

THE NEWS MAGAZINE OF THE ALAMO PC ORGANIZATION

PC Alamode

**Alamo PC Organization is South Texas' Premier PC
Club promoting computers for everyone: from
beginner to expert.**

www.alamopc.org

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Alamo PC Organization
Regular Meeting is usually held
the 2nd Monday at 7:00 pm
4888 Whirlwind Drive
San Antonio, TX 78217
Loop 410 at I-35
(see map, page 2)

Windows 7 Tip

Get a Power Efficiency Report

Have a laptop and want to get more battery life out of it? Windows 7 includes a hidden built-in tool that will examine your laptop's energy use and make recommendations on how to improve it. To use it:

1. Run a command prompt as an administrator.
To do this, type cmd in the search box, and when the cmd icon appears, right-click it and choose "Run as administrator."

2. At the command line, type in the following:

```
powercfg-energy-output  
\Folder\Energy_Report.html
```

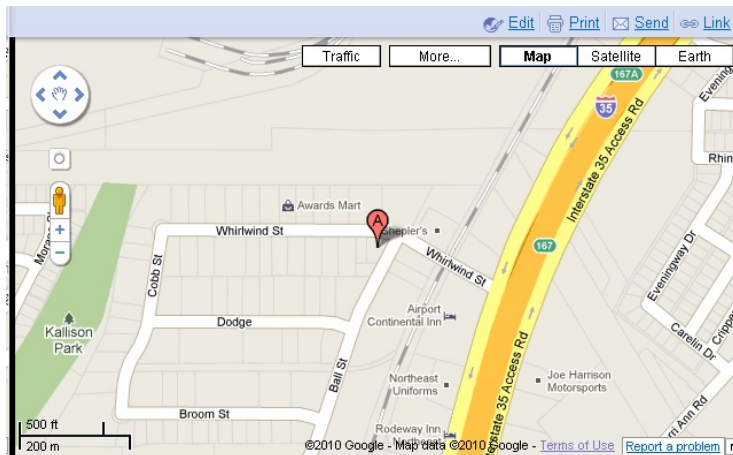
where \Folder represents the folder where you want the report to be placed.

3. For about a minute, Windows 7 will examine the behavior of your laptop. It will then analyze it and create a report in HTML format in the folder you specified. Double-click the file, and you'll get a report -- follow its recommendations for ways to improve power performance.

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DISCLAIMER

As most of you know, the Alamo PC Organization has significantly reduced in size. Although the organization has been pretty much dead for the past few months, there are a few key people that have been working behind the scenes to try to resurrect and revive the group. Although it is a slow process, there has been a lot of headway made.

For example, we are happy to be able to again offer our members a chance to download the award winning PC Alamode magazine. Even though it is somewhat reduced in size, it is still packed with great articles and tip and tricks for optimizing your PC's and just plain having fun.

Starting in the 1st quarter of 2011, we will again be having PC-based presentations at our monthly meetings. Some will be live, while others will be "net" meetings. Regardless of the type, they will all prove to be beneficial to the attendees.

So, as you can see, we want to continue the comradery of the user group, and want you back. We are presently charging no dues, and will try to continue this policy as long as we can. However, donations are and will be greatly appreciated.

The rest of the website will remain up and accessible by all visitors, with the caveats below.

Most of the information on the website is "dated" and the accuracy of the information cannot be guaranteed. With these limitations in mind, we hope visitors to the website find what remains to be somewhat informative and helpful.

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The Running of the Nerds, Part 2

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Prez Lou

No, I wasn't in Spain at the Running of the Bulls...I was in Las Vegas to attend the annual Consumer Electronics Show and yes, I was one of the thundering herd going from press event to press event, starting on Tuesday, January 4.

As a user of an ASUS Netbook, I was pleased to receive an invitation to the ASUS press conference on Jan 4. The following are my best picks:



ASUS Eee Pad Slider

Mobile users who want the best of both tablet and traditional notebook worlds will be well served by the Eee Pad Slider. This pad computer not only features a 10.1" IPS touch-screen for finger-friendly use, but also a slide-out QWERTY keyboard for comfortable, use-anywhere typing. It is powered by the NVIDIA® Tegra™ 2, the world's most advanced mobile processor with a dual-core CPU and NVIDIA® GeForce® GPU for never-before-seen experiences on a mobile device. Built-in digital cameras on the front (1.2MP) and rear (5MP) of the Slider allow for easy video chat and digital photography while the Android® 3.0 operating system makes sharing photos by internet, email and social media sites a breeze. The intuitive interface provides user-friendly control via the capacitive touch-screen and optional onboard 3G allows for go-anywhere internet access, making the Slider the ideal device for mobile professionals with work-oriented needs.



ASUS Eee Pad Transformer

With a slim lightweight design and 10.1" capacitive touch-screen, the versatile Eee Pad Transformer is the perfect pad computer for people who want to enjoy multimedia on the move, but still wish to have easy access to the web, email and other productivity applications. A custom user interface provides easy access to the many features of the Android® 3.0 operating system, while the NVIDIA® Tegra™ 2 chipset provides full support for Adobe Flash, smooth HD video conferencing and playback, a lightning fast web experience and incredible mobile gaming performance. An optional docking station turns the Transformer into a full-fledged notebook with a QWERTY keyboard for desktop use, while extending battery life up to 16 hours. As with the Slider, front (1.2MP) and rear (5MP) digital cameras make for easy video chat and digital photography, while a built-in mini-HDMI port makes for easy connections to external displays showing off full 1080p HD video playback.



ASUS Eee Pad MeMO

The Eee Pad MeMO provides the ultimate in mobile flexibility. Its 7.1" capacitive touch-screen makes it small enough to slip into a jacket pocket, yet still perfect for taking handwritten notes using the supplied stylus pen. The Android® 3.0 operating system offers a wide range of productivity and entertainment software, while a Micro HDMI port means the MeMO can even connect to an external display for full 1080p HD video playback.



ASUS Eee Slate EP121

The Eee Slate EP121 is designed for users who require a highly portable handheld device that can also run standard office software while multitasking with other applications. Powered with an Intel® Core™ i5 dual-core processor, the Eee Slate features a 12.1" LED-backlit display with a 1280 x 800 resolution and a wide 178° viewing angle, making it perfectly suited for both productivity applications and multimedia entertainment. Windows® 7 Home Premium

ensures full compatibility with a wide range of popular applications controlled by flexible input options thanks to the Eee Slate.

The capacitive touch-screen responds instantly to fingertip control for day-to-day use, while the capacitive stylus offers fine precision input and control. An on-screen keyboard is also complimented by support for an external Bluetooth keyboard for traditional desktop use. The Eee Slate is available with 32GB or 64GB of SSD storage (expandable via SDXC), and up to 4GB of DDR3 RAM. All models have 802.11n Wi-Fi, Bluetooth 3.0, a 2-megapixel camera, plus two USB 2.0 ports that provide full support for a wide range of standard PC peripherals, along with a mini-HDMI port that is ideal for connecting to external displays.



Finally, my fav...and in the interest of full disclosure, I have to tell u I now own a 2011 Ford Fiesta that looks just like the one above and I do really enjoy it and am still learning all the details of my Sync. Ford showed off the newest update for Sync at CES 2011. The update adds a new feature called AppLink to sync. Installing AppLink to your Fiesta is done just like applying any update. You log into Syncmyride, download the file with the update to a flash drive and then plug the flash drive into your car's USB port.

Once the update is done, you can hit the voice button, say "Mobile applications", and then tell sync what app to launch. The AppLink update will work with the iPhone, Android devices, and Blackberry smartphones. No apps for the iPhone are offered right now, but there will be support in early 2011 according to Ford. The first apps for the iPhone and the other two devices are Pandora, Stitcher, and OpenBeak for Blackberry devices only.

With Pandora, the driver will be able to launch the app with their voice, tune to specific stations using their voice and rate songs using their voice and more. This is a really cool new feature and Ford will be rolling the app out to other Sync cars in 2011.

Be safe out there in the www and remember to be careful.

Aloha, Lou

You can read Lou's monthly column at



http://www.aroundhawaii.com/technology_in_plain_english.html / <http://bit.ly/f3TQ5t>

An App - What it is and What it does

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An app can be found on the iPhone and the iPad as well as many other smart phones and tablet PCs. In fact, Apple's introduction of the idea of apps in 2008 is what made smart phones and tablet PCs so popular. Up until that time, we were all used to full-blown programs like those that run on a

computer. Most of these programs contain millions of lines of code, have numerous functions, and have menus that open up to reveal a multitude of choices.

In contrast, an app is a little mini program that has one basic function. It is an expression in simplicity. A good app does only one thing and it does it very quickly and easily. There are no nested menus and there are very few choices to make. One similarity between a full-blown program and an app is that both can be started by an icon that you choose by using a mouse or by pressing your finger on the screen.



One of the best things about apps are that they are easy to use. The true beauty of the apps, however lies in their variety. There are hundreds of thousands of apps, but you don't have to use them all. You can choose only the ones you want. A computer program may be able to handle 100 different functions. Even if you only want to use one of those functions, you still have to install the entire program. Apps are different. You only install the ones you need.

However, like computer programs, apps are specific to an operating system. For example, a program that is created for the Mac will not run on a PC. An app that was created for the iPhone will not work on an Android phone. Each operating system has their own App Store or Marketplace where you can download apps. Many apps are free. Many are under \$2.

Right now there is a large selection of apps for the Apple iPhone and iPad at the iTunes App Store. BlackBerry, Google (Android), Microsoft, Nokia, and Samsung all offer apps through their own app storefronts.

If you have never used a smart phone or a tablet PC that uses apps, you will be amazed by the sheer number and variety of apps. Apple has over 300,000 apps in their App Store. Google has more than 200,000 in their marketplace.

Because of the wide variety of apps, it is difficult to talk about them all, but let me give you a quick idea of what an app can do. Using an app, you can express your artist abilities, play the piano, or visit with your Facebook friends. You can turn your phone into a level to get that

picture straight, or turn it into a light saber and become a savior of the universe. There are apps to let you play games, find recipes, read news, get stock quotes, follow sports, shop, and compare prices. There are apps that help you relax, time the steeping of your tea, identify any song, tune your guitar, and even match the color of any object to a paint color.

Yes, there is an app that will help you do almost anything. And people are using these apps in numbers that seem almost unimaginable. The Apple app store opened on July 10, 2008 and they have already had over 10,000,000,000 downloads. The wild popularity of apps will entrench that word in the technical dictionaries for many years to come.

Solid State Devices

By Vinny La Bash, Regular Columnist

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October 2010 issue, Sarasota PC Monitor

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Measuring the effect of SSD technology is more than the numbers game we play with conventional Winchester disk drives. What you experience with SSD drives centers on how certain tasks feel. Loading applications, boot up, shut down, and changing levels in your first person 3D shooter game are prime examples. Everything happens incredibly fast.

Examine the current state of SSD technology and you see a rapidly evolving technological landscape. Concerns about performance, longevity, and outright failure that plagued early solid state drives are fading. These issues are being replaced by how well manufacturers are optimizing the components of SSD technology. NAND chips, controllers, and cache memory are made by multiple suppliers. SSD vendors must take these separate components and merge them into a reliable storage device with good performance at a price that potential customers are willing to pay.

SSD manufacturers select a controller based on the controller's cost and capability, match it with one of several different kinds of cache memory, and marry the combination to either MLC or SLC NAND flash memory chips. Single Level Cell (SLC) holds one data bit per cell. Multi Level Cell (MLC) has greater capacity. Currently MLC data chips hold two data bits per cell.

Experience reveals that the future belongs to MLC based devices. Up until now SLC based technology offered faster writes, lower power consumption, and greater longevity. Still, Intel and other chip makers appear confident that MLC technology will become dominant in the marketplace. That confidence is backed up by the design of current MLC devices where performance measured against SLC based devices is becoming nearly indistinguishable. An examination of technology publications shows that reviewers of SSD drives overwhelmingly prefer MLC gear.

Intel has been and continues to be a leader in this area. In the early days of SSD development, controller problems were so prevalent that Intel assigned a team of development engineers to redesign the controllers. A new generation of controllers came about which

rehabilitated the technology. That too is about to change. Earlier this year Intel and Micron announced 25nm NAND flash memory production which means yet another generation of controller technology is imminent.

Why Performance Declines Without TRIM

It is important to understand how SSD devices handle a delete operation. (*Otherwise you may have difficulty comprehending TRIM, which will be described later*). No storage device, whether it is an SSD or traditional drive, has access to the operating system's file structure. Therefore, it does not know what data the OS has marked for deletion and is available for overwriting. Later on, when the OS wants to perform a write operation, this becomes an overwrite operation from the viewpoint of the storage device.

For conventional disks, this is the same as writing to an empty sector, but because of how an SSD must operate at the hardware level, an overwrite operation involves considerable additional overhead which can effectively cripple write performance.

An SSD stores its data in flash memory cells. These cells are organized and grouped into pages. Typical page capacity is 4 KB. These pages are further consolidated into blocks consisting of (typically) 128 pages or 512 KB of data. Early SSD performance slowed down over time because data can be erased only at the block level. An erase operation is theoretically possible at the page level, but because of the physical construction of an SSD device, erase commands won't work except at the block level. This is inherent in the design, and cannot be changed.

Note: By design, it is impossible to write to a NAND memory cell unless it is empty.

Any data in the block must be transferred into cache memory where it is then erased and rewritten to flash memory as empty pages. The actual operation is more complex, but a data overwrite is essentially a read, modify, erase, and write cycle. The memory and processor embedded in the controller handles the entire procedure and does not go outside the SSD. The process is commonly referred to as *write amplification*.

Example: You have 8KB of data. In a previous session the OS marked some of the data for deletion, and the OS now wants to overwrite the "deleted" data.

- The OS sends instructions to the SSD controller to begin the data overwrite.
- The contents of the entire block are read into cache memory.
- The memory cache is now updated. Unneeded data is deleted, and the rest undisturbed.
- The entire block is erased on the SSD.
- The updated data in the cache memory is now written back to the block.
- The longer the SSD has been in use, the greater the performance degradation because of the way data must be stored and modified.

TRIM

Without TRIM, performance declines because the operating system doesn't bother to inform the SSD when data is available for re-write, and the operating system doesn't actually delete the data. The TRIM command addresses the situation by working with the operating system

to notify the SSD that data marked for deletion should be immediately erased. In other words, the TRIM command tells the SSD to delete data at the same time the user initiates the delete function instead of waiting for the OS to decide when to overwrite the "deleted" data.

When the operating system "deletes" a file, if TRIM is enabled, the operating system updates the file system and notifies the SSD via the TRIM command which pages need to be deleted. Then the SSD reads the block into cache memory, updates the cache, erases the block on the SSD, and then writes back only pages containing data which was not marked for deletion by the OS. The delete is slow, but there is no performance hit for write operations because the affected pages are now empty, and write performance is what's important. TRIM improves performance only when you delete files.

The TRIM command acts as an interface between the OS and the SSD that tells the SSD when data should be erased. The SSD then performs the delete operation immediately after the OS marks the data for deletion. Since TRIM ensures that data is actually deleted immediately after the user deletes a file, traditional file recovery programs will not work on solid state devices with TRIM enabled.

Note: Windows 7, Windows Server 2008 R2, and some versions of Linux support TRIM. Windows XP and VISTA do not, repeat, do not support TRIM. However, a few vendors have included utilities that will enable the command with XP or Vista if the SSD supports the command. However, most early SSD devices do not support TRIM. Check with the manufacturer.

Partitioning and Formatting

While the physical structure of solid state devices is considerably different from traditional disk drives, partitioning and formatting operations appear virtually identical from a PC user point of view. What goes on under the covers should be of no concern to most users.

Defrag

In a standard disk drive, information is accessed by a combination of platter rotation and movement of read/write heads. Defragmentation takes all the sections or fragments of a file and positions them in one contiguous location. This minimizes seek time and speeds up disk operations.

Solid state devices have no moving parts. Performance is the same no matter where data is located. Therefore, nothing can be gained by defragging a solid state device. The additional, unnecessary read/write cycles may actually reduce the SSD's life expectancy. Therefore, defragging SSDs is not only useless, but may be harmful. Don't defrag an SSD.

Wear Leveling

Flash memory chips have a finite life cycle. This cycle is defined by approximately 10,000 write operations before the cell is subject to breakdown and no longer reliably records data. *Wear Leveling* is the process by which no flash memory cell is required to undergo significantly more write operations than any other memory cell on the drive. The process evenly distributes write operations among the available flash memory cells.

Wear Leveling affects the data capacity of solid state drives because some of the disk space must be reserved to carry out the leveling operation. The amount of reserved space varies by

manufacturer and is known as *over-provisioning*. The longevity of an SSD appears to be directly proportional to the efficiency of *Wear Leveling*. Most manufacturers reserve around 7% of the SSD. Conservative vendors such as Mushkin reserve up to 13%. This can account for much of the discrepancy between stated total capacity and formatted capacity. The trade off could become an issue to SSD customers who may be unwilling to sacrifice storage space even for potential increased longevity.

Summary and Conclusions

There is no doubt that solid state devices will eventually replace conventional disk drives, but prices of solid state drives will have to decline significantly first. Until that day, expect to see hybrid systems consisting of an SSD boot drive, and traditional drives for bulk storage. Solid state drives have no moving parts. Therefore, they have considerable advantages over traditional drives:

They are very fast because seek time is greatly reduced.

- Less likely to malfunction.
- Smaller and lighter.
- Generates very little heat.
- Completely silent.
- Consume far less energy.

Digital Asset Management Software

By Mike Morris, Editor, Front Range PCUG, CO
February 2011 issue, kByte™ newsletter
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What is interesting to me is that many of today's digital imaging software applications offer both image editing and what is called "Digital Asset Management" (DAM) capabilities.



In the not-so-distant past, the only image software choice was what image editor to use (Photoshop or something else). But with the "explosion" of digital camera use, keeping track of all the images (and protecting intellectual property rights) has clearly become a significant issue. While this is certainly an issue especially for professional photographers, with digital cameras, even the most casual photographer will soon find hundreds, if not thousands of photos on their computer.

Perhaps you are thinking, as you read this, that you don't need image management of any kind, because your digital camera provides all the necessary information.

Actually, that is NOT the case. The camera provides information about camera settings (including date and time of the photo). But not included in that data is information such as the event (e.g., parent's 50th wedding anniversary), or the names of the people in the photo. Yes, you may have an excellent memory, but your children and grandchildren probably won't

remember or know the names of all the people in the photos of those special events (I can verify that from personal experience).

That is why image management software is so helpful—it allows you to capture that information. You have a wide range of software choices for this application:

- (<http://www.digikam.org/>), an image management application claimed to be designed by photographers, and is open source and therefore free. This application offers both DAM and image editing capabilities (which are significant, although not equivalent to the editing features of Photoshop or GIMP). For Windows users, you can download the Windows version from download (<http://bit.ly/hWfFrt>).
- DigitalPro (<http://bit.ly/faHwgJ>), also claimed to be designed by photographers, and is proprietary (\$179). This application is primarily for image management (and primarily for professional or advanced amateur photographers), not image editing.
- Bibble Labs (<http://bibblelabs.com/>) Pro (and Lite). This proprietary application (\$199.95) offers both editing and DAM features. One major claim on their website is that this application is faster than any other. For a list of editing tools this application provides, connect to features (<http://bit.ly/82JzsV>).
- Adobe CS3 (and later) applications. The Adobe Bridge program is bundled with the CSx (the latest release is CS5) series of Adobe products. In my case, I received it when I purchased Adobe InDesign CS3. Adobe Bridge brings DAM features to the Adobe products, all of which, as I am sure you know, are very expensive applications (full retail price for Photoshop CS5 is \$699). They are, however, designed for professional/business use, originally commercial printing, but now expanded into electronic publishing as well. The Adobe products (Photoshop, Illustrator, InDesign among others), despite the many competitors, are still considered industry “standards.” For more information on these products, connect to Adobe (<http://www.adobe.com>).
- Adobe Lightroom. From Wikipedia (<http://bit.ly/3wnGqF>) is this description: Lightroom is an application “...designed to assist professional photographers in managing thousands of digital images and doing post production work. It is not a file browser like Adobe Bridge, but rather an image management application database which helps in viewing, editing, and managing digital photos, the same way photographers used to do in the non-digital world.” Connect to Lightroom (<http://adobe.ly/6dBlz>) for a list of features. Full retail price is \$299.
- For the casual computer user/casual photographer, there is Google Picasa (<http://picasa.google.com/>). It offers simple image organizing features and a few simple editing features. It is free, and “automatic.” After you download and install the program, it will, when you first launch it, catalog virtually all the images (with a few minor exceptions) on your computer.

- Most, if not all major camera makers provide some software with their cameras that include some basic image organization and image editing features.

There are many other choices, some of which you can find in the Wikipedia comparisons at: image viewers (<http://bit.ly/asWUi>), image organizers (<http://bit.ly/CNnwr>), and graphics editors (<http://bit.ly/10xtOU>).



I ended up with Adobe Bridge “by default.” Since I make no claim to being a professional photographer, or even (yet) a knowledgeable amateur, I would very probably have picked a free application (such as DigiKam) for “Digital Asset Management” if I didn’t already have Bridge.

For me, Picasa does not have enough features. However, I expect it will be sufficient for many digital camera users.

I have not tried to compare in detail either editing features or DAM capabilities of these programs. I have, however, scanned through the DigiKam manual (<http://bit.ly/hZaFX9>). My conclusion is that if you download and install DigiKam and GIMP, you will have a very powerful, very feature-rich set of image editing and image management tools.

Thanks to FRPCUG member Bert Broekstra for his comments on DigiKam, and for finding the DigiKam PDF manual link.

New Year’s Slickdealing Resolutions

By Gabe Goldberg
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Unless you're shopping now for late or very early gifts, to get those better post-holiday sale prices, you're taking a breather from committing in-store or online commerce. So there's no better time to review basic tactics for 2011 outings.

Plan ahead and buy early (and not just for Christmas -- you KNOW when birthdays, weddings, other gifty occasions will be through the year!) to use the cheapest trackable shipping. Free -- usually cheapest -- is available from many websites during sales or for buying enough goods (only \$25 from Amazon).

Use credit cards for maximum consumer protections; invoke them when vendor disputes can't be settled quickly and fairly.

Use credit cards providing extended warranty protection. And remember this when problems occur -- it's easier claiming on them than fighting with manufacturers after standard warranties expire.

Compare prices, including shipping. Unless you're buying something like Abebooks' most expensive titles of the year <<http://tinyurl.com/2arb8xd>>, whatever you want is likely available

in multiple places. Variation between most/least expensive offerings can be mind-boggling. Be at least mildly suspicious of prices too far below the norm.

Trust and verify. Be careful if it's not a well-known vendor; Google for problems and complaints.

Don't enter personal/financial information on non-secure sites (that is, those without https URL prefix and padlock or other secure symbol). Sometimes sites claim to be -- even think they are -- secure, but aren't. I've gotten free merchandise by griping to Webmasters about their non-secure websites; they've been grateful for the feedback.

Resist saving credit card and account information on too many vendor sites. Yes, it's convenient -- but many recent stories about site customer information being disclosed argues against it.

Don't send cash or wire money, no matter how appealing someone makes it sound. These are purely scam tactics.

Keep records: as you receive them, electronically file (or print) purchase receipts, warranty information, shipping details, and such. When you reconcile credit card charges (you do that every month, right?) discard redundant material. But keep anything you might need for returns, claims, service.

Not just for shopping, but especially for it: be secure with current and updated malware (virus, spyware, spam) protection. Resist clicking links in email unless you know the sender. But remember that sender information can be spoofed; preview links before clicking.

Avoid extortionate shipping charges -- use shopping and price comparison websites (such as abebooks.com for used books) which disclose shipping charges with product information, rather than waiting until the last checkout step (when you're more committed to purchase). Or simply complain about shipping so a site can discount it for you. And consider abandoning your cart if surprise charges are too high; some sites (such as stupid.com) notice incomplete checkouts and send "come back" email with codes for reduced or free shipping.

Understand return policies. Don't buy unless you're sure you'll keep it or you can make a return work. Return what's not wanted promptly. Letting it linger runs out the clock on when it can be returned and reduces motivation to act.

Claim rebates promptly, follow instructions precisely, keep copies until you're paid, and follow up aggressively if there's unreasonable delay. If the rebate processor (almost never the actual seller) refuses a rebate capriciously, complain to the seller. They may fix the problem through a credit of some sort. Stores and manufacturers love people who waste rebates; don't be one of them.

Evaluate extended warranty offers skeptically. They're usually bad deals but sometimes pay off, depending on costs and protections offered. Watch out for sneaky renewal offers: I was

offered a renewal on a five-year old TV warranty, with very small print disclaiming protection for TVs more than five years old. I'm sure Samsung would have happily taken my payment, then denied service. So they couldn't lose -- if I filed no claim, they'd keep the premium. If I filed, they'd refund it without fixing the TV.

Don't mangle packing material more than necessary or cut tags/labels/etc. until you're sure you'll keep it at least a while, if not forever. Immediately plug it in, turn it on, try it on, take it for a drive: do whatever's necessary to verify that it's not an immediate loser. Don't run out the no-questions return period.

Report problems promptly and follow up aggressively. Nil carborundum illegitimi (don't let the bastards grind you down) with nonsense delays and denials.

This article appeared originally on the slickdeals.net Web site, <<http://slickdeals.net/>>. (c) Gabriel Goldberg 2010. Permission is granted for reprinting and distribution by non-profit organizations with text reproduced unchanged and this paragraph included. Please email slickdeals@gabegold.com when you use it.

PC Cooling - Keep it Cool!

**By Phil Sorrentino, President, Sarasota PCUG, FL
February 2011 issue, Sarasota PC Monitor
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Just like your car, your computer has to be cooled because it generates a lot of heat. Some of the computer's components produce large amounts of heat during operation, and this heat must be removed in order to keep these components within their safe operating temperatures. PC Cooling, then, is the process of removing the heat from the computer's components. Components which produce heat and are susceptible to performance loss and/or damage due to that heat include integrated circuits, such as the Central Processing Unit (CPU), graphics processors, chipsets, and memory. Hard drives also produce heat but typical air flow is usually adequate to keep them within their operating temperature. (Although some of the very fast drives (10,000 rpm), may need additional cooling.)

Most of the heat produced in a computer is generated by the power supply, the CPU and possibly the graphics processor. That's probably where you'll find the additional fans (beyond the normal chassis cooling fans). You might not think such a small electronic chip, the CPU, could generate so much heat, but many modern CPUs need a separate fan mounted on a heat-sink to remove all of the heat generated. Overheated parts generally exhibit a shorter maximum life-span and may give sporadic problems resulting in system freezes or crashes. PC Cooling is mainly done using heat sinks to increase the surface area which dissipates heat, fans to speed up the exchange of air heated by the computer parts for cooler ambient air, and in some cases soft cooling, or the throttling of the speed of some computer parts in order to decrease heat generation.

First a little thermodynamics review. A heat-sink is an object that moves heat from an object that it is trying to cool, to a lesser hot area or object. It absorbs heat from an object, and transfers that heat to another object or the surrounding air. In the computer, a heat-sink, usually made of aluminum, is placed in direct contact with the CPU chip. A thermal grease is used to help the heat transfer from the CPU chip to the heat-sink. The heat is then typically transferred to the ambient air (the lesser hot area). The heat sink helps cool the CPU by transferring heat from the CPU, at a relatively high temperature, to the ambient air, at a relatively lower temperature. This transfer of heat keeps the CPU from overheating and possibly shutting down. The most common design for a heat-sink is a piece of metal with many fins. The large surface area due to the fins results in the rapid transfer of heat to the surrounding, cooler air. A fan improves the transfer of heat from the heat-sink to the air by moving cooler air between the fins. This is how the combined heat-sink and fan work to cool down the CPU chip.



Now all that may seem a bit academic, but the point is that the components inside the PC must be cooled. You know how good you feel when you turn on a fan on a hot day. The heat-sinks and the fans are necessary for your computer to continue operating. So, if your fans stop or your heat-sinks stop being effective, your computer will eventually stop operating. If a fan stops it is usually easily noticed either by seeing it stopped

when the computer is on or the lack of air flowing or the lack of the sound of the fan motor. It's the heat-sinks operation that is hard to determine. The best way to discern the operation of the heat-sink is to look at it. (Yes, that means removing the cover.) It should be nice and shiny and new looking, and not covered with dust or animal hair. Dust covering the heat-sink will impede its ability to transfer heat to the air, even if the fan is moving the air over the dust laden heat-sink.

A visual check of the cleanliness of the heat-sinks every 3 to 6 months is advisable. (Maybe even more often if your computer is in a dusty environment, {like in the corner of a room on a rug}, and/or you have furry pets in the area.) Make sure you unplug the computer before you do this. While you are in there checking, take a can of "dust remover", which is like compressed air, and blow out all of the dust you can see, especially around the CPU heat-sink. Also, make sure all of the inlets and exhaust holes in the case are free from dust and debris so that the normal air flow will not be disturbed. That can of "dust remover" is your best defense against dust buildup both on the heat-sink surfaces, and around the air holes. (Keep a can of dust remover close at hand and give a package of them to your computer owning friends during the holiday season.) Follow the directions on the can. Be especially careful not to hold the can on an angle or upside down, as doing so may force out a flammable freezing liquid. (Note that it is normal to feel the bottom of the can getting cold while the can is blowing air.) If you blow out the dust every 3 to 6 months, your computer should run nice and cool for many years, and you'll be spared some very strange and possibly aggravating problems.

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What a nasty virus can do to your computer

By Merle Nicholson, Secretary, Tampa PCUG, Florida

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I recently was asked to remove a virus from a friend/client's notebook. For all intents and purposes, it rendered the computer completely in-operative. The virus was in a virus category of "Rogue antivirus software." There are many of them out there for the unwary to catch, and this one, called "ThinkPoint," even has the Windows flag on it to further fool you into thinking



it is legitimate. The only option you can see is "Safe Startup," and that takes you to a virus scanner and a way to purchase the product. If you close it out, it shows you a blank desktop, no icons, no menus. You can turn the machine off, that's about it. Turn it back on, same situation. I did figure out a way to kill it through the Task Manager's Run command, and then run the desktop. I also found some things written up on the Internet to do something similar, but no help in removing it. I did remove it using some very clever, obscure skills, several virus scanners, then finding and removing twenty or so copies of it. But the computer really didn't work well enough to use. What I found surprised me,

and this is what the article is about and what you can do.

Here's a list of what I found. Some things are by deduction and may not be 100% accurate. But I am 100% certain that these problems existed. All of the things fit into a strategy that prevents you from fixing the computer.

1. The worst thing: The computer will not boot into safe mode. It blue screens every time. I'm speculating that ThinkPoint either corrupted an existing driver or put a new one in that loads and then fails. The way to fix this is to do a system repair or a complete reformat and installation. I did not want to impose that cost on my customer, and she agreed (it's not a primary computer, and it's rather old). So I left it that way.
2. All the system restore points were unusable. Refused to restore to any point.
3. To run most anything, an official-looking popup would ask to confirm the logon user and give a box for an alternative user account that did not work. This is to make sure that everything you try is run under the current user account which has been modified to prevent circumventing the virus. What you want to run is Explorer.exe giving you your desktop, and every effort is made to prevent you from doing this.
4. Most – perhaps all – items in Control panel will not run. It gave a warning that the administrator account has restricted its use. I did manage to get into the power configuration, but it would not accept any change. The computer would go into sleep mode after about 20 minutes, keeping me from running a full system scan from any antivirus software unless I sat there and wiggled the mouse occasionally for four hours.
5. The Internet articles say that even if you purchase the software to fix a bogus virus, ThinkPoint stays on the computer. The uninstall just errors out.

6. The Internet articles say that it installs other viruses, and I did find a half dozen other viruses, mostly downloaders.
7. It leaves about 20 copies of itself under various random names, and places items in the registry to run each of them. So removing the active virus is just the beginning. I also found a couple of viruses in the System Restore files.
8. It apparently makes changes to the current user account profile that look like group policy changes, even though this was Windows XP Home, which doesn't have group policy capability.
9. Only after all the bad software is cleared from the machine can you then get rid of the modified account by creating a new administrative account, copying all of the user files from the old to the new – except for the profile files, then deleting the old account after locating the email files.

Isn't this scary? It is to me, and I (95%) fixed this one with a lot of work. The idea of having to fix my own machine after something like this gives me nightmares.

What you can do to prevent this: A sizable number of virus infections now are rogue anti-virus'. There's an understandable reason for this. It creates revenue. Old-fashioned viruses are malicious, but have no revenue-producing strategy. In other words, it's now about money. Most all viruses are sent to you via web pages, and most of those are porn sites, either designed that way or hacked from outside. Porn sites are visited so often, they are a very good candidate for this kind of thing. Also, presumably the porn site owners don't have the skill to remove sophisticated hacks. But most any web site is vulnerable. In any case, you must select something on the site – click on it – to give the browser a chance to violate security rules.

The next common way to get a virus is with downloads. And that means just about any download or file transfer. So you have to get any and all files from reputable sites like iTunes or Downloads.com, Amazon etc., which have the resources to check their own content.

But that leaves any and all file-sharing sites absolutely and definitely off the list. So if you're downloading songs for free, you're in trouble. Any file-sharing site's software must be uninstalled from your computer.

And that also goes for any peer-to-peer gaming sites, LimeWire, Kazaa, and any and all IM programs that allow peer-to-peer file exchanges.

And while we're at it, remove – uninstall – anything that says "Toolbar." Right now. Want to know why toolbars are free? Because they're a conduit for pushing advertising to you; and they're easily exploited. Besides you don't need them. They want you to believe you do, of course! But the browser itself and a couple of favorites will do anything a toolbar will do.

An alternative is giving up gaming and IM and to start purchasing songs. So if you have kids who will just die without peer-to-peer gaming or IM and stealing songs, the answer is to live with it with some intelligent prevention.

First, if at all possible, put the kids (and maybe grandpa) on a Windows 7 machine. If you have some internal networking and file sharing, Windows 7 Pro is better because it will back up to a network drive. But so will Acronis Home, or 2010 or 2011, running under Win 7 Home Premium.



Make sure you have a full system backup, and replace it monthly. Use Windows 7 Backup or Acronis. Believe me, restoring the entire system hard drive is way, way better than any alternative that I can think of. Look at what I had to do with ThinkPoint. Want to try it?

I guess it's obvious, but a strong anti-virus program running on your machine is essential. BUT – this is important – make sure you look at the scheduling part of it and make sure it will automatically download new definitions and also run a full system scan at a time of day that the machine will most likely be turned on. Same for Windows Updates. Make certain that all important updates are installed as soon as they are available.

Password protect your main administrative account (this is the one that comes first with the computer) and bury the password paper in the back yard and leave the location with your attorney. Better yet, Win 7 allows you to create a flash drive that will unlock the computer. Hide it under some rubber fake dog poop someplace.

THEN: Create a non-administrative account for yourself – a regular non-privileged account, and a separate one – or one for each kid. A regular account cannot install software. But most importantly, SOFTWARE that is run under this account can't install software. Ah HA!

Then one more step. Set the screensavers to require a sign-in on wake-up, and ALWAYS log off when you leave the computer. That's especially essential when leaving the administrative account.

Skills: There are a few things that would be very helpful to learn. The big one is navigating the computer file system using Windows Explorer. Find out how your files are organized, and more importantly, how to change what files you can view. That's in Windows Explorer, Tools, Folder Options, View tab. Second Important Skill – learn to use the Add, Remove Programs. That's "Programs and Features" in Vista and Win 7. When you find an installed program that you are not using (say, anything with the word Apple or toolbar), just uninstall it, and see how it goes.

IRS Affiliates Once Again Offering Free Online Filing

By Ira Wilsker, Member, Golden Triangle PC Club, TX
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WEBSITES:

<http://freefile.irs.gov>
<http://www.irs.gov/efile/article/0,,id=118986,00.html?portlet=6>
<http://www.irs.gov/ita/index.html>
<http://www.irs.gov/newsroom/article/0,,id=235215,00.html?portlet=6>
<http://freefile.irs.gov/get-more-information.html> (States that have Free Filing)

It is again that time of year that we are receiving those dreaded W-2 and 1099 forms. This year due to a local holiday in Washington, DC, we actually have until April 18 to file, rather than the traditional April 15 that we have all come to approach with trepidation. The Sunday newspaper sale books, big box stores, and online retailers are rife with deals on tax preparation software, including big discounts, rebates, gift cards, package deals where the tax software is bundled with other software; one big box store is even offering the major tax software titles with a \$15 gift card and up to \$1200 worth of other non-tax software programs at deep discounts, many of which are "free after rebate" (read the details in the store carefully before the purchase!). The TV and newspaper are loaded with advertisements for commercial tax preparation services, and one local tax preparer has some poor soul standing for long hours on the street corner outside of his temporary store front location, wearing a foam Statue of Liberty costume, and carrying a sign touting the tax service.



Depending on our individual circumstances, we have a lot of options that we can utilize in order to complete this annual event. Many of us still choose to use the traditional pencil and paper method to fill in the blanks on what we hope is the correct tax form. Others have decided to use one of the many independent or franchised tax services that spring up in retail stores or in vacant store fronts every spring, like mushrooms on my lawn after a heavy rain. Some choose to use the expertise of CPA's to prepare their taxes, while millions of others purchase

commercial tax software to prepare their income taxes. Once again there is a free alternative available to millions of people to prepare their federal income taxes, and that is the FreeFile service offered by the 16 participating members of the IRS approved "Free File Alliance". For those who still desire to do their own tax calculations, there is also one additional IRS approved provider who offers simple online forms that can be filled in by the user, calculated by the user, and then e-filed, all for free.



Visitors to the IRS FreeFile website at freefile.irs.gov will find the process easy to navigate and use. According to the IRS, everyone, regardless of income and

circumstances, is eligible to use at least some of the free online services. At the FreeFile website, the user follows three simple steps to prepare, calculate, and file his taxes. First, the IRS suggests that the user gathers last year's tax forms, as well as this year's (2010) W-2, 1099, and other tax statements. The IRS then requests that the user calculates his "AGI" or "Adjusted Gross Income" to determine which of the free services he is eligible for. Wikipedia defines AGI as the gross income " ... less allowances for personal exemptions and itemized deductions. Adjusted gross income is gross income less certain specific items." The reason for this preliminary determination is to determine the individual's eligibility for any or all of the 16 free online tax services. Individuals or families with an AGI of less than \$58,000 may be eligible for the free online tax services, while those with an AGI of more than \$58,000 can still use the free online forms to calculate their own taxes, and then use the free e-file service. According to the IRS, about 70% of all taxpayers are eligible for the free full-service online filing by having an AGI of less than \$58,000

The second step is to either select a FreeFile provider (if eligible), or to use the free online

forms. A wizard is available to help the user select a free provider, or the user can select from the list provided by the IRS. The wizard asks a few questions to determine the proper provider, these questions being your age, your AGI, your state of residence, eligibility for an earned Income Credit (if known), and if you or your spouse earned pay from the military. Answering these few questions will present the

Welcome to H&R Block Free Edition

Returning User

Username

Password

[Unable to access your account?](#)

☐ Remember my username on this computer

[Go To My Account](#)

New User

[Create My Account](#)

[Start Without an Account](#)

eligible user with a list of IRS approved providers who will offer complete online tax calculations and e-filing services. For the eligible user who desires to manually select his provider of free federal tax services, many of the providers will have familiar names. Some of the best known providers of the free online tax service include H&R Block (Free federal online tax

return preparation and e-file if your adjusted gross income (AGI) is \$58,000 or less and you are age 51 or younger. This federal offer is valid in all states; TurboTax (Free federal online tax return preparation and e-file if your adjusted gross income (AGI) is \$31,000 or less or if you are active military with an AGI of \$58,000 or

less or you qualify for the Earned Income Tax Credit. This federal offer is valid in all states); and TaxAct (Free federal online tax return preparation and e-file if your adjusted gross income (AGI) is \$58,000 or less and you are age 19 through 55. This federal offer is valid in all states). Other FreeFile providers have specific state residence requirements, military pay, other lower income requirements, or age requirements. All of the free providers use sophisticated tools and strategic online interviews to properly prepare the user's taxes, and perform all of the calculations. As long as the user accurately answers the online questions, and correctly enters the requested information, all 16 of the FreeFile providers will provide accurate results. It should be noted that while all 16 providers will likely do a satisfactory job completing federal tax forms, none of them will complete state tax forms for free; most of them will complete state tax forms for a fee, typically in the \$10 range, but the state fees do vary. The IRS has also compiled a list of the 22 states that have their own free filing services, and this list is available at freefile.irs.gov/get-more-information.html.

The third and final step is e-filing the tax return. All of the listed FreeFile providers will electronically file (e-file) the completed tax return utilizing a secure encrypted system, directly with the IRS. A digital confirmation receipt is generated, and the user can track the progress of his refund, if a refund is due. the user can also print a copy of his completed tax forms for his own records. The user can optionally select to have his refund (if any) direct deposited into his existing bank or credit union account, which will be deposited much faster than waiting for a paper check in the mail. According to the IRS website, users who e-file and have a refund direct deposited can expect the refund to be posted to his account in as little as 10 days. If a balance is due the IRS, the user can select to pay the IRS directly by check or money order, or for a nominal fee to pay the IRS electronically online.

The IRS has set high standards for safety and security which the Free File Alliance participants are committed to abide by. According to the IRS, the user may want to use the FreeFile service (if eligible) because it is "Fast, Safe, and Free". According to the IRS, over 30 million taxpayers have taken advantage of the FreeFile system since its inception. Available 24 hours a day and seven days a week, the FreeFile system is readily accessible, easy to use, and can provide a valuable service to the taxpayer. An entire federal tax return can be prepared and sent to the IRS from the user's computer, without the need to go elsewhere or buy anything. The system is safe and secure, and can be used by those eligible at their convenience, but remembering the April 18 deadline. For those who are eligible, and about 70% of you are indeed eligible, this FreeFile service provided by the IRS and the 16 members of the FreeFile Alliance may be a very worthwhile way to quickly complete this sometimes troubling annual task.

Ira Wilsker is a member of the Golden Triangle PC Club as well as Director of the Management Development Program at Lamar Institute of Technology, in Beaumont, TX. He also hosts a weekly radio talk show on computer topics on KLVJ News Talk AM560, and writes a weekly technology column for the Examiner newspaper <www.theexaminer.com>. Ira is also a police officer who specializes in cybercrime, and has lectured internationally in computer crime and security.

Panoramas using GIMP

By Cal Esneault, President and leader of many Open Source Workshops & SIGS

Cajun Clickers Computer Club, Louisiana

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Small point-and-shoot cameras are great to carry around on vacation. However, due to the smaller geometry and limited angular response of digital sensors, wide-angle shots are limited. One solution is to take slightly overlapping shots and combine them during post-processing into a single scene. Below are two photos I took from a hill overlooking a scenic harbor. Even at the widest setting, I was not able to capture the whole scene.

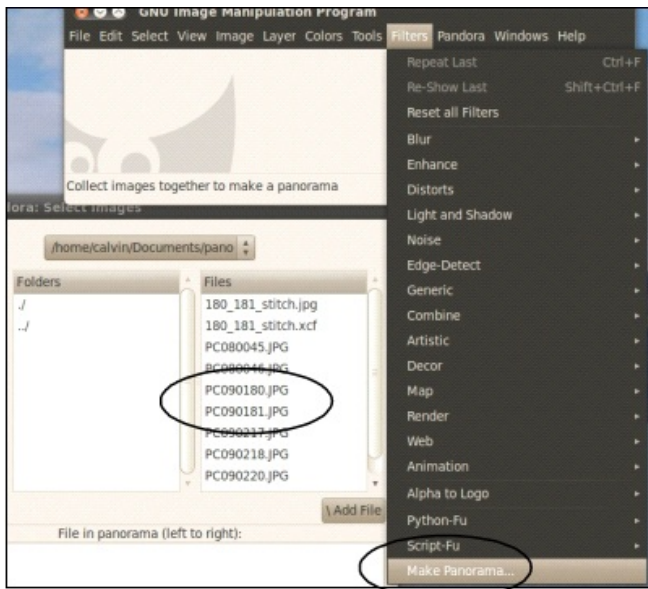


GIMP is a sophisticated open-source photo editing tool which is available as a free download for most operating systems (Windows, Linux, Mac OS). To create panoramas, however, you have to download a plug-in called Pandora. Once you have it installed, you find it as the last item in the Filters menu (see screenshot). Clicking on this item will open an image loading dialog from which you select the pictures you want to merge (the two pictures I selected are circled).

Upon opening the image files, you

will find that they are on multiple layers, and Pandora has automatically shifted the images so that they are aligned. This is not always perfect, so you may have to select one of the images and shift it using the Move tool.

The recommended procedure for panoramas is to determine the exposure, match this exposure in manual mode, and then take all pictures at the same setting. Unfortunately, my simpler camera didn't allow for this, so the auto-exposure for each picture was slightly different. Any exposure variance is readily seen when the pictures are super imposed. Using the GIMP brightness control for one of the layers, I could easily adjust the picture to have uniform exposure for both layers.



GIMP saves pictures in a native “.xcf” format. Prior to exporting this image to the more conventional “.jpg” format, I had to Merge the Layers and Flatten the image.

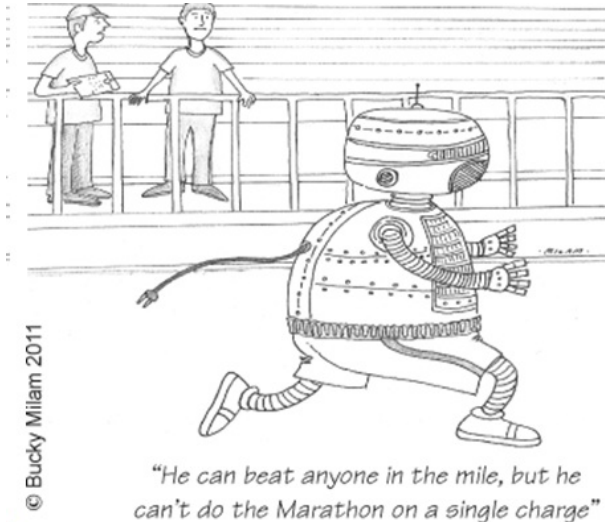
Then, using Save As, I gave the picture a name with the jpg suffix (a conversion tool is embedded in the program, and you can adjust the picture quality for saving).

Below is the final panorama shot showing the much broader view. Making panoramas is a good way to get these wide shots without having to carry around a much heavier DSLR. It takes a little practice, but the technique is within the scope of most users.





The Lighter Side



Bucky Milam is a master of the fine arts, with an emphasis on the cool and casual. He is the recipient of numerous awards for his painting and graphic design, which has been displayed at the Dallas Museum of Fine Arts, the Museum of Modern Art, the Chicago Art Institute, and the London and Tokyo Museums of Fine Art. A trumpet virtuoso, he performs widely in clubs throughout the region and is a recognized composer of jazz and classical music for brass. Bucky comes to computing as an accidental tourist. His peculiar perspective is of the visual media and the image they project of our civilization and culture. You can find his musings in each monthly issue of dacs.doc. (Danbury Area Computer Society)

Smart Computing Tips

www.smartcomputing.com

Noise Canceling Technology

Although headphones with noise-canceling or sound-isolating abilities aim to accomplish the same goal, namely keep the audio you're listening to clear and crisp while blocking ambient noise surrounding you from creeping in, the two techniques aren't the same. Makers of noise-canceling headphones typically use software to achieve noise-blocking ability. These models usually require battery power (usually two AAA batteries) to power the company's respective noise-canceling technology. Sound-isolating models, conversely, don't use battery power and are much lighter than noise-canceling models that use over-the-ear headphone styles. Sound-isolating headphones use earbuds and a combination of ear cushions and filters that attach to the earbuds to create a seal inside the ear canal to keep noise out.

Pack Your Camera

You might leave your digital camera at home during business trips, but a digicam doesn't have to be just tourist baggage—it can be a powerful tool. Together with your notebook PC, you can use your camera to better illustrate a presentation. And while you're at a trade show, you can use a camera to take pictures of interesting products that you might otherwise not remember. What's more, you can use a camera to capture text from a presenter's notes, or from a brochure that you'd rather not lug back home.