

award winning monthly newsletter for orcopug members



But, first and foremost, you must have the means to actually play the original music. That is, a turntable for vinyl 45s and LPs, or a tape deck for cassettes. If you need these older pieces of hardware, you might take a look around Goodwill, a new and used stereo music store, in classified ads, on eBay, or in your neighbor's garage!

the vinyl records and the tapes, and 10 MB of free hard drive space for each minute of recording (not difficult to find on today's computers), completes the list of items you'll need before starting the project.

Terry added there is one thing you can't buy in stores that you should also plan to have. "Something we

Turn your *vinyl records* into CDs

by Linda Gonse

Records and tapes have become "old technology" and are fast fading into oblivion. So there is no better way to preserve your favorite music on them than to convert your vinyl and tape collections to CD. And, there is no better time to do that than now. The process has become both easy and inexpensive.

At our April 11 meeting, Terry Currier will demonstrate how you can do it. Plus, he can recommend equipment and software for successful transfers, and explain how you can get the best quality sound from your old media onto the CDs.

The bottom line is, to convert vinyl to CDs, you need a computer with a sound card, a CD burner to write to audio CDs, a tape deck or turntable, appropriate cables, and the right software.

Second, you need an amplifier to hook these up through a stereo, because most turntables require amplification.

Next, you need a cable that converts the two "Audio Out" jacks from the stereo so that they will fit into the sound card connection in your computer.

Software that rips the music from

never have enough of — time."

Terry Currier, Winners User Group, Fountain Valley, has been a frequent reviewer whose articles appear in user group newsletters around the world. He provides varied and interesting presentations, and has been the guiding hand behind the SWUG webpage contest judging for several years.

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next meeting: tuesday, april 11, 6:30 p.m. placencia library, placencia

With this issue, the newsletter is getting a facelift. I hope you like it.

Over the years that I've been a member of this user group, I have found that the social aspect of the group is probably the single most important reason for belonging to it.

In addition to that, I've learned a lot from other members and from the monthly presentations that feature new ideas, new software and hardware, and instructional programs.

As a newsletter editor, I'm in touch with editors from all over the United States, Canada, and Australia. This has given me a new level of understanding of the thousands of computer users that user groups represent; and of the connection to each other that our membership in APCUG provides.

Exchanging emails, I've found that the problems we face in our group regarding hardware, programs, spyware, viruses, and operating systems, etc. are universal. Everyone everywhere experiences the same problems. And, everyone is familiar with the same companies who make our favorite software programs, computer systems, and the authors of the books and magazine columns who offer computer users advice and help.

Members of our group have come and gone. Some have passed away, and some have moved away. There are others for which the answers they were looking for or their reasons for belonging weren't found and they left. But, many of the faces in our

SCENES BELOW ARE FROM OUR PAST MEETINGS AND PRESENTATIONS. WERE YOU THERE? DO YOU REMEMBER WHAT WE WERE SEEING AND DOING?



Members who stayed are still focusing on becoming acquainted with new technology, new ways of doing things, and learning whatever they can about the world of computing — even as DOS gave way to Windows, and Windows evolved and gave way to more Windows, and the Internet revolutionized computing for everyone.

In today's world, we are also seeing computers being joined by PDAs, Blackberries, cell phones, iPods, and all sorts of electronic devices. There is more available to us now than we could possibly afford, or make time to use.

So it isn't surprising that, increasingly, members of our group are finding new uses for their computers in working with digital photography, videos, image editing, and video editing.

I'm pretty sure there are many in our group who will look forward to and contribute to the new photography feature in the newsletter (see next page).

I hope that the new design and feature stir your enthusiasm as we continue using computers and learning new things, and new ways of doing them.

I'm looking forward to your photos in my email!

Linda Gonse
editor@orcopug.org



group have been seen at meetings for a decade or more.

What's that old saying, "The more things change, the more they are the same"?

YOUR FAVORITE SHOT



Titled "Yellow Flower"
San Juan Capistrano Mission – March 2005

This small flower was perfectly lit with the morning sun just falling on the flower and the background still shaded. Another ten minutes later, the sun lit up the flower and the background causing the background to be distracting. Shot with a Panasonic FZ20.

Photos and descriptions by Mike Lyons, President, ORCOPUG



Titled "Better times" New Orleans – April 2004

While walking around the French Quarter, I came across this finely preserved house that had been turned into a bed and breakfast hotel. There was such attention to detail that I just couldn't resist. Shot with an Olympus CZ2100.

Everybody has a photo that they believe is their best photo-taking effort. Or they have a shot that isn't technically great, but it is their favorite nevertheless.

We'd like to publish a member's special photo (or photos) each month in this space. Won't you please send us your photo for our next "Your Favorite Shot" page?

Submitting your photo is as easy as emailing it. Send a low resolution (approximately 125) 3" x 4" or 4" x 3" digital image to editor@orcopug.org. Please provide a short description of the photo, the story behind why you took it, or the photography trick that you used in capturing the image. We can all enjoy the photos on this page and learn something about taking photos at the same time! Photo subjects can be whatever you choose.

create pdf files for free with *cute pdf* writer

by Ira Wilsker

Adobe's "Portable Document Format," better known by its acronym "PDF" has become a near universal way to print documents to a file that can be read by virtually any computer with any operating system. Creating files in PDF is a reliable way to be sure that whoever opens the file sees it precisely as it was created, including fonts, formatting, and other characteristics of the original document. Depending on the software used to create PDF files, these files may also be secure, and resistant to unauthorized changes.

There are many utilities that can now create files in the PDF format. Originally, and arguably still the premier PDF creation product is the full version of Adobe Acrobat (the full version PDF writer), which is very popular, but rather expensive for casual use. In recent years, other products have appeared that can create files in the PDF format, including a variety of free standing PDF writers, as well as office suites with integral PDF writing capabilities. The newly released OpenOffice version 2, discussed here recently in a previous column, is available for free at www.openoffice.org, can save files in a variety of formats, including PDF without any other appliances or utilities. The new Corel "WordPerfect Office Suite X3" also includes internal PDF writing capabilities. It is rumored that the next version of Microsoft Office will do the same, as its major competitors are already providing that feature.

The most common way to create



websites:

<http://www.cutepdf.com>

<http://www.cutepdf.com/products/cutepdf/Writer.asp> — free Download

<http://www.adobe.com>

<http://www.openoffice.org>

PDF files is to have a PDF writing utility installed similar to a printer driver, making it available to almost any program that can print to a printer. Instead of printing to paper, the PDF utility is selected instead of a printer, and the PDF file is then created, just as if it was printed, retaining all formatting, graphics, fonts, and other appearance items. The PDF file thus created is then saved in the same means as any other file, and can be used in any

appropriate way. Adobe (www.adobe.com) makes a free PDF reader that is available for almost all operating systems and computer languages. This widespread universal availability has made the Adobe Acrobat reader the ubiquitous PDF reader, currently installed on almost all modern computers.

Since the PDF writing utility appears as a printer, almost any type of file that can be printed can be created and saved in the PDF format. It should be noted that unless other specialized and premium PDF writing utilities are installed and used, files created and saved in PDF format are nearly impossible to change or alter, and are effectively "read only". This fact is both a curse and a blessing; it is a curse because it is almost impossible to fill out forms created in PDF without printing them and then writing or typing

on the paper form; it is a blessing because such files created in PDF are fairly secure from tampering or altering. It should be noted here that the free and very inexpensive PDF utilities typically create the type of PDF file that can not be altered or filled out later, and the more expensive premium products generally can create PDF based forms that can be filled in or altered at a later date.

I currently have several PDF utilities installed on my computer, as I frequently save news stories on web pages, word processing files, spreadsheet files, and other formats as PDF files which I can reproduce or email, and will always be viewable exactly as the original. I have recently started using the recently released CutePDF Writer, which is a free PDF creating utility available for download from www.cutepdf.com/products/cutepdf/writer.asp. CutePDF Writer must be installed along with another

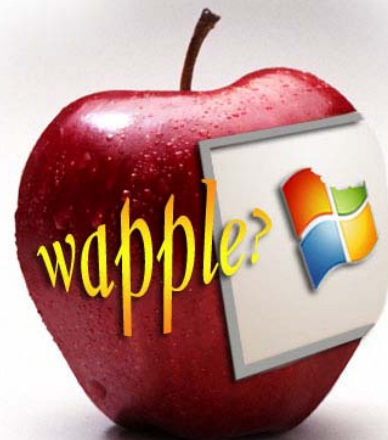
enabling free utility, “GNU Ghostscript”, also available for download from the same location. CutePDF Writer has proven to me to be the simplest and most reliable PDF creator I have used. Regardless of the software I am using, I simply print on FILE – PRINT and select “CutePDF Writer” as my printer, and print normally. Rather than the output appearing on paper, a “save as” box appears where I can enter the file name, and the file is created and saved as a PDF file. The original format of the document or other data is not affected, and remains unaltered. I can now view the newly created PDF file at will, or email it as I see fit, knowing that it will always appear exactly like the original.

For those that need greater flexibility, and the ability to create PDF documents that can be edited, merged, watermarked, encrypted, or used as “fill in the blank forms”, some of the commercially available products may be more appropriate. As I type this, the recently released commercial full featured version of CutePDF 3.2, which offers almost all of the advanced features, is available online from the CutePDF website for under \$50 (www.cutepdf.com). If purchased from the CuteFTP 3.2 website, the utility “Form Filler” is included with CuteFTP 3.2, or it can be purchased separately for about \$30.

CuteFTP Writer, the free PDF creator, has now become one of my most commonly used utilities. I have found it easier and more reliable than any of the other PDF creating utilities that I have on my computer.

Ira Wilsker is an APCUG Director, columnist for The Examiner in Beaumont, TX, and a radio and TV show host
iwilsker@apcug.net

apple takes a bite out of windows



Apple Computer said on April 5 that it has released a public beta version of Boot Camp, software that enables Microsoft Windows XP to run natively on Intel-based Macs. The software, which will be included in Mac OS X 10.5, called Leopard, and is available for download on Apple's Web site.

Because the move will allow a Mac to boot up with either Windows XP or Mac OS X, it could bring more people over to the Apple side.

“We think Boot Camp makes the Mac even more appealing to Windows users considering making the switch,” a spokesman said.

Apple didn't specifically mention plans to support running Vista, the long-delayed update to the Windows operating system now expected early next year. Also unclear is what the Mac maker's move will mean for sales of Windows-based PCs. Market researcher IDC has already scaled back PC sales forecasts for the year, due in part to the Vista delay. And some analysts expect Apple sales to rise as a result of the holdup of the new operating system's release.

With Boot Camp, Intel-based Mac users can choose between running Mac OS or Windows XP each time they boot their system.

In January, Apple released the first Intel-based Macs with Intel's Duo dual-core chips. The new computers run two to three times faster than similar Macs with PowerPC chips, Apple said. Since then, speculation had grown about whether the company would enable Microsoft's ubiquitous operating system to run natively on its computers.

While Apple has prohibited people from running Mac OS X on anything other than its own computers, it has never tried to prevent Mac owners from trying to run Windows on their machines.

Still, Apple won't provide any technical support for the Boot Camp beta, and the company was quick to point out the potential pitfalls of running Windows. “Windows running on a Mac is like Windows running on a PC. That means it'll be subject to the same attacks that plague the Windows world,” the company warned. “So be sure to keep it updated with the latest Microsoft Windows security fixes.”

One analyst predicts that home users previously daunted by a fear of incompatibility with their work PC and a strong desire to hold on to Windows-based programs may now make the jump to Macs.

excerpt from April 5 article by Candace Lombardi, Staff Writer, CNET News.com
 submitted by Tony Lake

apple's news prompts members' comments

SILES BAZERMAN APCUG REP

I think it is a great move by Jobs. He not only got a lot of inches in the papers and on TV but also boosted stock prices with a “non-supported” beta. He may even sell a few more Mac-Intel’s outside of the core enthusiasts, like those on the fence. Actually how many want to be exposed to the holes in Windows security.

It is a move forced by the very active competition, fueled by a substantial cash prize and bragging rights among a large group of free-lance programmers to port over Windows to the new Mac. How would it look for an outsider to get there first.

Remember if you go this route you will have to get the Mac-Intel at a much higher price than a PC, then the Apple OS and then the Windows OS. You will only be able to dual boot, not switch from one to the other without shutting down. Boot Camp is only a “patch” to go between the hardware and Windows software just as Crossover Office, Win4Lin, and VMWare are for Linux. BUT, these run within Linux and will run many (but not all) Windows programs without rebooting.

There are also efforts at porting Linux to the Mac, both old and new, with the advantage of the open software initiative. (freely distributed, and modified, etc) I do not think Bill G is losing much sleep over this.

Boot Camp will be included in the new OS to be released late this year. The Linux boards are hot discussing this

move. http://www.digg.com/apple/ApplesBootCamp_boots_Linux_and_http://theweeklyrant.com/article/8/news-apple-bootcamp-boots-linux

MIKE LYONS ORCOPUG PRESIDENT

When Apple first announced that they were going to use Intel chips, Apple zealots got real nervous about their future. Steve Jobs told them (marketing ploy) not to worry that it wouldn’t run Windows stuff. Shortly after the first Wapple machine appeared, someone had hacked a set of instructions to run XP on the new machine and posted it on the Internet. Apple now has the excuse it needs to fully support Windows on an Apple.

The Apple OS is very good and has better security built in than Windows XP. No out-of-the-box operating system is totally secure and Apple OS is no exception. They recently had their first virus. They have had to make security updates to their OS. As it gets more popular, they will have more challenges.

What it does is make it easier for people to switch from Windows to Apple. Now they don’t have to leave their favorite programs behind. With MS Vista being delayed, Apple stands to gain more converts. If they were really serious, Apple would come out with an OS that would run on regular Intel pcs.

The advantage of being able to dual boot is that you retain all your old Windows stuff to use when you need it

and spend most of your time working in a more secure environment (Apple OS). This makes the transition much easier to take — especially for home users who are tired of all the viruses, patches, etc.

A friend of mine just got a new Apple and was having problems. It took me a while but I finally figured out where things were and got him fixed. What would have been simple on a PC wasn’t so simple for me on the Apple (it was the first time I worked on one). Am I gonna switch, NO.

let the jokes begin!



Switch 101
Lose Ctrl. Gain Command.

I thought this was very clever when I saw this on Apple's startpage. In case you don't get it, the control key is used on Windows computers the same as the command key is used on Macs. (i.e. control+c = command+c). —from the web

After switch booting for awhile, will users be calling it a “pane in the Mac”? — Linda Gonse

Send jokes or comments about win-macs to editor@orcopug.org.

the new, the best, and the worst

by Pim Borman
SW Indiana PC Users Group, Inc.



talking turk-ey

If you've ever earned some pocket money stuffing envelopes, the advent of e-mail may have put you out of business. But the Internet giveth what it taketh away.

Much of the unanticipated success of the Internet is due to the contributions made by selfless volunteers. Businesses then realized the importance of the Internet to advertise themselves, and Wile E. Coyote would now be able to order his Road Runner catchers from www.acme.com (there actually is such a Web site). Nevertheless, volunteers expect to derive some form of satisfaction from their efforts, and the equivalent of envelope stuffing for free does not draw many aficionados.

The Internet would not be more than a large flea market were it not for the powerful search engines capable of retrieving information almost instantly. The retrieval algorithms depend on vast indexes maintained by constantly culling millions of Web sites world wide. Only computer-readable text is indexable. Yet, there are many other types of valuable information on the Web that are not computer-readable, such as hand-written documents and graphical images. It is almost impossible for a computer to distinguish a picture of Picabo Street in her ski outfit from Mother Teresa in her nun's habit. A human can distinguish them at a glance. Hand-written documents must be retyped, as many genealogy indexers know. Thus there is a great need for indexing graphics and hand-written information that requires human input. There are many other instances where human input is required, such as rating the validity of computer-generated keywords describing search targets, or retrieving numbers from scanned documents, such as transfer deeds.

Amazon, with its interest in computer searching with its A9.com search engine, has established a program that enlists human help for such tasks. The program is called Mechanical Turk, after a mechanical chess-playing automaton in 1769 that defeated nearly every opponent it faced. It featured a life-sized wooden mannequin, adorned with a fur-trimmed robe and a turban, seated behind a cabinet. It confounded such brilliant challengers as Benjamin Franklin and Napoleon Bonaparte. What they did not know was the secret behind the Mechanical Turk: a human chess master cleverly concealed inside.



Amazon has set up a Web site (<http://www.mturk.com/mturk/welcome>) as a link between programmers looking for "artificial, artificial intelligence," and paid volunteers providing human inputs to perform the requested tasks, referred to as HITs. These are typically of a simple, repetitive nature and pay a minimal amount, a penny or so, for each input. For instance, I saw a HIT listed to look up deed records on a Web site and find the transfer taxes. The volunteers that complete such tasks are rated on their proficiency and accuracy and build up a reputation that qualifies them for somewhat more challenging and higher-paying HITS.

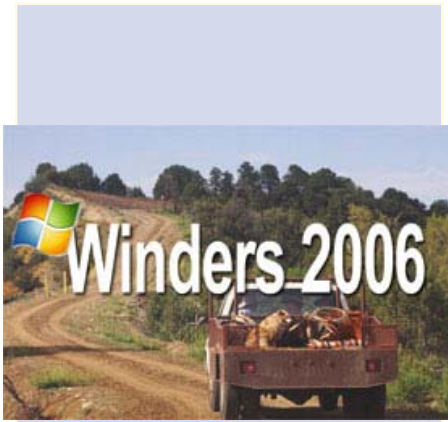
It is an interesting concept that may catch on as it is further refined. (Mentioned in Bill Machrone's column in *PC Magazine*, February 17, 2006).

oldie tribulations

I own a 6-year old former dream machine, once briefly the envy of friends and relatives, a Dell desktop with a 600MHz Pentium III processor and a 20GB hard drive. Over the years I added another 20GB hard drive, upped the RAM to 256 MB, and upgraded from Windows 98SE2 to Windows ME. Lately I have been using this computer to evaluate a variety of Linux distributions that I installed on the second drive in separate partitions.

Recently I took advantage of a special offer to update my version of Xandros (Linux) Desktop Open Circulation to the DeLuxe Edition. I wanted to install it in a clean 10 GB partition, but as a result of the many installations of different operating systems, the second hard drive could not be repartitioned any longer because of a faulty partition table. I could read and write to the disk, but neither Partition Magic nor any other

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Dear Windows Users:

It has come to our attention that a few copies of the Windows 2006 Southern Edition may have accidentally been shipped outside of our southern region.

If you have one of these, you may need help understanding the commands. The Southern Edition may be recognized by the opening screen. It reads: "WINDERS 2006," with a background picture of Waylon and Willie singin' and drivin' up a dirt road in their pickup.

Please also note:

- The Recycle Bin is labeled "Outhouse"
- My Computer is called "This Dern Contraption"
- Dial Up Networking is called "Good Ol' Boys"
- Control Panel is known as "The Dashboard"
- Hard Drive is referred to as "4-Wheel Drive"
- Floppies are "Them little ol' plastic thangs"
- And, instead of an error message, an image of duct tape pops up.

We regret any inconvenience it may have caused. If you received a copy of the Southern Edition, you may return it to Microsoft for a replacement version.

BillyBob Gates

submitted by Siles Bazerman

disk software was able to repartition the drive, or even to reformat it. It was time for drastic measures.

I discarded the faulty slave drive, bought a new Western Digital 80GB hard drive, installed it as the master, and relegated the original 20GB master drive to slave status. All I needed to do was reinstall Windows ME and then repartition the disk to make room for Xandros and Linspire, my favorite Linux distributions. Easier said than done, as it turned out. I'll try to summarize the lessons I (re-)learned.

- Windows ME only upgrades from Windows 98, not from DOS.
- Read the manual about the proper location of the itty-bitty jumpers that determine if a drive is the master or the slave. Don't just go by the markings on the drives. Apparently all drives are different.
- Re-use the old IDE cable if the new cable doesn't reach both drives.
- Even the most recent BIOS version for this computer available from Dell (dated 2000) is not able to recognize more than 32 GB of the 80 GB drive.
- Believe it when it says on the box that the drive requires Windows XP or better.
- The special software, provided by Western Digital, to reach and repartition all 80 GB on an old computer must be used before installing the operating system.
- After using the special WD software to set up the hard drive, don't use Partition Magic 8.0 to further repartition the drive. You won't be able to reboot and will have to start all over again.
- The computer won't boot any longer from the old hard drive, reinstalled as the master. In computing too, you can't go home again.
- After protecting the system with a ZoneAlarm firewall and F-prot antivirus you think it is safe to go

online to update Windows ME and install Internet Explorer 6.0. You'll still receive half a dozen instances of a spy program called Alexa, courtesy of Microsoft. AdAware will identify and remove it for you.

• All's well that ends well. The computer now has 20GB of Windows ME, 30 GB of Linspire 5.0, and 30 GB of Xandros DeLuxe Edition, complete with boot manager.

Maybe I should just have bought one of those cheapy Dell computers. But removing all the junk programs they come with might have been just as frustrating. I'll hold out for a system using the 64-bit AMD chip. That excludes Dell, which uses Intel only. Linux has long since run on 64-bit processors, and Windows Vista is just getting around to it. Now is not the time; later this year, maybe. I might have a local dealer built one to order.

Pim Borman is website editor for the SW Indiana PC Users Group, Inc. at <http://swipcug.apcug.org>. Email Pim at swipcug@sigecom.net.

What were they looking for...?

Searchers keyed in the following search words on the ORCOUG site: open source, ACP 2006, ACP, ohio software, ohio, costello, Irvine Location, swapmeet, raffle, recycle, Phoriasis, DSNX-05, email addresses, antics3d, universal document converter, Symantec, Life is beautiful, partition magic, fire, kenjukido.com, kenjukido, swap meet, canon ink, siteadvisor, site advisor, keyword, REVIEW, members only, staff, printers, and photo.

There are tens of thousands of software items in circulation whose only function in life is to spy on the user, and in any of several ways, invade the privacy of the computer user. In earlier columns several anti-spyware utilities have been described, including CounterSpy, Microsoft Defender (anti-spyware), Ad-Aware, Spybot Search & Destroy, and many others.

Almost all of the contemporary internet protection suites from such software powerhouses as Symantec (Norton), McAfee, TrendMicro, Panda, and others now include integral spyware protection. Despite the fact that several of the anti-spyware products are free, some estimates of the level of computers infected with spyware range up to 90 percent (source: www.spywaredude.com). Another recently published report alleges that 59 million Americans are currently computing with spyware infected computers (source: www.stopbadware.org/home/help).

The spyware on our computers can be as benign as some of the small text files or “cookies” which many websites place on our computers, to products that hijack our browsers, place annoying pop-up ads on our screens, intercept our online financial transactions, compromise our usernames and passwords, or steal our identities.

There have been many attempts to educate the public on the risks and remedies of spyware, yet we still tend to become infected in record numbers with evolving and more sophisticated attacks. Columns such as this, the mass media, the trade press, and a plethora of websites have crowded the message, yet still we fall victims to this insidious threat.

Stop “BADWARE”

by Ira Wilsker



WEBSITES:

<http://www.stopbadware.org>
<http://www.spywaredude.com>
<http://www.getnetwise.org>
<http://www.consumerwebwatch.org>
http://www.stopbadware.org/home/help/help_remove

Now comes another web based attempt to educate the public on the risks of spyware by utilizing a blue-ribbon panel of experts and geeks to peruse the spyware offerings using sound scientific and academic

principles to accurately determine the relative risks. Once identified, this new website, www.stopbadware.org, will determine which products actually possess the greatest aggregate risk to the computing public, and publicize that fact.

Stopbadware.org was recently created as an academic - private partnership consisting of such reputable academic organizations as the Harvard Law School's Berkman Center for Internet & Society and Oxford University's Oxford Internet Institute. Corporate sponsors who have an interest in halting the rapid spread of spyware include Google, Lenovo, and Sun Microsystems. The well respected Consumer Reports WebWatch (www.consumerwebwatch.org) is also involved with this project.

Recently, with some fanfare, stopbadware.org published its list of just four common utilities that in terms of the numbers of users who innocently use the products are at the greatest risk of being infected with spyware imposing various degrees of threats. These four well known products are KaZaa,

MediaPipe, SpyAxe, and Screensaver.com. Each is alleged to load its own combination of “badware” or spyware products on the unknowing victims' computers.

KaZaa is the enormously popular file sharing utility used by millions to share and swap files. Stopbadware.org has determined that KaZaa is one of the major purveyors of badware “...because it misleadingly advertises itself as spywarefree (sic), does not completely remove all components during the uninstall process, interferes with computer use, and

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makes undisclosed modifications to other software.” Some of the items and software modifications are disclosed in the “EULA” (End User License Agreement), but others are not. Some of the software installed by KaZaa, such as “The Best Offers Network”, a type of ad-ware, cannot be easily closed by the user. Several other BADWARE programs are installed by KaZaa. Even if KaZaa is uninstalled using the appropriate uninstall or Add/Remove Programs feature integral with Windows, much of the badware remains functioning on the computer.

Another popular distributor of alleged badware is the popular source of pretty screensavers, Screensaver.com. One item of badware explicitly cited by stopbadware.org is the screensaver “Waterfalls 3.” Without disclosure, Waterfalls 3 installs a spyware component that transmits private data to an external source. It also modifies the browser and installs revenue generating BADWARE programs, some of which overlay Internet Explorer windows.

Stopbadware.org has identified as a badware program, SpyAxe, a utility advertised to detect and remove spyware from an infected computer. Once installed, SpyAxe appears to scan for spyware, but cannot be easily stopped or even uninstalled. Once suspected spyware is detected by the program, SpyAxe requests that the user register and pay for the program, and does not easily allow the user to exit SpyAxe without registering and paying! It takes at least three distinct steps to cease the program, which will reload and restart at the next boot of the computer, necessitating a repeat of the onerous process.

While there are many legitimate and sometimes free spyware removal programs available, users must be cautious not to be victimized by some illicit products that solicit

funds, but fail to accurately and competently detect and remove spyware. Stopbadware.org has some tips on identifying and removing badware, and some software resources at www.stopbadware.org/home/help/help_remove.

Spyware and other forms of badware may be threats to our computing safety, as well as hindrances of our computer enjoyment.

The academic and corporate power behind stopbadware.org may go far in removing this malware from our society and machines.



by Linda Gonse

Defrag needs at least 15% of free hard drive space to work properly. Disk Defragmenter uses the free space as a sorting area for file fragments. If a disk has less than the minimum amount of free space, Disk Defragmenter will only partially defragment your disk.

If you have huge files, you can backup large folders or files on

Q&A for Retirees...

Q. When is a retiree's bedtime?

A. Three hours after he falls asleep on the couch.

Q. How many retirees does it take to change a light bulb?

A. Only one, but it might take all day.

Q. What's the biggest gripe of retirees?

A. There is not enough time to get everything done.

Q. Why don't retirees mind being called Seniors?

A. The term comes with a 10% percent discount.

Q. Among retirees what is considered formal attire?

A. Tied shoes.

Q. Why do retirees count pennies?

A. They are the only ones who have the time.

Q. Why are retirees so slow to clean out the basement, attic or garage?

A. They know that as soon as they do, one of their adult kids will want to store stuff there.

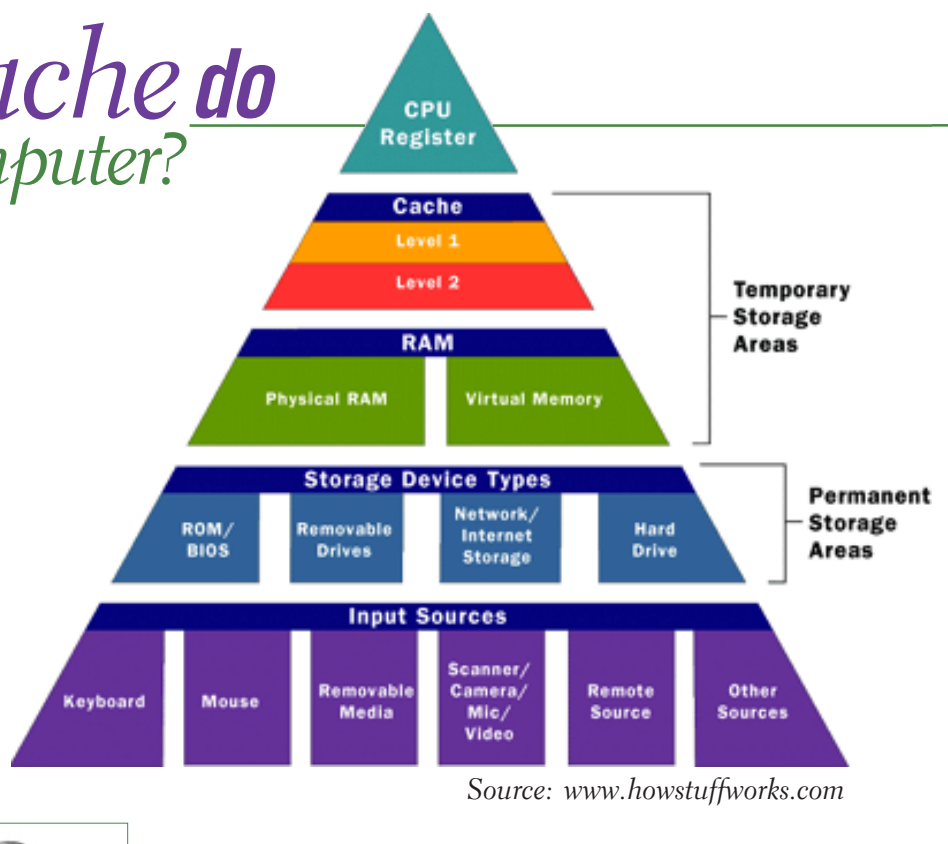
submitted by Tony Lake

what does a cache do for a computer?

by Brian K. Lewis, Ph.D.

A cache (pronounced “cash”) is a form of memory storage that generally operates faster than RAM memory or the time required to access a hard drive. The cache is smaller, faster memory that stores copies of the data from the most frequently used memory locations. Computer processors (CPUs) utilize both internal and external caches. You will also find references in the specifications of hard drives, CD & DVD drives to caches of various sizes. In order to see how these caches benefit computer operations we’ll look at the operation of the internal caches on CPUs.

Before looking at the cache function, you need to have some understanding of the architecture of a CPU. Much of the internal structure of a CPU is composed of registers that hold small bits of information and also can be used in manipulating information. As one example, the Intel Pentium 4 processors have 128 registers. Some registers hold instructions, others hold data, others have memory addresses and others are arithmetic manipulators. The instructions are found in the program code and they tell the processor what to do with the data. The processor loads instructions from memory and then loads data that is manipulated based on the instructions. So the registers hold data to be processed, the results of calculations, or addresses pointing to the location of other data. The



processor can act on data in registers almost instantaneously.

However, the registers are far too small to hold all the data required.

Instead, instructions and data have to be read from or written to RAM.

If the program code were always loaded directly from memory and all the data were written directly back to memory and then to the hard drive, the overall process would be quite slow compared to what we normally see. It is the use of caches that greatly speeds up the total process so the processor isn’t stalled waiting for either instructions or data. The fastest cache is the one that is part of the processor and is referred to as the L1 cache. It can operate at the same speed as the processor. So if you have a 30-gigahertz (GHz) CPU, the L1 cache also operates at 30 GHz. Thus data can be accessed in one clock cycle. This cache is generally 128 kilobytes (KB) in size or smaller,

although the Pentium 4 has an internal cache of 16 KB plus an internal Trace cache of 150 KB.

The following diagram displays the relative relationship of the RAM memory and the components of the caches in the CPU body:

- RAM Memory
- * L2 Memory Cache
- * L1 Instruction Cache
- * Fetch Unit
- * Decode Unit
- * Execution Unit
- * L1 Memory Cache

The above components marked(*) run at the same rate as the internal CPU clock. The next cache in distance from the processor is the L2 cache. In older CPUs this was totally external to the processor. In most cases, the L2 cache is now integrated on the CPU chip. The data path in these processors is 256 bits wide allowing for the transfer of more bits per

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clock cycle than the older processors that had 64 or 128 bit paths. The data path between the CPU and the external RAM is usually 64 bits or 128 bits wide. In a system with an 800 MHz bus, the real clock rate is 200 MHz, but transfer occurs in 4 blocks per clock cycle. This gives an effective transfer rate of 800 MHz or 6.4 GB/second. Still considerably slower than the transfer rate within the CPU.

The theory of using caches is that instructions and data in the cache will be the next set of information requested by the CPU for processing. If the requested information is in either the L1 or L2 cache, it will not be necessary to go to RAM. Thus it can be accessed at the internal clock rate. If it is present, it is referred to as a “hit”; otherwise it is a “miss”. (Logical, right?) Now, the bigger the memory cache, the better the chances of finding the data required by the CPU. However, there is a catch to this. The bigger the cache, the more time that is required to find the data. This is referred to as the “latency” time. In an ideal setup you would have a single cache with a high hit rate and a low latency. This is very difficult to achieve in practice. Consequently, we have two caches, a small one with low latency and lower hit rate combined with a large cache with higher hit rate and high latency.

Now that we’ve reviewed the architecture, we need to see how all this works. Let’s start with the Fetch unit that is used to load information from memory on demand from the processor. It first checks the caches to see if the required instructions or data are there. If not, it will load the information from system RAM. This information is then passed to the Decode unit. Note that when I refer to information it can either be instructions or data.

If the information is a program instruction, the Decode unit will figure out what that particular instruction does. It does that by consulting a ROM memory that exists inside the CPU called microcode. Each instruction that a given CPU understands has its own microcode. The microcode will “teach” the CPU what to do. It is like a step-by-step guide to every instruction. If the instruction loaded is, for example, add a+b, its microcode will tell the decode unit that it needs two parameters, a and b. The Decode unit will then request the Fetch unit to grab the data present in the next two memory positions, which fit the values for a and b. After the Decode unit has “translated” the instruction and grabbed all the data required to execute the instruction, it will pass the data and the “step-by-step cookbook” on how to execute that instruction to the Execute unit. There is an exception to this in the newest Pentium 4 processors. In these processors the L1 Instruction Cache has been relocated to after the Decode unit. It now contains the translated instructions and is referred to as the Trace cache.

The Execute unit will finally execute the instruction. On modern CPUs you will find more than one execution unit working in parallel. This is done in order to increase the processor performance. For example, a Pentium 4 CPU with six execution units can execute six instructions per clock cycle. In theory it could achieve the same performance as six processors with just one execution unit. After the processing is over, the result is sent to the L1 Memory cache. From there it can be written to RAM or sent elsewhere.

Modern processors have another feature called the “pipeline”. This is the capability of having several different instructions at different stages of processing in the CPU at

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the same time. On Pentium III processors the pipeline was 11 stages — each a unit of the CPU. The latest Pentium 4 processors have 31 stages. With the greater number of stages, fewer transistors are required per stage, resulting in a higher clock rate. O.K, so what's the value of stages in the pipeline? After the Fetch unit sends an instruction for decoding, it grabs the next instruction. This can be sent on as soon as the first instruction is sent to the Execution unit. If an instruction has to be processed by all 11 (or 31) stages, it takes the most time, while other instructions might require fewer stages. Only when the first instruction is finished processing can it be sent out, but others that required processing by fewer stages might immediately follow. The consequence of this is that multiple instructions can be processed simultaneously. This greatly increases the overall processing throughput.

Other caches found in computers are not associated with the processor. One such type of cache that you use frequently, probably without being aware of it, is the web page cache managed by your web browser. When you visit a web page, it is downloaded to your computer. If you visit that same page within a few days, your browser pulls the page from its temporary cache, compares it with the current page on the web server and updates only the changed portions. This speeds up the appearance of the page on your computer. For example, my home page is Yahoo.com. The major part of this page doesn't change from day to day, so the downloading of the page is limited to those parts that have actually changed. This allows the page to appear on my screen quite rapidly.

So in CPU processing, the use of caches has greatly increased the

speed of data handling. The same is true of caches used elsewhere in the computer. In all cases they are short-time storage of information. Luckily, you don't have to have a complete understanding of caches to use your computer. Let the computer do the work!

Dr. Lewis is a former university and medical school professor. He has been working with personal computers for more than thirty years. He can be reached via e-mail: bwsail@yahoo.com.

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submitted by Tony Lake



drinking from my saucer

*I've never made a fortune
and it's probably too late now
But I don't worry about that much
I'm happy anyhow.*

*And as I go along life's way
I'm reaping better than I sowed
I'm drinking from my saucer
'Cause my cup overflowed*

*I don't have a lot of riches
and sometimes the going's rough
But I've got loved ones around me
And that makes me rich enough.*

*I remember when things went wrong
My faith wore somewhat thin*

*But all at once the dark clouds broke
And the sun peeped through again.*

*So God, help me not to gripe about
the tough rows that I've hoed
I'm drinking from my saucer
'Cause my cup has overflowed.*

*If God gives me strength and courage
when the way grows steep and rough
I'll not ask for other blessings
I'm already blessed enough.*

*And, may I never be too busy
to help others bear their loads
Then, I'll keep drinking from my saucer
'Cause my cup has overflowed.*

submitted by Joe Francis

members' email addresses

Bazerman, Siles

siles.bazerman@verizon.net

Bollinger, Frank

frbollinger@earthlink.net

Boutwell, Lloyd

LloydB8@aol.com

Covington III, Gary

garyiii@hotmail.com

Francis, Joe

joefran1@earthlink.net

Gonse, Linda

editor@orcopug.org

Gorham, Milton

m4gorham@home.com

Jackson, Walter

wvjaxn@charter.net

Kaump, LeRoy

leroy_kaump@hotmail.com

Klees, Larry

lklees@dslextreme.com

Leese, Stan

stanleese@dslextreme.com

Loehr, Lothar

lothar@orcopug.org

Lyons, Mike

mike@orcopug.org

Moore, Charlie

charlie@orcopug.org

Moore, Michael

MichaelR_Moore@yahoo.com

Musser, Dave

dmusser@worldnet.att.net

Tooley, Richard D.

tooley@alum.mit.edu

Wann, Harold

WANN.HSW@worldnet.att.net

Westberg, Carl

carl@orcopug.org

Wirtz, Ted

twirtz@pacbell.net

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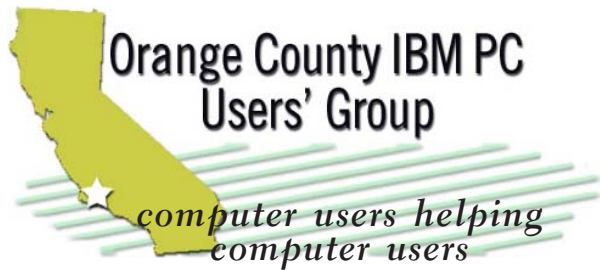
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ORCOPUG
 Post Office Box 716
 Brea, California 92822-0716
 714-990-0580 • www.orcopug.org

President, Mike Lyons mike@orcopug.org
Treasurer/Membership, Charlie Moore charlie@orcopug.org
Editor/Webmaster, Linda Gonse linda@orcopug.org
Reviews, Terry Schiele terry@orcopug.org
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