve. Users in larger environments will often have a mixture of different hardware platforms, operating systems, and applications. What's important there is that these can all communicate and work together – in other words, interoperability.

Most vendors, regardless of which "gospel" they preach, are starting to realize this. Despite their verbal bashing of one another, they are starting to cooperate in some ways, and agree to certain industry standards. This is most visible in the area of networking protocols, but there's also movement toward standards in other areas. It's ironic that two of the biggest UNIX bashers, DEC and Microsoft, are touting POSIX compliance in their new proprietary systems, OpenVMS and Windows NT, respectively.

Is UNIX dead? Perhaps in it's present form, its days are numbered. But the same can be said of any system. All of these systems are constantly evolving, and fortunately they now seem to be evolving toward common standards. Regardless of what happens to UNIX itself, interoperability and standard program interfaces will be its legacy.

The 1992-1993 Executive

President:	Susan Zuk	(W) 631-2530
Vice-President:	Bary Finch	(W) 934-2723
Treasurer:	Rick Horocholyn	(W) 474-4533
Secretary:	Roland Schneider	1-482-5173
Membership Sec.:	Richard Kwiatkowski	589-4857
Mailing List:	Roland Schneider	1-482-5173
Meeting Coordinator:	Paul Hope	(W) 237-2361
Newsletter editor:	Gilbert Detillieux	489-7016
Publicity Director	Gilles Detillieux	489-7016
Information:	Susan Zuk	(W) 631-2530
		(FAX) 694-3901
(or)	Gilbert Detillieux	(H) 489-7016
		(FAX) 269-9178

Copyright Policy and Disclaimer

This newsletter is ©opyrighted by the Manitoba UNIX User Group. Articles may be reprinted without permission, for non-profit use, as long as the article is reprinted in its entirety and both the original author and the Manitoba UNIX User Group are given credit.

The Manitoba UNIX User Group, the editor, and contributors of this newsletter do not assume any liability for any damages that may occur as a result of information published in this newsletter.

Our Address

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

Internet E-mail:
editor@muug.mb.ca

Group Information

The Manitoba UNIX User Group meets at 7:30 PM the second Tuesday of every month, except July and August. Meeting locations vary. The newsletter is mailed to all paid-up members one week prior to the meeting. Membership dues are $25 annually and are due as indicated by the renewal date on your newsletter's mailing label. Membership dues are accepted by mail, or at any meeting.

PRESIDENT'S CORNER

A Few Things Before We Go...

By Susan Zuk, President

This May found MUUG very busy with a number of activities.

On May 4th, we held our first SIG meeting. This group meets to discuss topics on system administration and UNIX/LINUX utilities. This special interest group is designed for those members who are just getting into UNIX as well as those who would like to continue learning about the powers of the operating system. If you are interested in attending the next meeting, call Bary Finch, or see the last page of this newsletter for details.

On May 8th and 9th, MUUG participated, for the second year, in the Muddy Waters Computer Society Computer EXPO, which was held at the Convention Centre. This year we were ready to promote the group. Our booth was complete with a banner, our new membership brochures, newsletters, UniForum Monthly Magazines, UNIX World Magazines as well as a LINUX system. From speaking with the various attendees it seems that more people are coming into contact with UNIX with many beginning to work in the environment. This shows quite a difference from last year. I would like to thank the following people who donated their time to help man the booth and promote the group. Your help was greatly appreciated, especially with the event falling on Mother's Day weekend. Thanks go out to Bill Reid, Rick Thorarinson, Bary Finch, Richard Kwiatkowski, Andrew Chan, Gilbert Detillieux, Gilles Detillieux, Gord Tulloch, Brad West, Greg Moeller and Wolfgang Von Thuelen. Special thanks goes out to Roland Schneider who brought his PC loaded with LINUX as well as having previously set up some pop-up windows describing the group and LINUX. Your long hours setting up the system were well worth it.

At our regular monthly meeting, on Tuesday, May 11th, MUUG hosted a presentation called "Client/Server Computing Using Sybase". Mr. Bob Kaypac, of Fort Ignition, provided us with an insight as to what Client/Server computing is and how Sybase fits into this methodology. This was a very interesting talk and also well received. Thank you, Bob, for providing the group with such a timely and interesting speech.

In June, MUUG will hold its annual barbecue. This barbecue will be held at the Hope residence. It is an opportunity for you and your significant other to come out and get to know MUUG members on a social level. All you need to do is bring your own liquor, entree and lawn chair. MUUG will provide the salads, chips, mix, condiments, etc. Come on out and help us to bring in the summer season.

In late October CIPS and MUUG will jointly host another UNIX/Open Systems Seminar to be held at the International Inn. The rough outline of the seminar describes it as being one day in length and focused on software such as system management, RDBMSs, 4GLs, networking, etc. There will be a vendor's exhibit to allow attendees to see what is being discussed during the sessions. We have almost completed putting the organizing committee together. If you would like to participate on one of the following committees, please give me a call at 631-2530. The committees are: publicity, seminar speakers, vendor area, event day volunteers, and registration. The knowledge gained from taking part in an event like this is quite amazing.

That's all for now. I hope to see you at the MUUG barbecue on Tuesday, June 9th. If you are unable to attend, I hope you have a wonderful and warm summer!

FEEDBACK

Ask Monsieur Ex

A column in which our resident UNIX expert answers questions submitted by members, or discussed at round table sessions.

By Gilbert Detillieux

Dear Monsieur Ex,

I have a file name where the first character is a hyphen. E.g. `-test.lzh`.

How I can delete this file ?

Thanks!

A Novice User

Dear User,

Ah oui, the old leading hyphen problem. You've tried quoting it, ... and backslashes only make more of a mess. What is a poor user to do?

The best thing to do with files like that is to prepend a "./" to the front of the name, when using it on a command line. E.g.:

```
rm ./-test.lzh            (to remove it)
```

or

```
mv ./-test.lzh test.lzh   (to rename it)
```

The "./" tells the system to look for the file in the current directory, and prevents the command from seeing the leading hyphen as the start of an option argument.

***Monsieur Ex**, a mysterious Frenchman who claims to be an old editor and an expert in UNIX, will return again next time he's asked questions, so don't forget to write in, kids!*
***Gilbert Detillieux**, a French-Canadian of non-mysterious origins, is mysteriously still the MUUG newsletter editor.*

Open Systems News

Reprinted with permission from the March and April 1993 issues of UniForum Monthly*, published by UniForum.*

IBM's New Balancing Act

No doubt about it. IBM's recent troubles may be bad news for its employees, customers and stockholders, but over the long term, it's going to be good news for UNIX and open systems. Don't get too excited though, warns one veteran IBM watcher. "IBM's not going to abandon any of its proprietary systems for open systems, it's just going to better balance the two areas," says Brian Jeffries, president of the International Technology Group (ITG), a Los Altos, Calif., market research firm.

"It's reasonably clear that the priority for open systems will increase in the future," Jeffries continues. "There's heavy demand for open systems products, particularly out of Europe."

Though IBM seems confused and in turmoil right now, he says the company should emerge with a reasonable chance for recovery once a new management team puts together a clear-cut and clearly articulated strategic direction.

In the end, Jeffries says IBM will emerge from its current troubles with a much better balance between its proprietary and open systems offering in its vast product line. Consider the midrange computer market segment, one of the few bright spots in what was otherwise a disappointing year for the computer industry at large. At IBM, it was both a good and bad year in the midrange.

By IBM's own admission, sales of its proprietary AS/400 midrange systems — long described as one of Big Blue's most successful product lines ever — ground to a virtual halt, growing a meager 2 percent over the year before. In contrast, IBM has always downplayed its RS/6000 line of UNIX-based workstations and servers, particularly for commercial applications, for fear that it would negatively impact the AS/400 sales. But the RS/6000 was IBM's fastest growing product line in 1992; sales zoomed past 25 percent over the year before. "And in commercial applications, the growth was even higher, over 30 percent," Jeffries adds.

For Jeffries, "balance" appears to be the operative word in IBM's future at the low and high ends as well. "I expect IBM to balance off the PowerPC and Intel architectures at the desktop, and to see a growing emphasis on parallel processing UNIX systems at the high end," he said. "If you run MVS now, you're not going to migrate to UNIX. High-end UNIX parallel processing systems are being used to bring up new applications. What I see happening is that the MVS base will remain more or less stable, while the UNIX-based parallel processing systems now out there, and commonly used for scientific and engineering applications, will be used more and more for commercial applications."

IBM made a start on that better balance in early February, introducing nine new members of its RS/6000 workstation line and two firsts — its first parallel processing system and its first NFS server. The new RS/6000 workstations include the Xstation 150 X terminal and diskless Powerstation M20 desktop system, the first one-chip implementation of the Power RISC architecture. Prices for Xstation start at $5,539, and for the M20 at $3,995, making the M20 the lowest-cost entry-level color system in the industry, according to Big Blue.

At the high end, the RS/6000 systems include the Powerstation 970B and 980B rack-mounted systems, prices starting at $97,822 and $117,822, respectively.

The Scalable POWERparallel 9076 SP1 supports from eight to 64 Power RISC chips, each of which can be configured with 256MB of RAM and 2GB of disk storage. Build-to-order SP1 systems are available immediately, followed by volume shipments in the third quarter. Pricing for an eight-CPU system begins at $312,000, IBM says.

The 7051 POWER Network Dataserver is a high-performance NFS server that performs up to 2,000 NFS I/O operations per second, about two to three times the performance of traditional UNIX servers, according to IBM. Prices start at $177,600.

IBM's Troubles

For more background about IBM's troubles, bookstores should have a copy of *Computer Wars* from Time Books, New York. Authors Charles H. Ferguson and Charles R. Morris trace the root of IBM's current problems to its legendary F/S — short for "Future System" — project, a sacred cow that cost billions of research dollars but failed to produce tangible results, except to muzzle dissent within IBM's top management ranks. The authors also blame IBM's inability to stand up to Microsoft's Bill Gates over next-generation PC operating systems. For those who can't get to the bookstore any time soon, the Feb. 1 issue of *Information Week* has information.

Tuxedo Dresses Up

UNIX System Laboratories, Summit, N.J., has announced new features for its Tuxedo transaction processing system, designed to bolster the product's readiness for use as both an on-line transaction processor (OLTP) and in distributed client/server applications.

Tuxedo is the leading UNIX transaction processing monitor with a 56 percent market share, according to the Stamford, Conn., market research firm Gartner Group.

Besides adding the new features, USL announced a new strategy for the product, saying it would be further enhanced to interoperate with IBM's MVS operating system, IBM's customer information control system OLTP program, and be integrated with USL's own Distributed Management products.

The new release 4.2 is the first Tuxedo release that conforms to the X/Open TX and XATMI standards, interfaces for OLTP application programming. The interfaces expand application portability among different

conforming transaction processing systems. TX represents transaction demarcation verbs used between the application and the transaction manager in OLTP applications. The XATMI interface provides communication verbs for use in open OLTP applications.

In addition, Tuxedo's new release provides reliable message queuing, enabling the system to perform long-running, time-delayed and event-driven transactions by writing the messages to disk.

A dynamic linked libraries feature is provided for IBM's OS/2 operating system and other desktop software, allowing developers to use familiar desktop applications as clients to the Tuxedo system.

An additional new feature is a programming interface to the Cobol language, allowing programmers experienced with Cobol to write Tuxedo applications in a familiar programming environment.

Workstation Slowdown?

The latest results on 1992 computer industry sales are in from Dataquest Inc. and it looks like the year was a proverbial good news/bad news situation for UNIX workstations. First, the good news. From 1991 to 1992, factory revenue for workstation sales grew 4.2 percent, from $8.7 billion in 1991 to $9 billion in 1992, according to the San Jose, Calif., market research firm. Now the bad news. Though workstation revenues increased, market growth cooled considerably from the previous year, when sales grew 14.5 percent over the year before. Dataquest attributes the slowdown to customer preference for lower-cost workstations and economic woes in the critical Japanese market. In other industry segments, sales of PCs and mid-range systems also improved during 1992. The big loser — not surprising given the growing downsizing craze in corporate computing — was the mainframe market. Factory revenues dropped from $24.9 billion in 1991 to $21.6 billion in 1992.

UNIX Versus NT

Why do users want NT? Just one reason, some say — Windows applications. NT won't have that advantage for long, however. Before NT's out the door, Sun Microsystems Computer Corp.'s SunSelect PC/Macintosh-to-UNIX connectivity business unit should be out with a Windows-over-UNIX software emulation environment for SPARC/Solaris systems, possibly this month, in time for UniForum in San Francisco. The product, which draws heavily on the use of the X Window system, is the first tangible result of SunSelect's acquisition of Praxis Software last fall. Other desktop UNIX suppliers are not far behind. Univel, the Novell/USL joint venture, has been making noises about similar technology for UNIXWare, and some ISVs have reportedly been planning to port the Windows API onto UNIX, allowing Windows applications to run directly on a UNIX system without the need of a software emulator similar to that from Praxis.

CA Domain Statistics

By John Demco <demco@cs.ubc.ca>, CA Domain Registrar

Via news group can.domain

As of March 17, 1993, we now have more than 500 registered CA subdomains.

CA Registered Organizations by Scope

Year	AB	BC	MB	NB	NF	NS	NT	ON	PE	QC	SK	YK	CA	Total
1988	1	11	0	0	0	0	0	2	0	0	0	0	43	**57**
1989	3	10	0	0	0	0	0	9	0	1	0	0	15	**38**
1990	4	8	0	0	0	3	0	3	0	2	0	0	21	**41**
1991	11	12	4	0	4	12	0	22	1	3	2	0	34	**105**
1992	20	33	6	3	4	7	0	61	0	18	5	1	46	**204**
1993	3	5	0	0	0	1	1	21	0	9	2	0	15	**57**
Total	**42**	**79**	**10**	**3**	**8**	**23**	**1**	**118**	**1**	**33**	**9**	**1**	**174**	**502**

CA Registered Organizations by Classification

Year	Commercial	Educational	Government	Other	Total
1988	8	42	3	4	**57**
1989	18	14	5	1	**38**
1990	18	14	5	4	**41**
1991	52	20	17	16	**105**
1992	114	40	23	27	**204**
1993	41	4	2	10	**57**
Total	**251**	**134**	**55**	**62**	**502**

Not Yet *Dancing* On The Desktop

By Jennifer Beaver

As NT looms on the desktop horizon and DOS continues to hold sway, many are questioning the destiny of UNIX-based PCs...

Reprinted with permission from the February 1993 issue of UniForum Monthly*, published by UniForum.*

All of a sudden, UNIX software and Intel processors have become an item. To those who associate UNIX with high-end RISC chips and workstations, the pair may seem an unlikely duo. Though Intel has been capable of running UNIX, it is the chip maker's most recent crop of processors — the X486 and upcoming Pentium — that has attracted a flurry of interest from new and established UNIX software and hardware vendors. These vendors are venturing beyond their comfortable niche in engineering and scientific environments to seek more mainstream commercial applications — and Intel is their entre.

"Until recently, many people didn't believe the Intel platform would adequately address the power and growth needs of heavy-duty corporate users," says Brian Wadsworth, marketing manager for The Santa Cruz Operation's (SCO) product business units. "The newer processors, combined with Intel's willingness to lay out a technical road map for the future, is giving users increased confidence in the platform."

SCO hitched its star to Intel over a decade ago with its desktop UNIX products. Today, a third of all UNIX applications run on SCO software, says Wadsworth. Now, some other vendors want a chunk of the Intel pie. Sun Microsystems's subsidiary, SunSoft, is developing a line of UNIX-on-Intel software. Univel, a new company jointly owned by Novell Inc. and UNIX System Laboratories Inc. (USL), has targeted the PC LAN market with its UNIX software. And major hardware and software vendors are choosing which of the many assorted UNIX versions deserve their support.

Market Small But Growing

A look at these so-called "desktop" UNIX systems indicates that the market is small, yet growing — but will still be a "drop in the bucket" compared to other operating systems, according to International Data Corp. (IDC) UNIX analyst David Card. According to IDC, in 1991 shipments of UNIX running on personal computers and workstations took up only a fraction of the operating system market — 2.8 percent. That figure equates to about 725,000 units, 414,000 of those running on workstations configured for single users, less than 60,000 for single user PCs and approximately 25,000 on small hosts with dumb terminals attached.

By 1996, the PC/workstation share of the operating market will grow to 7.2 percent. "Though we show a 70 percent compound annual growth for single user UNIX from 1991 to 1996, the desktop is still Microsoft's to lose," says Card. The market share for DOS, cannibalized by Windows, is expected to drop from 49 percent in 1991 to 26 percent in 1996. Windows will jump from 26 to 39 percent in the same period.

Interestingly enough, NT — the operating system many believe will rival UNIX — is expected to have nearly the same market share as UNIX in 1996 — only 6 percent. That could eventually rise dramatically if the fledgling operating system attracts supporters. OS/2 is also expected to take a huge leap in market share — from 2 percent in 1991 to 14 percent in 1996, according to IDC.

Why the Desktop Market is Important

Since the market for desktop UNIX is so small, why are so many people after it? One analyst has the short answer: "It could become big, so no one can ignore it," says Tom Wood, senior analyst at Business Research Group, a market-research firm in Newton, Mass.

The long answer is a little more complex. Part of the problem is the somewhat misleading misnomer of "desktop" UNIX. Though Intel has long been associated with the one-person, one-machine concept of desktop computing, the new breed of Intel-based PCs bears little resemblance to its predecessors in either power or function. Though you can park an X486-based computer on a desktop, and a lot of people do, it is seldom a single-user device.

In the eyes of the new desktop UNIX proponents, those little 32-bit powerhouses, connected to networks local and global, have become the possible entry point into the world of commercial corporate computing. Intel has already established the beachhead with its entrenched base of personal computers. With powerful 32-bit software matched to these newly-powerful machines, UNIX vendors are hoping their products can provide the glue that connects these PCs across the enterprise while providing the multi-user, multitasking abilities for which the operating system is known.

Betting on the Downsizing Trend

SCO, Univel and SunSoft are all hoping that the corporate trend toward small-but-powerful distributed computing systems will include UNIX-based PCs. Some call it 'downsizing;' others call it 'rightsizing.' Either way, the desktop is essential for the adoption of corporate-wide UNIX. "The desktop has as much of a legacy as the mainframe," comments Wadsworth.

With hardware choices reduced to near-commodity status, SCO is betting that the crucial corporate downsizing decision will be on which operation system to use. Standards, applications, connectivity and interoperability will all come in to play. With proven connectivity options to both mainframes and desktops, SCO already has products that will help information systems managers downsize — either by converting existing applications to UNIX or by building UNIX bridges to them.

SunSoft is hoping that the reputation of its parent

company, Sun Microsystems Inc., will help pave the way for its UNIX-on-Intel offerings. "At the server level, Sun's prior experience should help dramatically, though we still need to prove that UNIX on Intel is a viable market," says Allan Snell, SunSoft Director of X86 Product Marketing. "Our customers who use RISC-based workstations for enterprise client/server computing have begun to ask for Solaris-on-Intel as well."

Also pursuing the downsizing market, SunSoft recently offered a 50 percent discount to SCO users willing to jump ship and use SunSoft's Interactive UNIX instead.

Snell stresses the networking ability of SunSoft products. "We're committed to playing in the enterprise world," he says. "We plug and play with real networks — that's the difference between us and some of the other vendors."

Univel, for example, is solely targeting PC LAN connectivity in its release of UnixWare. Designed for the Intel 386, 486 and later versions of that line of processors, UnixWare provides transparent connections to NetWare, Novell's PC network operating system. Univel, too, wants the downsizing market, particularly those database, financial and vertical applications that traditionally have been run on mainframes.

According to many analysts, UNIX has great potential as a downsizing tool — particularly when used in a mid-level server capacity. "UNIX is tailor-made for downsizing," says Card. "The UNIX operating system environment has the features needed to run commercial applications and networks."

For corporate-wide downsizing and rightsizing applications, UNIX may have the edge over potential challenger NT. "NT does not seem at all capable of providing server level capabilities in the near future," says Snell. "While it may be a formidable competitor in some areas, we don't believe it has the built-in networking required to compete in our targeted area — the Global 1000 who are looking at rightsizing.

"NT is expected to have nearly the same desktop market share as UNIX in 1996 – only six percent."

"Microsoft has taken on a big job with NT," says Wadsworth. "It will be some time before NT reaches the maturity to be a viable alternative to UNIX. Its immediate impact will be to connect the installed base of Windows in a PC network. With UNIX, users are investing in an industry that has evolved over 20 years, backed by government procurement. It's a leap of faith that Bill Gates will provide you with the software you need to run your business on."

Application software developers are also blessing the rightsizing trend. Though UNIX-based products make up only 2 percent of the income from WordPerfect products, the company is firmly committed to supporting the operating system. "Though it is not our biggest breadwinner, UNIX will be a major player in heterogeneous networks in the commercial market," says Brent McKinley, WordPerfect director of UNIX marketing. "Connectivity and computing across platforms will continue to grow in importance. Unix is an important strategic platform for the future."

UNIX on the Desktop: A Tough Challenge

Though their target market may be corporate-wide and often server-level, UNIX vendors whose products are Intel-based run smack into the formidable presence of both DOS and Windows.

Given the multiuser, multitasking nature of UNIX, it doesn't make a lot of sense to pit it directly against an essentially single-user operating system. UNIX, however, does not necessarily have to replace DOS so much as to complement and coexist with it. That, of course, is one of the primary reasons developers chose the Intel platform for their desktop UNIX offerings. Intel chips are partitioned to run both DOS and UNIX.

Yet because they run on Intel, many desktop UNIX packages will inevitably be compared to DOS. The experts are divided about how UNIX will fare in this market. "What is the incentive to change to UNIX on the desktop?" queries Warren McKenzie, a partner in Redmond Group, a strategic consulting firm in Redmond, Wash. "UNIX demands more system resources. Windows has attracted most of the application development projects. The only place I can see UNIX is as a server."

"To gain a presence on the desktop, UNIX must do everything as well or better than DOS," says analyst Wood, whose surveys of networked computer users indicated that UNIX is in "platform purgatory."

Some believe, however, that UNIX is still being unjustly maligned for former performance, administration and ease-of-use issues. Newer versions of both software and hardware have corrected some of these problems. "When it comes to running DOS productivity software, UNIX already does a good job," says Rikki Kirzner, principal analyst at Dataquest. "It's a fallacy that DOS emulation programs on UNIX run poorly. If the UNIX system is using a fast-performing processor you don't notice a difference."

UNIX systems also have the reputation for being hard to install and administer, yet SCO's current software installs in 20 minutes for the tape version and 15 minutes for the CD version, according to Wadsworth. No operating system is completely hassle-free. "Systems administration on UNIX can be difficult, but no more so than Novell's NetWare," says Card. "And with DOS you can't even have a network adding another level of software that requires maintenance."

GUIs like Motif and others have given desktop UNIX software greater ease of use by shielding the powerful and complex operating system underneath. For users accustomed to Windows and other user-friendly interfaces, GUIs on UNIX systems are a requirement for adoption.

The dark horse in the desktop operating systems race is the yet-to-be-released NT. While most analysts believe NT will give desktop UNIX a run for the money, many also think Microsoft could stumble in either its delivery or presentation of this new operating system.

"NT is UNIX by any other name," says IDC's Card. "But it is new, it is late and it is not expected to ship mid-year. Microsoft has never developed an operating system before — it bought DOS. There's also a question as to whether systems people and end users are going to be comfortable with that much Microsoft control."

UNIX Sabotages Itself

One of the biggest roadblocks to UNIX penetration on the desktop comes not from an upstart operating system like NT, but from UNIX itself — all the many versions of it. "Until all the different UNIX versions run each other's binary code, it's going to be very difficult for UNIX to make the transition into the PC industry, or storm the walls of Microsoft," says Kirzner.

Some believe that such operating system incompatibilities will cost UNIX a portion of its potential turf. "UNIX could have had the desktop market 10 or 12 years ago, and then there never would have been an OS/2 or an NT," says Redmond Group's McKenzie. "Now, it's too late."

Corporate users now stock one shrink-wrapped software program that will run on all its PCs. In a desktop UNIX world, they could be asked to stock and maintain multiple application programs — all UNIX, but all different — to run under the various UNIX-branded operating systems.

Such confusion and inconvenience on both corporate and retail supply shelves could hurt the penetration of UNIX into a market that is accustomed to running DOS and Windows software from a variety of vendors on a variety of hardware. A shakeout will inevitably result as the top software and hardware vendors line up behind different versions of UNIX.

WordPerfect, for example, recently released version 5.1 for UNIX. "In the past, we have tried to be everything to everyone, but all those binaries are a nightmare to maintain," says McKinley. "If a UNIX vendor wants WordPerfect on its platform, it must support standards. Hardware manufacturers need to compete on the basis of price, performance and service — not operating system differences. It would be much easier for all of us to deal with a shrink-wrapped world."

For application software vendors, it makes sense to back established UNIX versions and those with the greatest market presence. Though SunSoft's UNIX-on-Intel products are new kids on the block, the company believes the reputation of its parent company will help attract support. "Sun has been working with application vendors for 10 years and understands what application software vendors want and need when supporting an operating system," says Snell. "We take a belligerently consistent view of our application interface."

Companies that are not so consistent may have trouble attracting backers, Snell says. "USL doesn't have an appreciation of what they need to work with application vendors. They can't, for example, change the programming interface."

And what makes the UNIX market even more complex is that hardware vendors push their own versions of desktop UNIX. IBM, for example, recently released its AIX PS/2 version 1.3 operating system. Running on Intel chips on IBM's own PS/2 line as well as computers from Compaq, AST, Dell and Tandy, the software lets users run other operating systems — like DOS and OS/2 — while supporting only one hardware platform.

Technical differences are not the only things that separate the desktop and workstation markets. To be successful, the companies pushing desktop UNIX must deal with a different set of marketing realities. "The PC and SPARC worlds have very different dynamics," admits SunSoft's Snell. "In the PC world, the margins are razor thin. Buyers will be looking for a lot of added value."

Application Possibilities

Some believe that UNIX should stick to the markets in which it has traditionally done well. "UNIX is a strong player in its niche," says McKenzie. "For process control and in scientific applications where multiuser computers are an issue, UNIX may be exactly what users need."

Others believe their UNIX-on-Intel offerings will break open the corporate market. "Some industries will have more rapid take-up than others of this new technology," says Wadsworth. "Those that are more open and dynamic, lithe the retail industry, will use desktop UNIX for a competitive advantage. Where costs are important, corporations will look at operating systems and how they can save money — and UNIX is very cost-effective."

A Competitive Playing Field

In competing for the desktop, one of the greatest strengths of UNIX may be its supporters' adherence to the idea of open systems. "The partnerships that develop around UNIX, and the open systems philosophy, really do speed innovation and standards," comments IDC's Card. "UNIX is still more portable and attracts more innovation than DOS."

SCO's Wadsworth waxes philosophical. "It's a modern world as far as computing is concerned," he says. "No one company can do it all. We look at all this activity — from Univel, SunSoft, Microsoft and so on — as adding critical mass to the high-end Intel systems."

The real winners in all this may be end-user corporations. They will reap the benefits of the competitive struggle going on today. In the future, they will be able to leverage their Intel machines with the operating system — UNIX or otherwise — that best suits their needs. Those companies will judge which partnerships provide the most fluid solutions — which partnerships may very well dance on the desktops.

Jennifer E. Beaver *is a freelance writer based in Southern California.*

Berkeley California

Reprinted with permission from Volume V, Issue 1, the February 1993 issue, of README: *The UniForum Canada Newsletter.*

This is original, written in light of the AT&T-BSDI lawsuit, and the recent trend with Sun towards System V and away from Gold Ol' BSD. (Sung to the tune "Hotel California" by the Eagles.)

In a dark dim machine room
Cool A/C in my hair
Warm smell of silicon
Rising up through the air
Up ahead in the distance
I saw a Solarian(tm) light
My kernel grew heavy, and my disk grew slim
I had to halt(8) for the night
The backup spun in the tape drive
I heard a terminal bell
And I was thinking to myself
This could be BSD or USL
Then they started a lawsuit
And they showed me the way
There were salesmen down the corridor
I thought I heard them say

Welcome to Berkeley California
Such a lovely place
Such a lovely place (backgrounded)
Such a lovely trace(1)
Plenty of jobs at Berkeley California
Any time of year
Any time of year (backgrounded)
You can find one here
You can find one here

Their code was definitely twisted
But they've got the stock market trends
They've got a lot of pretty, pretty lawyers
That they call friends
How they dance in the courtroom
See BSDI sweat
Some sue to remember
Some sue to forget

So I called up Kernighan
Please bring me ctime(3)
He said
We haven't had that tm_year since 1969
And still those functions are calling from far away
Wake up Jobs in the middle of the night
Just to hear them say

Welcome to Berkeley California
Such a lovely place
Such a lovely place (backgrounded)
Such a lovely trace(1)
They're livin' it up suing Berkeley California
What a nice surprise
What a nice surprise (backgrounded)
Bring your alibis

Windows NT a dreaming
Pink OS on ice
And they said
We are all just prisoners here
Of a marketing device
And in the judges' chambers
They gathered for the feast
They diff(1)'d the source code listings
But they can't kill -9 the beast
Last thing I remember
I was restore(8)'ing | more(1)
I had to find the soft link back to the path I was before sleep(3) said the pagedaemon
We are programmed to recv(2)
You can swap out any time you like
But you can never leave(1)

[substitute whirring of disk and tape drives for guitar solo]

Written by ***David Barr*** <barr@pop.psu.edu> *and* ***Ken Hornstein*** <kenh@physci.psu.edu> *and a little help from* ***Greg Nagy*** <nagy@cs.psu.edu> *and thanks to the lyrics archive at* cs.uwp.edu.

Coming Up

Meeting:
We won't be meeting in July or August. The next meeting is scheduled for the evening of Tuesday, September 14. Meeting location will be given in the September newsletter. The topic for that meeting is still to be announced, but will hopefully be something big.

Got any ideas for meeting topics? Any particular speaker or company you'd like to see at one of our meetings? Just let our meeting coordinator, Paul Hope, know. You can e-mail him at <phope@muug.mb.ca>.

Newsletter:
I'm still waiting for some long-ago promised articles, including the long awaited part 2 on UUCP setup and configuration. September will be here sooner than we think, and I'll really need lots of new material, especially shorter articles – half a page to one page. Monsieur Ex has also let me know that his mail-box is empty most of the time, and so he's starting to feel unwanted – please submit your questions to the old guy via e-mail to <m-ex@muug.mb.ca> or by FAX to the MUUG Lines editor. He'll love you for it!

SIG Sideline

By Bary Finch, SIG Coordinator

Welcome to a new addition to the MUUG newsletter. This column will be used to share information on the Special Interest Groups (SIGs) that have been formed within the MUUG membership.

To date, our initial success was in holding the first meeting of a SIG which combines interests in LINUX, as well as System Administration. Our meeting was held Tuesday, May 4, with an attendance of a dozen MUUG members.

The main purpose of this initial meeting was to establish what the purpose of the SIG will be, and how it will be run. The group decided that this SIG would exist to exchange ideas thru open discussion, and that a round table forum would be best. This will be a more in depth version of the round table that is held at the beginning of each regular MUUG meeting.

The topics to be discussed would typically be kept to the realm of System Administration and LINUX. These two topics can easily overlap as most of the System Administration topics are able to be implemented in LINUX.

To this end, we will attempt to have a PC running LINUX at many of the SIG meetings. This will allow some "hands on" use of the UNIX environment, for either LINUX or System Administration functions.

An example of some of the topics of interest to the group are: uucp, networking, working with users, installing LINUX, mail, X Window, and setting up peripherals like terminals, printers, and modems. This all culminates in a major interest expressed in learning how to connect to MONA to poll for mail. It will take a while before we cover all the topics needed to attain the mail polling, but it'll be fun getting there.

For managing the SIG, I volunteered to be the SIG coordinator. This role will be to ensure a meeting place is booked, and you are informed of that meeting place. In addition the coordinator will arrange for any equipment that may be available for the meetings.

The group also decided the best date for SIG meetings would be the third Tuesday of each month, at 7:30 p.m. This will allow a verbal update by the SIG coordinator at the MUUG general meeting the week prior to the SIG meeting, to confirm the meeting place, and topic if appropriate.

For example, there will also be some SIG meetings with a more formal presentation scheduled, as the group decides on a specific topic they would like to see in more depth. Here the coordinator would arrange for the presenter and the facilities needed for any presentations.

Our next meeting is scheduled for Tuesday, June 15. As of the writing of this article the location is to be determined. An announcement will be made at the MUUG general meeting.

There is no specific topic to be presented at this meeting, so come on out and bring your questions or curiosities on System Administration or LINUX.

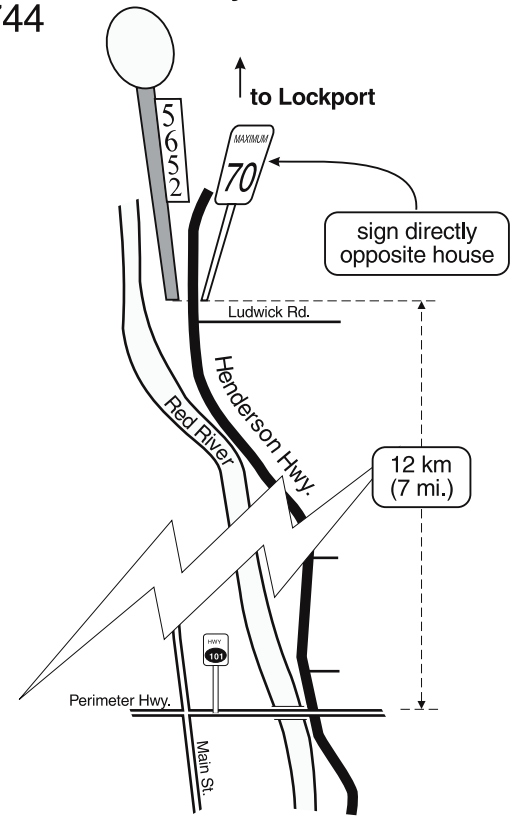
If you have any questions you can e-mail me at <bfinch@muug.mb.ca>, or call me at work: 934-2723.

Hope to see you there!

The Event of the Season

MUUG June BBQ

Tuesday, June 8, 6:30 PM

- RSVP to Paul Hope by June 4, noon, at the latest. E-mail to <phope@muug.mb.ca> is prefered. Phone if e-mail is not possible.
- Spouses, significant others, friends, and family are welcome to attend.
- Bring your own lawn chairs, entrées (such as meat for the BBQ), and alcoholic beverages.
- We will provide the salads, chips, mix (soft drinks), condiments, plates, etc.
- Be prepared for lively conversations, and daring feats of gastronomic excess!
- Shop talk will be permitted, but you might get some dirty looks from the non-computer types present.

Paul Hope
5652 Henderson Hwy.
661-2744