Software Review

PartitionMagic 4.0 *By Chris Taylor*

Last spring, Harald Freise wrote a review of PartitionMagic 3.0. Well, the folks at PowerQuest have not been sitting idle since then. Last fall, they released version 4.0 of this terrific program.

Powerful

PartitionMagic is the most advanced program available for manipulating partitions on your hard disks. It supports FAT, FAT32, NTFS, HPFS, Linux Ext2, and Linux Swap partitions. It can create any of these partitions and resize them without data loss. It can convert back and forth between FAT and FAT32 as well as convert one-way from FAT to NTFS (the actual conversion is done by the NT utility Convert) and FAT to HPFS. Additionally, you can copy partitions which is a great way to upgrade from a smaller to larger disk or to create a backup.

Previous versions of PartitionMagic were DOS executables dressed up to look like Windows apps. This gave complete control to PartitionMagic to do whatever it wanted without worrying about files being in use by the operating system. Version 4.0 adds native Windows 95/98 and NT Workstation versions. PartitionMagic analyzes all the partitions you are trying to modify. If there are no files in use, it does the modifications within the native application. Otherwise, it queues up a batch job and then runs it either from MS-DOS mode (for Windows 95/98) or before the full operating system loads on the next boot (in the case of NT.)

PartitionMagic is not intended for use on NT Server, although the box simply states "Windows 3.x, 95, 98, NT or DOS 5.0 or later." Outside of a single sentence on page xviii in the user manual, the only place I found reference to PartitionMagic not working on NT Server was in angry complaints in the support forums at PowerQuest. ServerMagic, a new (much more expensive) program from PowerQuest, is specifically designed for NT Server.

INSIDE

Next meeting: **WEDNESDAY, February 3rd, 1999**

Psion Handheld Computer

Ultra-portable computers have recently mesmerized users with their versatility and power. Palm computers are prized for their compactness; however, everyone does not embrace their lack of a keyboard. Current hand-held computers (with keyboards) usually employ Windows CE as the operating system.

modem and a PC Card (formerly PCMCIA) adaptor. Two AA penlight cells normally provide 35-40 hours of use although an AC power supply is available as an option.

◇◇◇

It's time for a change! At our February meeting, come and see an attractive alternate: the Psion Series 5 that PC Magazine awarded an Editor's Choice in March 1998. While less well known perhaps than its Windows CE cousins it uses a more powerful, proprietary, true multi-tasking, operating system complete with its own programming language. The Psion can synchronize its data with any Windows 9x or NT machine.

What can it do? Word processing, spreadsheets, personal information management, calculator, sketch pad and even a voice recorder are standard features! Unlike many hand-helds, it has adequate key spacing to type without hitting multiple keys. The user interface employs icons and a 640 x 240 backlit touch-screen. Equipped with 8 MB of RAM, it accepts flash cards to increase on-board memory. Other accessories include a
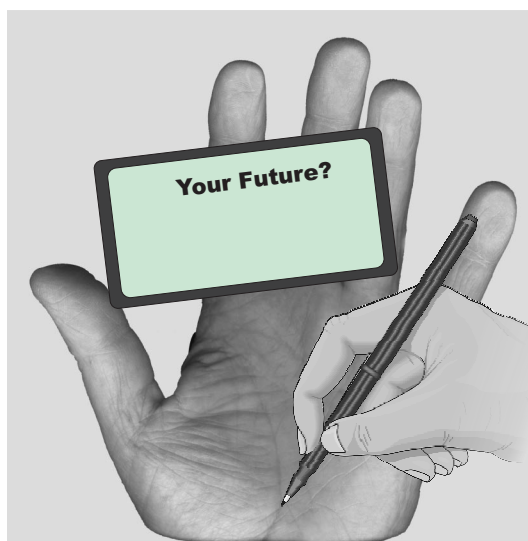
Calendar

Meetings	Date	Time and venue
OPCUG General Meeting	February 3rd : Psion Handheld Computer See Coming up article above. March 3rd: To be announced	7:30 p.m. - National Museum of Science and Technology, 1867 St. Laurent Blvd.
Ottawa Paradox Users Group	Third Thursday of each month	6:15 pm - Inly Systems, 1221a Cyrville Rd.
FOX Pro/Developers SIG	To be announced	7:15 pm - Sir Jean Talon Building Conference room, Tunney's Pasture, Holland Ave. (north of Scott St.)
PIG SIG (or is it WING SIG?)	February 3rd After all the other SIG's - All questions, be they serious or not	"Good Times" cafe at Shoppers City West, Baseline and Woodroffe

President's Report—1998 in Review *by Bert Schopf*

1998 was an eventful year for the OPCUG; a year in which we saw much activity and made a lot of connections. It might be said that the past year was one of "getting people connected."

The biggest change was the implementation of PUB II, our club's communications server. PUB II was overhauled to include Internet access at our new permanent "home" (http://opcug.ottawa.com). Thanks to the devotion of our sysop and web developers, people can now connect to each other through the Internet, while maintaining dial-up access. Care was taken to maintain essential member services (messaging, notices, file downloads) and enhance the PUB with new features like the listserves and statistics reports. The Internet access route has opened our doors to a much wider potential audience.

Our club also enjoyed our monthly bricks-and-mortar meeting place through a strategic partnership with the National Museum of Science and Technology. Special thanks are extended to Paula Kirton and Rita Signorini of the Museum for their hospitality.

The club newsletter continues to keep us informed of what's going on and what's happening. Kudos to Dunc Petrie (editor), Jean Vaumoron (layout), and all who contributed articles. We're always looking for content; if you have something to say, put it in writing and submit it! After all, it's YOUR newsletter.

Feedback I've received indicates that people are happy with the content of the past year's General Meetings. We've had guest presenters from developers of exciting new hardware and software (Centrepoint, Adobe, Corel, Vorton, Microsoft), informed users (HTML/Javascript, Linux), and from within our own membership (DTP SIG, Sysop). We even had a little fun and games with Bloom Microtech before the holidays! Thanks to all who took the time to prepare these presentations for us.

The SIGs within the club have morphed in 1998. We witnessed the rebirth of the Internet SIG and a successful merger with another OS/2 group. If you feel there is a void in our group's Special Interest Groups and are willing to coordinate a SIG, please contact one of the Board of Directors.

We continue to reach out to the community at large. OPCUG held our perennial public swap meet in November and staffed an information booth for the Museum's swap meet just last month. Volunteers also worked at the Computer Fair held at the Nepean Sportsplex to spread the word of "Users Helping Users." We continue to alert the media of our upcoming events.

Sometimes we connect with each other informally—the WING SIG (cold beverages and chicken wings) is a good place to meet after the meeting to chat and chew. I sometimes think that the most valuable information I get comes from these get-togethers.

I would be remiss if I didn't thank the long list of members who tirelessly gave their time and skills to keep the OPCUG running. We all know the familiar faces that show up at every meeting to carry out the often thankless tasks of checking the facilities, doing the finances and keeping tabs of memberships and meeting minutes. A huge thank-you to everyone who has exemplified the spirit of the club by putting in some effort and saying "I'll help."

As the much-anticipated (feared?) Y2K looms on the horizon, we have much to look forward to in the coming year. I sincerely hope that the OPCUG continues to thrive and help people "get connected."

◇◇◇

Partition Magic 4.0 (*continued from page 1*)

One of the nice additions to version 4.0 is the ability to queue multiple operations and then perform them all at once. Previous versions did not allow this, which sometimes meant lengthy waits while one operation finished before you could carry on with another. Another benefit of queuing operations is that you can set up multiple changes and see what the overall effect will be before committing the changes.

Easy to use

The user interface is very clean and uncluttered. You can clearly see how the partitions are laid out on your disk and obtain detailed information on things like cluster sizes, lost disk space due to slack space, technical information on the file system, and more. Resizing partitions is a simple operation of dragging graphical sliders. Once you are satisfied with the modifications a click on the Apply button starts the actual modifications.

There are wizards to create new partitions, distribute free space among partitions, reclaim space (by converting to FAT32 and/or reducing the cluster size), prepare to install an additional operating system, and recommend changes. While they may be of use to a real novice, they are not

---

likely to be of use to most people who will be buying this product. I certainly recommend that people just roll up their sleeves and do it themselves. You have much better control over things when they are done manually and the choices made by the wizards on your behalf are questionable.

Freebies

PowerQuest includes an application called MagicMover that is designed to move applications from one partition to another. It scans all your partitions to gain information about applications and then allows you to select an app from either the Start Menu or your Desktop; alternately, you can browse your disks to find it. Once you select it and choose a destination drive, MagicMover will look in Autoexec.bat, Config.sys, any INI file in the Windows directory, the Windows Registry, Microsoft STF setup files, and shortcuts for any references to the path to the application; then it modifies them to point to the new path. Next, it copies the files in the source directory to the destination directory and deletes the originals.

MagicMover moves entire directories and their subdirectories, not just single applications. If you installed multiple programs to a single directory (perhaps a utility directory that contains a number of small programs, each with one or two related files) MagicMover will move all the applications in that directory. I never used MagicMover to actually move any applications. During its analysis phase and before I selected an application to move, the Microsoft Office 2000 Installer popped up multiple times and wanted the Office 2000 CD-ROM. I have no idea what triggered it or what it modified in my installation—scary! Forgive me, but I am familiar enough with Windows to think that the best approach is to un-install the application and re-install it in the new location.

One reason for creating multiple partitions is to support multiple operating systems. In some cases, you can have multiple operating systems supported on a single partition with no add-on product required. For example, you can install Windows NT, Windows 95, Windows 3.1 and DOS all on a single partition with no need for additional software to support it. But in many cases, it is safer and simpler to separate your operating systems onto different partitions and not allow them to see each other. BootMagic is a boot manager that comes with PartitionMagic. It provides a somewhat garish mouse- and keyboard-enabled menu on bootup that allows you to select from multiple operating systems. It automatically makes the appropriate partition active and then boots from the operating system installed there.

When adding and deleting partitions, you can end up with existing partitions changing drive letter designations. DriveMapper, an included program, is designed to change drive letter references in shortcuts, INI files, and the Registry so that your applications continue to run. But be aware: the support forums at PowerQuest have messages from upset users who had Registry and ini file entries like "file:" changed to "filf:" when DriveMapper changed references of drive E: to F:. According to PowerQuest, this bug is squashed in version 4.01—due "real soon."

If you are using NT 4 with SP4 and NTFS partitions, wait for the 4.01 PartitionMagic patch. SP4 makes numerous changes to NTFS and in some cases, these can prevent PartitionMagic from working. If you are modifying a partition that has no open files, you should be fine, but if the program has to re-boot and do its work before the OS loads, you are likely to run into a failure.

In an age where Windows help files seem the rule and printed manuals are reduced to booklets that tell you how to install the program, PartitionMagic offers a refreshing change. The 150-page manual is clear and complete, although I seem to recall that the version 3.0 manual had more complete background technical information on disks and partitioning. There is an additional 50-page printed manual for BootMagic.

Conclusions

I tested PartitionMagic on Windows 98 with a 6.4GB hard disk partitioned into two FAT32 partitions and did multiple resizes with no problems. I also tested it on NT4 SP3 with a 4.1GB disk partitioned into two NTFS partitions. I performed several resizes there as well. I am not overly impressed with the add-on programs DriveMapper and MagicMover; I think that most people should just reinstall affected applications. BootMagic seems serviceable for those who need a boot manager to handle multiple operating systems. PartitionMagic shines at its basic task of resizing partitions with an absolute minimum of fuss and bother.
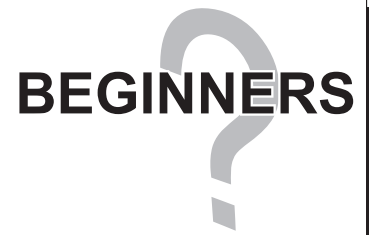
You should be able to find PartitionMagic around town for about $70. You can also order it from PowerQuest at the User Group discount price of US$30. The kicker is they add on US$10 for shipping, which brings the cost to about CAN$60. If you want to go this route, you can do so at http://www.ugr.com/order.html. You need to enter our User Group Code, which is UGFLYER.

✧✧✧

Training Review

Hightech Training Company

[Editor's Note: I am not associated with this company or its principals. I wrote this article since I believe that this is a novel method for self-education in tune with today's hectic pace.]

The New Year is a recurring theme in this issue. I had an opportunity to "have a look" and "test the waters" of this company. Its niche is computer-assisted training using a "do-it-yourself, proceed-at-your-own-pace" approach. The study material is provided on interactive CD-ROM; each student decides his/her own pace of study. Apart from the computer sessions, dedicated students will need to practice what they have learned at home or office before returning to advance to the next module.

The array of topics is impressive (and has likely expanded since my brief visit); there were over 60 choices that included: operating systems (Windows 95, NT), applications, Internet (theory of, browsers, HTML), programming (Visual Basic, C, C++), image editing (Photoshop) and MCSE training. The knowledge levels ranged from beginner to advanced.

While there, I "demo'd" a portion of a course on HTML coding. This approach is deceiving. On one hand, it is a relaxed environment with state-of-the-art equipment; on the other, large amounts of knowledge are provided in a short period of time. Yes, eager students will have homework. Each module offers a review quiz and an offer to review less certain topics.

As a product of the "old school" I can assure you that my education was never like this! Have a look at the company's web site: www.hightechtraining.net.

✧✧✧

Hardware Update

Not another bus?

What is your favourite bus? Recently, EIDE has produced Ultra (presumably to maintain the vocabulary race with SCSI). Then there is ISA, PCI, AGP and the "universal" USB. Tired of the acronyms? Want it all to end? Not just yet… allow me to introduce—maybe—the new kid on the block: IEEE 1394 or Firewire. It has many similarities with USB; however, it is a lot faster.

Features

● faster than USB—currently 100-200 Megabits per second (Mbps) versus USB's 12 Mbps

● a high-speed (relative to its predecessors like serial, parallel or USB) digital interface for both data and networking

● up to 63 devices, daisy chained (neglecting cable length, practicality and power requirements)

● maximum cable length (of the daisy chain) up to four meters (optical cables are under consideration)

● no hubs necessary (Practically, longer daisy chains and additional power for peripherals may necessitate a rethink.)

● power for peripherals is included (up to 1.5 amps versus USB's 0.5 amps)

● minimal consumer of system resources

● hot-pluggable and configurable-on-the-fly

● data transfers possible without a host computer

Firewire, developed initially by Apple Computers, was intended as an engineering solution to replace the

Continued on next page

Not another bus? *(Continued)*

plethora of bus standards (much less a problem in the Macintosh world than for PCs) with a single, simple connector. A less-expensive replacement for SCSI was seen as an attractive by-product. To date, this bus basks in obscurity: digital video applications are its only credit although the transfer rates could also support colour printers, DAT audio, scanners and cable modems. The bandwidth is also suitable for mass storage devices (with BIOS support as appropriate). However, at least initially (and particularly on PC compatibles), this avenue would most likely be left to the various flavours of EIDE.

Bus Data Rate Comparison

The following values are approximations and are theoretical; however, they do provide a common basis for relative comparisons. Actual results would depend upon a variety of factors and system configurations.

• IEEE1394 (Firewire) is presently 100-200 Mbps.

• proposed IEEE1394a standard would double it to 400 Mbps. (Aside: more than 3 times 100BaseT Ethernet!)

• IEEE1394b standard under development would initially promise 800 Mbps and, incidently, more robust power supply capabilities. Future extensions advocate up to 3.2 Gbps (no guarantee of ratification).

• EIDE & UDMA offer 33 MBps (Megabytes per second or approximately 260 Mbps).

• SCSI has various flavours that range from 10 MBps (80 Mbps) to 40 MBps (320 Mbps)

• SCSI-3, the newest offering, will range from 40 MBps (320 Mbps) to 80 MBps (640 Mbps). There are proposals to achieve 160 MBps (1280 Mbps).

• USB presently offers 12 Mbps.

• The Standard Parallel Port offers only 40-300 Kbps (Kilobits per second).

• EPP/ECP Parallel Ports support transfers up to 2Mbps.

• The current Serial Port supports up to 115.2 Kbps.

• ISA Bus transfers range from 2-8.33 Mbps.

• The PCI Bus has various implementations that support up to 132 MBps.

• AGP can support up to 528 Mbps.

Both Firewire and USB have inconveniences. While Firewire can provide more power, in both cases the available power on the bus must be divided among the installed peripherals. Reasonably, beyond two or three devices, additional power would probably have to be supplied: this increases costs and complexity. Bandwidth is also a shared commodity for both protocols: the more devices on the daisy chain, the less bandwidth is accessible to each device. Given these realities, the maximum number of devices (127 for USB and 63 for Firewire) allowed under these protocols is wildly optimistic in practice.

The conclusion: Firewire has the potential to compete directly with, if not usurp, a lot of the competition. The question that is hanging: will it? Both Firewire and USB share the capabilities of the tried-and-true serial and parallel ports. Firewire also leaves USB in its dust; however, the latter is less expensive to implement and achieved mainstream status first. Microsoft provides some support for Firewire in Windows 98 and has suggested that the Windows 99 PC specification will tighten the standards for drivers. A few Compaq and Sony computers incorporate Firewire within their systems' architecture to provide video editing support. Regardless, this does not constitute mainstream acceptance.

To gain legitimacy, Firewire needs support from motherboard and chipset manufacturers: Intel is the linchpin since it has barely launched its own creation—AGP. Would it discard that and introduce Firewire onto its motherboards or perhaps blend AGP and Firewire together into a hybrid slot? Presumably, AGP has potential beyond a single, video-board dedicated slot. (Intel has suggested that studies to support AGP expansion exist; however, its marketing strategy is unknown.) After all, projected implementations of AGP bandwidths are more consistent with Firewire than PCI. While I am unversed in the engineering technicalities of motherboard design, this must introduce major design headaches. Motherboards already have: hard and floppy connectors, ISA bus slots, PCI bus slots, an AGP bus slot, USB connectors, parallel and serial ports to name a few. All these demand finite motherboard resources; still, manufacturers clamour for more of the same. Firewire

Not another bus? *(Continued)*

faces "Catch 22:" little demand means minimal manufacturer support and limited support creates little demand. This is further complicated by the clamour to prevent instant obsolescence of all the legacy hardware.

There is logic in adding integrated Firewire support initially to high-end workstations that can best utilize the bandwidth and hot-plug capabilities. "Trickle down" would not be unique to Firewire. On the other hand, could delay in reaching critical mass mean that Firewire is relegated to obscurity? To succeed, Firewire must go mainstream; it must discard its (primarily) video niche and attract the gamut of hardware manufacturers that has endorsed USB. Therein lies the dilemma: why should manufacturers tinker with success?

From a manufacturer's standpoint, the fewer the variables, the less the cost of production. Alternately expressed: "Why make 'two' when 'one' will do?"

Firewire holds potential for the future: it possesses the bandwidth that USB lacks while offering a cheap alternate to SCSI. Can it succeed? To have a hope, it must gain a respectable place. That is, it needs dedicated system integration on the motherboard (or at least be blended into the much faster AGP architecture) instead of its current PCI expansion slot status that limits bandwidth and robs the incentive to pursue enhanced specifications. Stay tuned...

✧✧✧

Book Review

Desktop Scanners Image Quality Evaluation *By Robert Gann*

Most books on scanning are "how to" texts that address all the technical issues to obtain a good scan: for example, color bit depth, resolution and image editing. Many will also discuss which type (page or flatbed), the interface, the complexities of the TWAIN driver and the capabilities of the bundled software.

Lost?

With the explosion of choices available in the retail marketplace, the answer to the question, "Which scanner should I buy?" has become hopelessly complicated. Granted, everyone assumes (logically?) that 600 pixels-per-inch resolution or 36-bit colour are "better" respectively than 300 pixels per inch or 24 bit colour. However, if the price of the superior-specification model is below that of the inferior, are you curious? Better yet, do you shake your head and walk away? Now, the more advanced texts will enter the realm of the technical and discuss the unfathomable: for example, dynamic range, dark current and non-linear response. Many are unable to link these obscure technical concepts to the quality of the scan—let alone see the difference.

No longer!

On the other hand, there is the old adage: "A picture is worth a thousand words!"
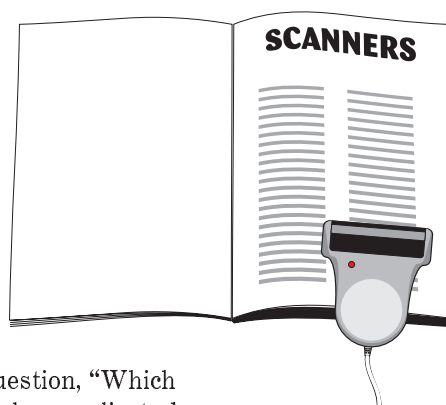
How can an end-user determine if a scanner can provide a high-quality scan? More practically, if you had just scanned an image, do you think that you could label it as good or bad? Why? What should you look for? Where?

If these questions are un-nerving and you did not understand the technical presentations in those other books, then you may want to have a look at this book (ISBN 0-13-080904-7). The author, Robert Gann, is a design engineer who is responsible for image quality specification and evaluation at Hewlett-Packard. Here, the theory is explained simply; the mathematics are presented (optional: you can understand without it) and the evidence is there to see in a number of colour image plates (and on the included CD-ROM). Not only does the author explain the theories of, for example, over-sharpening, over-compression, non-uniformity of the scanner's response and thermal noise but also he lets you see the result in the sample colour images. You know what to look for now!

Using the knowledge in this book take that newly purchased scanner for a test drive. I do hope that you got your money's worth.

✧✧✧

January prize winners *by Mark Cayer*

Robert Power and J.P. Rouleau each won a copy of the newly released, version 5.2, Red Hat LINUX distribution.

Congratulations to our winners and thanks to David Skoll of ChipWorks and the Ottawa LINUX Users' Group.

✧✧✧

Reuse, recycle

Bring your old computer magazines, books, or any other computer paraphernalia you want to GIVE AWAY to the general meetings, and leave them in the area specified. If you don't bring something, you may want to TAKE AWAY something of interest, so look in on this area. Any item left over at the end of the meeting will be sent to the… recycle bin.

✧✧✧

Fly West

The "Good Times" cafe at Shoppers City West, Baseline and Woodroffe, for chicken wings and a drink after the General meeting: may be the best and most informative SIG meeting of the evening.   See you there!

To receive the newsletter by e-mail, send the message "subscribe Newslettertxt" or "subscribe NewsletterPDF" (without quotes) to listserve@opcug.ottawa.com.

Did you know that the PDF issue was in color ?