$2.50

MUUGlines

December 1998 Volume 11, Number 4

December 8: Play Time!

This month, we will be examining the state of the art in Unix and Linux games. That's right, we're going to have even more fun than usual at the next meeting! Kevin McGregor will be presenting a whirlwind tour of the best-of-breed games available for your home (or office!) Unix/Linux system.

There will be some old stand-bys and classics including X-MAME, the Multi-Arcade Machine Emulator, plus Doom and Quake, and a review of some of the more sophisticated game console emulators like the Atari 2600 VCS. Seriously, work is under way on Sony Playstation, NES, SNES, and Nintendo 64, and we'll see how these projects are doing. Also to be shown are strategy games like FreeCiv (a Civilization II derivative) and some of the classics. Don't miss this exciting attempt by Kevin to cram all this into one short presentation.

As usual, we will also have a round-table discussion, in which anyone can raise questions regarding their experiences (or lack thereof) with all things Unix. We realize that it can be a little intimidating, but please be assured that no question is too easy (or "dumb")!

Please note our meeting location: IBM Canada's offices in the TD Centre, at the corner of Portage and Main. We gather in the lobby on the main floor - please try to be there by about 7:15 PM. Steve Moffat will then take us up to the meeting room just before the meeting starts at 7:30. Please don't be late, or you may not get in.

Parking is available either in the parkade behind the TD building, off Albert Street, or in the ground level lot just north of the TD building. Entrance to the lot is from Albert Street, behind the parkade. Either way, parking is a $1.25 flat rate for the evening. You must purchase your ticket from a dispenser, so make sure you've got exact change - a loonie and a quarter, or 5 quarters.

Review: PowerQuest's PartitionMagic 4.0

By Gilbert Detillieux

A sticker on the front of the box said it: "New in 4.0 - Linux Support." (OK, it said other things too, but my eyes focused on "Linux.") Quickly scanning the highlights on the back of the box, I came to a line near the bottom that clarified things a bit: "Complete support for FAT, FAT32, NTFS, HPFS and Linux ext2 file systems - Enjoy comprehensive support no matter what file system you are using." I had heard for quite a while that Linux support was coming, but it was encouraging to actually see it in print, on the front of the box no less!

You're dying to know: Does it work? Yes! I've used it to move ext2 partitions, as well as to increase and decrease them in size. In each case, it worked flawlessly. Well, almost flawlessly, anyway, but as you'll see, the problems I did encounter can't be blamed on PartitionMagic. It did what it was supposed to do, and did it well.

Installing the Software

A little bright yellow sheet inserted in the box contained some important, last-minute instructions. This included the usual sage advice - a warning about always backing up your system before using PartitionMagic on it, which I chose to ignore for now. There were also instructions on how to run PartitionMagic on systems with only OS/2, Linux, or Windows NT 3.51 installed, i.e. on systems where you wouldn't be able to do a native install and run of the software.

The instructions for Linux just referred users to the PQREADME.NOW file in the LINUX subdirectory on the CD. This file encouraged users to run a supplied shell script, PQINST.SH, which they suggested be copied to your system, so it could be made executable. (I guess the authors didn't realize that you can quite readily run shell scripts without having the execute bits set on them.) Looking through the script proved to be my biggest disappointment with the whole package. The whole thing had the feel of a DOS batch file hastily translated to Bash shell syntax. The script did some very un-UNIX-like things, like creating a temporary directory right in the root directory.

Fortunately, the script can easily be skipped, since the procedure basically boils down to creating two floppies from image files, which most Linux users should be able to handle quite readily with a couple "dd" or "cp" commands, once they've mounted the CD:

```
cp /mnt/cdrom/linux/bootflpy.dat /dev/fd0
cp /mnt/cdrom/linux/dataflpy.dat /dev/fd0
```

The look of the script made me wonder for a while about how well they had done of the handling of Linux partitions in the program itself. Fortunately, the program itself is much better.

The Diskette Version

The first floppy image is a bootable system (a minimal Caldera OpenDOS 7.01, which they were nice enough to include, which saves you the trouble of hacking together your own bootable disk) with the DOS mode PartitionMagic 4.0 executable and overlay files. The second floppy image contains the PARTINFO.EXE program, and help files, so you can often do without it. I was impressed that even with the new features in 4.0, and the GUI, the whole program still fits handily on a single 1.44 MB diskette! Given the current state of most "bloatware" these days, that's quite impressive. PowerQuest refers to this two-disk set as "rescue disks," but they may be all you need for normal use of the program.

With version 3.0, a text-only interface version of the program, called PQMAGICT.EXE, was included for the purpose of using it on a single "rescue" floppy. The GUI version was only available when you did the normal install onto a DOS or Windows partition on your hard disk, possibly because this version was too big to run practically on floppies. This text-only interface seems to have been abandoned in 4.0, although the manual still refers to it in Appendix B. No matter, the GUI version is much nicer to use, and fits on the one floppy. The only disadvantage to this over the old text-only version is the slightly longer loading time.

Once loaded, another difference became apparent between this DOS GUI version and the one shown in the screen shots on the box. The much hyped Wizard functionality is not included in the DOS GUI version. (I'll talk more about that later.) The DOS GUI will be familiar to users of PartitionMagic 3.0, and contains all the basic functions you're likely to need.

Working with Linux Partitions

As promised, PartitionMagic recognized my Linux partitions, and the summary partition information on the main screen showed not only the type and size of the partitions (previous versions did that much), but also the amount of used and free space for each.

There were two odd things I noticed: First, swap partitions are shown as having no space used, and all of it free. I suppose that's true enough, since the only space permanently allocated is the first block, which contains the block map. Although I didn't test this thoroughly, I imagine that swap partitions can be resized though pretty much their full range, from pathologically minimal to the 128 MB maximum (currently imposed by the block map's layout).

Second, two of my ext2 partitions which were over 80% full, according to Linux's "df" command, were shown as having no free space! Granted, it would probably be unwise to try and shrink a partition as full as that, but it wasn't clear why there was this discrepancy between the numbers reported by "df" and PartitionMagic. Is it just for safety, or is there something very odd about the way PartitionMagic calculates and/or displays the used/free space? Fortunately, for ext2 partitions with sufficient free space (those I wanted to try resizing), the numbers reported seemed to concur with those from "df."

Resizing an ext2 partition is done in the same way as for other partition types. You click on the partition you want, click on the Resize icon (or select Operations/Resize from the menus), then drag the handle at either end of the graphical representation of the partition in the dialog box (or enter the desired size in the appropriate text field). You can batch up a number of such changes, selecting any of the applicable partitions, shrinking, growing or moving them, before committing to anything. You then click on other icons or buttons to apply the changes or discard them.

My initial nervousness when I clicked the Apply button soon passed, as I saw the progress display as the operations proceeded. The ext2 partition is first checked, using the same sort of 5-phase check that is familiar to users of the UNIX/Linux "fsck" program. If the partition passes the check, the resizing and moving operations can then proceed. Enlarging an ext2 partition is relatively straightforward and quick. Shrinking one takes a bit more work, since data blocks and inodes will often have to be shuffled around, and all references to the affected inodes then have to be found in the various directories and re-mapped. PartitionMagic did all of this without a hiccup, and reported each step as it was going along. Finally, it does another 5-phase check to verify the result.

Gotcha!

Now for a couple notes of caution: First, if you resize your root (or /boot) partition and count on LILO to load your Linux kernel, you could be in for a shock on your next reboot. LILO doesn't take kindly to having any of the data to which it points moved in any way. Make sure you've got a bootable kernel on floppy (such as a Red Hat rescue disk set, or better yet, the appropriate boot floppy created specifically for your installed system) before you start, since it can be quite difficult to recover after the fact otherwise.

Second, heed PowerQuest's sage advice, and backup your data first. This may seem like overkill and a waste of effort, particularly once you develop a sense of confidence with PartitionMagic. However, despite the apparent reliability of the product, there are a number of factors which could result in problems, ranging from power glitches, to hardware problems, to various software bugs. (How much do you trust DOS or Windows to not crash on you?)

I had a really close call while putting the Windows 95 version of the program through its paces. I had batched up changes to 2 partitions (shrinking one so I could move down and expand the other), had committed to this, and had watched PartitionMagic fly through all of the changes, only to see a small dialog box pop up at the end, reporting a disk read error. Fortunately, this happened during the final phase of the partition check, after the last of the changes to the partitions, so I felt reasonably confident that no data had been lost. Rebooting and checking each partition confirmed this. It's not clear what was to blame for the read error - the disk drive itself, the IDE controller, some other piece of hardware, PartitionMagic itself, or Windows 95. (I have my suspicions, but I must admit that it's based more on prejudice than on any solid evidence!) The moral of the story, though, is that you never know what might happen - had the read error happened midway through a move or resize operation, I wouldn't have been so lucky - so having a current backup is always a good idea.

Other Operations

In addition to creating, deleting, moving, and resizing partitions, PartitionMagic supports a number of other operations. However, many of these are specific to FAT-style partitions. What else can it do with Linux ext2 and swap partitions? Not much. There is a "Check" operation, but I found it rather uninformative for ext2 partitions. Rather than reporting the various phases (as was done during the checks preceding and following operations that changed an ext2 partition), a terse message and a single progress bar were all that indicated that a check was being done. After the check, a summary dialog box indicated that no errors were detected, however, it was unclear exactly what had been checked. (Was this the same 5-phase check, or something simpler? What sort of errors would it be able to detect and report? This wasn't clear from the messages I saw.)

The "Info" operation was also rather minimal when it came to Linux partitions, showing only the partition table information itself. This same operation on FAT partitions displays a dialog box with four tabs: Disk Usage, Cluster Waste, Partition Info, and FAT Info. It seems that some of this could have also been done for ext2 partitions; for example, fragmentation information and inode information could have been shown, and at the very least a disk usage report could be provided. (They do compute and display some of that in the summary partition information on the main screen.)

Off to See the Wizards...

The Windows 95 and NT native versions of the program contain the same basic functionality as the DOS GUI version, but the interface is augmented with some fancier graphics, most of which are icons used to invoke Wizards. These Wizards are intended to help automate certain tasks, or make recommendations about how to make better use of partitions.

I have to admit that I'm not crazy about Wizards in general, preferring to have more control over operations myself. I also have to admit that I didn't spend a lot of time testing the PartitionMagic Wizards, since I was limited in what I could do on my test system, which contained only a single disk with four primary partitions already allocated, most of which contained important data. Because of that, I wasn't able to test the "Create New Partition" Wizard at all, and didn't commit to any of the recommended changes made by any of the Wizards. So, take the following with a grain of salt.

Some of the Wizards seem to be oriented mostly toward FAT partitions, such as the "Analyze and Recommend" and the "Reclaim Wasted Space" Wizards. The only one that seemed like it might be particularly useful to Linux users was the "Redistribute Free Space" Wizard. However, it wasn't at all clear how this thing is best used, and there were some apparent inconsistencies.

When I first ran it, I had no space that was unallocated to partitions, but had free space in a number of partitions. The Wizard did some quick checks, then showed a dialog box with its recommended changes; but the graphical representations of the "before" and "after" layout seemed the same to me, and there was nothing else to go on (such as actual numbers for the various partition sizes). After freeing some space from an ext2 partition at the end of the disk, The Wizard once again came up with a dialog with no really apparent changes; unallocated free space was still clustered after the last partition in the "after" layout, and the various partitions didn't seem any different in size. Freeing space from an initial FAT partition yielded different recommendations; this time, the various partitions seemed to be resized, and most - but not all - of the unallocated free space seemed to have been used to increase partitions. I'm not sure what accounts for these differences, nor even how this Wizards recommendations would be helpful in reallocating space.

Although my tests of the Wizards were not very complete, the value they add - particularly for Linux users - did not seem clear to me. Since the DOS version contains all the basic functionality, and only lacks the Wizards, Linux users might be quite content to use that version and save some disk space. (A minimal installation under Windows 95 was about 11 MB. That's quite an increase from a couple floppies for the DOS version.)

Licensing

It should be noted that PowerQuest provides a computer-specific license with PartitionMagic, which means that the software can only be used on one specific computer. Once it's been used on that computer, you are not authorized to use it on any other computer. (One wonders what could be done if that computer were to die - or be sold, since the license also states that you can't sell or otherwise transfer the software to any other person.) While I can understand their desire to impose more than the usual restrictions on the software's use (since you could use it on any number of machines, otherwise, as long as it wasn't permanently installed on any of them), the current licensing terms seem unreasonably restrictive to me.

PowerQuest does offer something called a Professional License, as well as a Multiple Pack License, which can be purchased separately by contacting PowerQuest by phone or e-mail. The specific terms of these licenses weren't clearly spelled out, nor were costs indicated.

Conclusions

If you've never tried PartitionMagic before, I strongly recommend it. If you're using version 3.0, the upgrade is worth it. Although the program's support for Linux doesn't seem to be quite as strong as for the more commonly used

DOS and Windows operating systems, and although it could use some improvements in certain areas, PartitionMagic as it now stands provides Linux users with many of the disk management functions that are currently lacking in Linux itself.

Regardless of whether you choose to install PartitionMagic 4.0 for Windows 95, NT, or DOS, this version's good support for Linux partitions makes it an almost indispensable tool for Linux users.

PartitionMagic 4.0
US$69.95 Suggested Retail Price
(Computer-specific license)
PowerQuest Corporation
P.O. Box 1911, Orem UT 84059-1911 USA
Sales: (800) 379-2566
International Sales: (801) 437-8900
E-mail: sales@powerquest.com
Home page: www.powerquest.com

LinuxWorld Conference & Expo

FRAMINGHAM, MA, November 23, 1998 – IDG World Expo announced today its partnership with key Linux influencers who will be attending, presenting and exhibiting at the upcoming LinuxWorld Conference & Expo, March 1 – 4, 1999 at the San Jose Convention Center in San Jose, CA. Dr. Michael Cowpland, President and CEO, Corel Corporation, Mark Jarvis, Senior Vice President of World Wide Marketing, Oracle and Linus Torvalds, Creator of Linux, the open source operating system, will be the featured keynote speakers on Tuesday, March 2. Keynotes are open to all registered attendees.

"Having earned its reputation as a very efficient and fast-performing system making inroads as a server operating system, I am pleased to see IDG get so deeply involved in the Linux community with this new global event and online magazine. The audience of Linux professionals will be well served by these new initiatives," said Linus Torvalds.

"We fully expect this to be a landmark event for IDG as well as the Linux community due to the support of our advisory council," said Charlie Greco, President, IDG World Expo. The council includes Larry Augustin, President and CEO of VA Research, Inc., Scott McNeil, President of S.u.S.E Inc., Bob Young, President and CEO of Red Hat Software, Inc., Jon "Maddog" Hall, Director of Linux International, and Nick Petreley, Editor-In-Chief of LinuxWorld Magazine.

The show's official Web site offers valuable information including facts about respected industry leaders becoming Linux partners and research that strongly indicates sales are climbing for businesses using this revolutionary operating system. It also illustrates the key industry service providers and solution integrators that will be demonstrating all of the above on the exhibit floor. Additional information includes descriptions on the over 40 conference sessions and 13 tutorials exploring topics like Linux security, Advanced Perl Programming, and GNOME just to name a few. To register or inquire about exhibiting at LinuxWorld Conference & Expo, and learn about today's hottest and fastest growing operating system, visit www.linuxworldexpo.com.

IDG's LinuxWorld Conference & Expo, sponsored by LinuxWorld Magazine, Linux Journal, InfoWorld, Macworld, Network World and Sys Admin, is expected to draw over 8,000 independent and corporate Linux developers and business professionals.

For more information, please visit IDG's Web site at www.idg.com, or contact Caren Wagner, TSI for IDG Account Supervisor at (212) 696-2000 ext. 266 (wagnerc@tsipr.com) or Kristin DeAngelis, IDG World Expo Marketing Manager at (508) 424-4823 (kristin_deangelis@idg.com).

Sun Statement Re: Sun v Microsoft

On November 17, the court found that Sun Microsystems, Inc. is likely to prevail on the merits and granted Sun's request for injunction.

The court ordered that if Microsoft ships products that include the Java™ technology, it must change those products within 90 days to address their failure to pass Sun's compatibility test suite.

"We're extremely pleased that the court has granted our request for injunction," said Michael Morris, vice president and general counsel, Sun Microsystems, Inc.

"While this case proceeds through the court, we'll continue to use our enormous energy in the marketplace — as will the other companies that are the cornerstones of the Java technology industry — to deliver high performing Java technology that outperforms Microsoft's incompatible technology," said Alan Baratz, president of Java Software at Sun Microsystems, Inc. "We'll continue to deliver technologies such as Java Plug-In that give developers and users the choice to replace Microsoft's polluted technology with Sun's compatible Java technology."

MUUG Contact Information

To contact the MUUG board for membership information or anything else, send e-mail to board@muug.mb.ca. We have a Web presence as well, at http://www.muug.mb.ca/, where you can find all kinds of information, including details of upcoming and past meetings and presentations and references related to them. E-mail the editor at editor@muug.mb.ca.