



MEGAPHONE

THE OFFICIAL NEWSLETTER OF THE CENTRAL MARYLAND USER GROUP

President's Message News (or at least Goodies) from the Front Lines *from Mike Kerwin*

As I write this, I am reading the news that the No. 1 al Qaeda rep in Iraq has been "neutralized", but my reference to the Front Lines refers to another form of war – that on Cancer. I am just back from attending a scientific conference in Atlanta where 25K+ health professionals got together to learn the latest news about cancer research from each other and to take the information back to implement in patient treatment.

I am a health scientist rather than a clinician and I work with the leading researchers across the country, but I have to admit that the findings reported at the meeting left me more confused than before I went. I don't know how the general public is supposed to cope with the conflicting findings and recommendations. Just as

examples, my employer – the National Cancer Institute – came up with a catch phrase to help reduce the current epidemic of melanoma (skin cancer) – Slip, Slop, & Slap: Slip on long clothes, Slop on the sunscreen, and Slap on a hat. At this meeting one of the leading MD researchers in the country chaired a session asking the question: "Does Use of Sunscreen Prevent Melanoma?" Reading that title, you won't be surprised to learn the answer is basically, "We're not sure." Several researchers expanded on the theme that sunscreen is designed to prevent sunburn, not melanoma. This distinction has to do with the wavelength of UV causing problems and the protective spectrum range and application density for sunscreens. What a messy world we live in (no pun intended for issues with sunscreens).

So much for my meeting-induced information

overload; what does this have to do with digital devices? The answer has to do with tchotchkes (aka, all those knickknack giveaways, plastered with logos). Since health care is currently a highly profitable field and the MDs are gatekeepers for patients to access the expensive medications and other treatments, they are a highly sought after audience. For comparison, I go to chemical society meetings, and a typical incentive would be a small bag of popcorn. At this meeting, there were so many cappuccino machines around that some had no lines and were begging for customers. One booth gave away Dove ice cream bars ad infinitum.

I did enjoy some frozen yogurt, sorbet, and cookies, but for me the real treasures were the digital devices offered in great abundance. I took a collapsible bag with me to bring home goodies, and I needed it. One of my starkest memories is of two women loaded down with two goodie bags apiece plus their purses



Next General Meeting

Rob Pegoraro from the Washington Post will discuss how he decides what hardware or software to include in his column, what makes for a good review, and technology journalism in general.

Wednesday, June 21, 7:30 pm.....Florence Bain Senior Center

Elections:

- ↪ Elections are at the June meeting.
- ↪ Candidates appearing on ballot:

President: Mike Kerwin	VP: Mike Hayes
Treasurer: John Weske	Secretary: Mary Guarneri
- ↪ Or you can write-in a vote for any member.
- ↪ Only members can vote!

Next Windows SIG Meeting

Topic: What's Inside Your PC (besides the dust bunnies)?

Tuesday, June 27, 7:00 pm.....Florence Bain Senior Center

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and together literally dragging another bag on the ground between them.

I came away with lots of laser pointers, special multi-function pens, and assorted digital goodies all with company logos on board. On my return, I trekked down the block to give one of the pens to my personal physician. I had seen him entering data on a PDA using an ordinary ballpoint pen – I had a fingernails on the blackboard experience as that is a sure way to damage the touch screen, just like the signature machines for credit card swiping at Circuit City. I gave him a pen with a plastic cover incorporating a PDA safe pointer, a ballpoint within and a light on the other end.

I am keeping the universal cellphone charger – a box with a small transformer and a cable with lots of different end plugs for the different phone brands. I am keeping the case full of ZipLink gear for notebook computers. Another place offered a CellBoost disposable cellphone battery which I did not qualify for at the last CES – it is good to feel appreciated. The coolest gadget though has got to be the portable WiFi detector. It now resides on my keychain. That's right, it is about the size of a car's remote entry device. Unfortunately it was made in China and something seems to have been lost in translation. When I push the button to activate it, a green light comes on and stays on if no signal is detected. If the device detects either 802.11 b or g, a yellow light comes on, and if one approaches an access point the red light comes on; for really hot spots, it beeps. This is the translation issue as generally we think of green being the Go signal and red as Stop, but here red signals the on-ramp for the Internet. Ask me and I'll be glad to display my prize, I even had to answer three questions correctly to qualify for this item.

Another piece of digital wizardry was the BlueFish station in the convention center. At this location one could download the entire meeting program of session titles and times into one's PDA (Palm or PocketPC). How did they do that trick? I don't know how the device could tell which device I had, but it worked and it was lots easier than carrying around the 8.5 x 11 x 1.5" paper meeting agenda and tons lighter as well. This name is also quite appropriate as two blocks away from the convention center is the new Georgia Aquarium whose logo is a Blue Fish with a G in its mouth. I toured it one morning and was duly impressed. The youngsters loved being able to touch all sorts of water creatures (no electric eels though). This building was built with corporate contributions (notably from Home Depot) and other support with identifying "scales" in place of bricks and a computer to help individuals locate their scale on a large wall. The biggest tank there accommodates a large number of fish including now four whale sharks – they are truly awesome. It reminds me of the Star Trek movie in which Scottie built a tank to take two whales back to the future. There are so many fish that folks are enthralled watching them, especially the little folks.

Did I mention that despite all of the edible goodies offered at the meeting, I came home lighter?

For a meeting this big the working sessions are generally spread over several buildings and the only way between is by walking or power chair (not yet). This meeting used space in three separate buildings connected only by a bridge layer on the top floor so every new location meant up and over.

Brief News Items

Two other items I would like to touch on here: Windows Defender and an odd form of SPAM. First I have mentioned in past that the new version of Windows Anti-Spyware was called Windows Defender. It has tried to install on my machine several times and each time it failed for some verification step. Finally last night it successfully installed, updated itself, and is on the job.

Second, when I returned from my traveling, I checked my work email and found one message from one of my assigned addresses to another; this message is odd in that both the Subject and Message fields consist of a single, different, 3-digit number. This looked suspiciously like a virus attack so I contacted our tech support and learned that others have noticed similar messages. The advice was to ignore the message as spam and delete it.

Meeting News

I'm sorry to have missed the last meeting, but we were cruising far away with only a very slow satellite dish for Internet connecting. I trust that all went well.

For this month we will have Rob Pegoraro, consumer tech columnist for the Washington Post, will explain how he decides what hardware and software makes his column, and what leads to a good review.

Also we will be electing officers for the next year – see you there.

Digitally,

Mike



Upcoming Meetings

Here's is what we have planned for the next few meetings. To suggest a meeting topic (especially if you can suggest a possible speaker for the topic), please talk to me at the meeting, or via email at cdlots@yahoo.com.

- Andrew Rein

July 19: Vic McGonegal, from Computer Seniors of America (www.computerseniors.org), will talk discuss his organization, which is an "entryway to cyberspace for the mature citizen." He'll discuss the philosophy, principles, and operations of a volunteer-staffed computer school, where they try to make the complex, "simple and fun."

Deals from the DealsGuy

by Bob Click, Greater Orlando Computer Users Group

We worked some great trade shows last month including the McDonald's Worldwide show. Attendees were from around the world and food was all over that show. Most of the food was from around the world and didn't appeal to me at all, such as the burgers with "rice burger" buns, and the shrimp burgers. An attendee could take a 15-minute tour showing some of their methods for preparation and quality control, then get a Big Mac and fries. Another day I had the largest Big & Tasty (a McDonald's burger selection) I ever saw. An ice cream booth continuously gave out plenty of cones and sundaes.

I was stationed at some exit doors one day and heard music I knew was hit country & western music. I finally looked inside and there on a small stage was Jo Dee Messina, live, performing some of her hit songs. There were only about 100 people there, but it was an unannounced performance sponsored by an exhibitor. I also worked at a door for their sessions area (including concerts) during a rehearsal by Destiny's Child. While I enjoyed the music, I was extremely impressed by the sound system setup for that concert. A convention hall is very difficult to get quality sound unless expensive speakers are used that specifically direct its sound to control reverberations. This was one of the best sound systems I have heard in those halls. I'm sure there was easily a million dollars worth of sound and video equipment there.

We just finished working the SAP Sapphire Show (www.sap.com/sapphire) that was combined with the ASUG (Americas' SAP Users' Group: www.asug.com) show with about 14,000 attendees. Very few major companies were not represented. I was told that attendees paid anywhere from \$1600 to \$2400 depending on the Sapphire Show category they registered for. Fortunately, I was watching the computers for registration. They had food daily for their staff and I was invited. In July we might work a Microsoft show that will be one of the largest trade shows ever held in Orange County Convention Center.

Do Your Homework!

Below are some announced freebies and I am passing them on with reservations since I have not tried any of them. I asked my proofreader, Bob Clyne, to just take a look at the announcements and will include some of his comments. The first product might pique your interest, as it did his, but be sure to look it and the others over thoroughly before you make your decision to try them. I have edited the announcement text down to the essentials, so go to the websites listed for more complete information.

DVD Copying Anyone?

ShrinkTo5 has released version 2.02 of ShrinkTo5 GUI, a new DVD copying engine distributed at no cost. This application lets you copy and shrink your favorite DVD disks in brilliant quality, which is complemented by a surprisingly high processing speed. You can copy an entire DVD, copy the main movie only, or copy its content elements selectively. The output can be saved to the hard disk drive as an ISO image or compressed and burned onto one DVD disk. The best thing in copying DVD disks with ShrinkTo5 is that it no longer involves tedious and sometimes confusing configuration. ShrinkTo5's AI chooses the perfect balance automatically.

DealsGuy Note: Bob Clyne says the free version contains Adware, WhenU to be specific, and recommends against it. He also says the \$19.95 version, containing no adware, is available from Download.com and you can try it for three days before you have to buy it. He suggests getting the Machinist2.dll before getting ShrinkTo5 if you intend to copy encrypted DVDs. The program will not work on encrypted/copy protected DVDs i.e. most commercial DVDs, without the Machinist2.dll, which for legal reasons, they don't supply. The

Machinist2.dll can be challenging to find, but he did find it a few places, some of which were Warez sites.

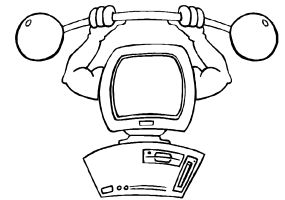
Some of the features for ShrinkTo5 GUI are:

- ↳ Support for Machinist2.dll. The program has been modified to support new Machinist2.dll. Now, ShrinkTo5 has a unique ability to make DVD backups that cannot be handled by other DVD



Windows SIG June 27 Meeting

The Windows Special Interest Group (SIG) meets on the 4th Tuesday of each month. The SIG focuses on using and maintaining Windows, all platforms. We take questions, present tips and techniques, demonstrate freeware/shareware and even feature some web topics using a little trickery.



This month, our topic is "What's Inside Your PC (besides the dust bunnies)?" If you have a suggestion or a topic for the SIG, please email me at mikes_line@hotmail.com.

Remember that the meetings are now at the Florence Bain Senior Center, and begin at 7 pm. See the CMUG website at www.millkern.com/cmug for maps and directions.

- Mike Hayes



copying software like DVDSHrink.

- ↳ Free burner plug-in. The ShrinkTo5 GUI package comes with FoxBurner, a shell plug-in that allows you to burn directly from the Windows Explorer. You don't have to donate or download a burner separately.
- ↳ ISO Image. Along with burning onto DVD disks, copied images can now be saved as ISO images on the hard disk drive and burned onto disks later if the need arises.
- ↳ Auto-Repair. New ShrinkTo5 lets you automatically restore scratched and defective DVD disks so that their content can be accessed and copied.
- ↳ Dynamic Compression. The code of the dynamic compression rate has been enhanced, which now allows users to get an even sharper picture.
- ↳ Built-in Player. New ShrinkTo5 features a built-in player that allows the user to view selected video tracks. This gives you more control over the copying process.



Read more

information about ShrinkTo5

GUI at www.shrinkto5.com/software.asp.

Watch the online tutorial demo at:

www.shrinkto5.com/gTour.asp.

ShrinkTo5 is available as Basic and Professional. Both versions run under Windows 2000/XP. The Basic version is available as a free download from www.shrinkto5.com/software.asp. The Professional is available as a three-day trial. The price of the Professional version is \$19.95 download, or boxed for \$24.95 plus S&H. Both versions are compiled without DeCSS. To enable ShrinkTo5 to decrypt CSS, users should download "Machinist2.dll" from the Internet.

Product page link: www.shrinkto5.com

Download link: www.shrinkto5.com/_data/

ShrinkTo5AdFree.exe (4.8 mb)

Email: info@shrinkto5.com

Might Be a Good Service, and Free!

Trisnap Technologies has released System Spyware Interrogator 3.0 Tech Edition. "They say that, "System Spyware Interrogator (SSI) is a free tool that detects and removes malicious software from clients' computers. It uses Trisnap's unique Predator technology to compare applications running on a client's computer with an online database of spyware definitions to immediately reveal all suspicious applications. The consumer edition of System Spyware Interrogator offers monthly, quarterly and annual priority fee-based automatic removal options. The Tech Edition also offers Alternate Directory Scans, File Hash Generation, Intelligent HijackThis log parser and a memory process killer. SSI is linked directly to one of the largest malware databases in the world at

www.spywaredata.com."

DealsGuy note: Note the fee based options! You'll find out more on their website, but Bob and I had trouble understanding it.

Learn more about Tech Edition at www.spywaredata.com/spyware/download.php.

Download and try it in action from www.spywaredata.com/download/ssisetup.exe

SSI 3.0 Tech Edition runs under Microsoft Windows 2000/XP/2003. Additional information on the product, as well as its free version is available from www.spywaredata.com.

Protect Those Passwords, OK, and Free Too!

Aurora Password Manager is a tool to protect your passwords. The program uses a strong encryption mechanism which prevents unauthorized access (256-bit AES - Advanced Encryption Standard). Every user can create a file of his/her own (the program is virtually an SQL database, featuring simultaneous work of several users). In this file, every user has a hierarchically structured list of folders (you can create the new ones, delete, rename, etc.). Each password record you add to one of these folders contains the following fields: subject, user name, password, URL, file path, comments. The user has an ability to create an unlimited number of extra fields to store data. In addition to this, you can set an expiration date for your password.

Aurora Password Manager has a built-in password generator, which chooses arbitrary combinations of symbols and generates passwords that are impossible to guess. Get the feature list from the website. Bob Clyne commented that, "I did not see a privacy statement on their website. They do have a bunch of awards listed on their website, but none of them were from places I had heard enough about to have confidence in. I did not find anything bad about the company or the product."

Aurora Password Manager runs under Windows 98/Me/2000/XP/2003. You can download it at www.animabilis.com/password-manager/download/Password-Manager-Installer.exe (2.1 mb).

Product page link: www.animabilis.com

E-mail: egorov@animabilis.com

That's It for This Month

Meet me here again next month if your editor permits. Visit my website at www.dealsguy.com. This column is written to make user group members aware of special offers or freebies I have found or arranged, and my comments should not be interpreted to encourage, or discourage, the purchase of any products, no matter how enthused I might sound.

- Bob (The Cheapskate) Click
bobclick@mindspring.com



Whose Windows® Is It?

Microsoft's End User License Agreements

by Mike Hayes

We've all had versions of Windows on our PCs. Most have had several versions of the operating system (OS) through the years. If you have been a PC user for more than 10 years then you probably had Windows 3.1 or earlier. I know some of you even had DOS, the forerunner of the graphics user interface (GUI) OS and may even still use it, but in general the Windows GUI has been the choice of OS for quit some time.

You either installed Windows on a PC from a CD or you received a Windows license pre-installed on a new PC. Each time you installed Windows from CD or setup Windows pre-installed, you agreed to Microsoft's End User License Agreement (EULA). You checked the "I agree" option to continue. Did you read what you agreed to? Do you know what your obligations are regarding the use of that licensed copy of Windows?

Can you install it on a second PC you own and use, like a laptop? Can you put a copy on your grandkid's PC just so they can play games when they come to visit? What happens to the Windows OS when you replace the old PC with a newer one? In most cases, the PC is trashed and no one cares about the Windows license. But sometimes you are a hands-on kind of guy and build your own PCs. It could be that you're building a faster one. Can you use the Windows from the old PC? There are many questions here and the answers are complex, as they depend on a number of circumstances.

Let's start with the basics. From the Microsoft site: "Microsoft licenses software in three primary ways: Full Packaged Product, Original Equipment Manufacturer, and Volume Licensing." So depending on which product you have will dictate what the license permits.

Full Packaged Product (FPP) – Retail

FPP refers to a CD in box (shrink-wrapped) with software that is purchased in any retail store or through an online vendor. This is one product for one PC. If you remove it from the first PC you

can then legally install it on another PC. You can not install it on two PCs at the same time. Refer to: www.microsoft.com/windowsxp/expertzone/newsgroupfaq.msp

Original Equipment Manufacturer (OEM)

This software comes pre-installed on a new computer. It is licensed for the use on only that PC. It may not be transferred or installed on any other PC. That's not hard to understand because you usually get one or more PC restore CDs that will only work on that particular PC model.

Should your PC's hard drive fail, you can replace the HD and use the OEM CDs to restore the PC to exactly the way it was the day you bought it. You can play your own set of "what if's" here, but OEM license is pretty clear. The license is for that piece of hardware. I had trouble getting by this one when I first understood it. I'm from the old school and we always had a CD and a CD Key to properly install Windows. But things change. OEM was created to provide you the OS at a cheaper cost. OEM vendors get volume

licensing and the discount gets passed along to you. And yes, it also helps ease the problem of software pirating,

which just like any other crime, eventually costs the consumer more. If you transfer the PC to someone else, the OS license goes with it.

Microsoft Volume Licensing

This offers companies a way to acquire and manage software licenses on a number of PCs (five or more). I don't think any of us have five active PCs at home, so I won't go into this option.

Summary

For an overview of current Microsoft Window's licensing, see www.microsoft.com/windowsxp/pro/howtobuy/default.msp.

"To help simplify Windows Desktop Licensing, keep these points in mind:

- 1 There are two legal ways to acquire a full Windows Desktop license: through your hardware vendor (OEM/System Builder) or Full Packaged Product.
- 2 Volume licensing covers Windows Desktop operating system upgrades only.
- 3 OEM operating system licenses live and die with each PC—they are not transferable."



Boost Your Signal

A Better Wireless Broadband Connection

by Ken Zimmerman

Wireless Internet access is quickly becoming one of the most popular ways to get online when traveling. Verizon, for example, calls their service "Wireless Broadband"; for around \$60 and a special PC Card modem, you can have 400-700k Internet access anywhere Verizon cell service works. Cingular and Sprint T-Mobile offer similar service.

[Ed. Note: don't confuse this with wireless networking at home. This system uses one of the digital cellular systems to connect your laptop to the Internet. You can surf the Web while driving, or at the beach.]

A signal booster/amplifier and antennas will improve the reception and transmission range when using a wireless card such as the Sony Ericsson GC89 Air Card or the Merlin G2000 (T-mobile and Voice Stream) Wireless PC Card. These types of wireless cards insert into your PC Card (aka PCMCIA) slot in a laptop. A PC Card slot can also be added to your desktop to use the wireless modem card.

The signal booster/amplifier will greatly improve the transmission signal especially where weak reception can interfere with wireless Internet service. Boosters should be used in remote areas and mobile environments where the RF signals are weak or are constantly changing. The *SmoothTalker* booster/amplifier can be used in the home, office, car, motor home, RV and boat.

"Smoothtalker boosters are bi-directional radio frequency amplifiers. They will amplify the receive signal and the transmit signal of the phone. The 'receive side' amplifier uses electrical energy to increase the amplitude of the signal that is in the air, thus giving the signal more energy...

"A Smoothtalker **booster** can increase the range of a cell phone to 60 miles or greater. Increases in distance from a tower are dependent on several factors:

- ↪ **Geographic terrain**- Flat terrain (ocean, lake, desert, plains) with the tower on the horizon will allow communication from greater distances than terrain with obstructions.
- ↪ **Type of antenna**: location of antenna...
- ↪ **Pilot signal level**- the signal strength being transmitted by the tower is directly related to the distance that a phone can communicate with the tower. Remember, the phone is listening to the tower and even if the tower signal is amplified by the booster, a distance will be reached where the pilot signal is low enough where amplification is of no help. Pilot signal strength is set by the cellular provider and is not always the same strength from one tower to another, therefore it is possible to get greater or shorter range depending on the strength of the pilot; for example, it is reasonably common for a tower on the coast to be set to transmit stronger signal towards the ocean than the signal from the

same tower pointing towards land."

The above information is from SmoothTalker.com, a company in Ontario. It's taken from Chapter 2 of their FAQ on "How Cellular Works And How To Improve Range." (see www.smoothtalker.com/faq/how_cellular_works_and_how_to_improve_range/ch02.php)

To connect from the wireless modem card to the booster requires removing the antenna that came with your wireless modem card and inserting a new antenna cable connector. There are several types of antenna connections. The modem model determines the connection type that is used by different modem cards. Not all antennas are removable. One may need to purchase low-loss coax cable connectors that will adapt to the modem card antenna connection point/cable to fit in to the Smoothtalker Boosters. There are three different configurations available (barrel, crimp or compression type).

An external antenna must be connected to the booster. The low gain dual band antenna is recommended for the best performance and to increase range in uneven terrain with obstructions. This included large cities with tall building, wooded areas, mountainous areas, low-lying areas. The height of the antenna can be 2 inches tall. Smoothtalker does not sell all the antenna connectors to the different type modem cards. Search for other vendors who can provide the proper antenna connectors such as *Wilson Antenna*.

The booster requires power. A car kit can be purchased to provide power to the booster from the vehicle cigarette lighter power cord when traveling. Otherwise plug the booster into a DCH13HV (AC Wall Type), which operates on standard electrical service. No software is required to operate the antenna booster.

Contact the company for assistance to configure what type booster, antenna, power supply and cable connections best suites your individual needs and wireless modem model.

Most of the discussion on the Smoothtalker website deals with boosting signals to and from your cellular phone. As their website explains, "Voice calls and data transmissions use the same frequencies, channels and modulation, however, data is only available when the phone is within a digital signal area, therefore, you may find yourself in an area where voice calls are possible on Analog but data is not functional." There is also a note that "Wireless data cards have lower transmit power than handsets, therefore it is even more important to have a booster in remote areas when using a data card with a laptop for data over cellular networks."

Smoothtalker sells a range of boosters, and which one you need will depend on your cell phone or your modem card. The price of a typical kit is in the \$300 range.

For more info, try these websites:
www.smoothtalker.com
www.wpsantennas.com
www.wilsoncellular.us



More Deals Discounts from APCUG

CMUG is a member of APCUG (the Association of Personal Computer User Groups), and sometimes being a member pays off. Below are some deals APCUG has passed along to us; they do note that APCUG is not actually endorsing any of these products.

👉 **Red Mercury - www.red-mercury.com**

The discount is \$5 off instantly for any of the AcidSolitaire collection games. If you buy more than one of the games in the collection, you get an additional \$10 off each additional game. The discount ends up being \$14.95 for the first game and \$9.95 for additional games.

👉 **WebEyes - <http://webeyes.us>**

\$24.95 / with discount \$19.95 - APCUG is the promotion code

The Internet Explorer software that allows you to adjust type size easily (144 pt) and eliminates scrolling. By clicking on "Read like a book" you can simply turn the pages like a book.

"If you need a little help reading Web pages, you will gladly pull out your wallet for this one!" Sandy Berger, nationally recognized computer expert and author at CompuKiss.com. Read the complete review at www.compuKiss.com/visioncenterhtm/review380.htm

👉 **LapWorks - <http://lapworks.net>**

20% off all products - just enter APCUG20%OFF in the Promo Code Calculator. The discount is valid through June 30, 2006. LapWorks features Laptop legs to cool and elevate your notebook computer; laptop desks that are scientifically proven to significantly reduce heat build-up in your notebook computer; the SwivlPad is an ultra thin turntable or lazy susan that allows you to easily swivel your notebook computer to show the display to another person -- it also works with LCD monitors, or similar size objects.

👉 **TrendMicro - www.trendmicro.com/offers/usergroup**

PC-cillin Internet Security - \$29.95

👉 **Corel - www.corel.com/promotions/cug_usd.html**

50% off - WordPerfect Office X3 - \$159, CorelDRAW Graphics Suite X3 - \$179, Corel Painter - \$229, Paint Shop Pro X - \$59, Corel Photo Album 6 - \$29, Corel Painter Essentials 3 - \$99.



Printing Better Pictures When a Dot Is Not a Dot

by Robert Spotswood via APCUG

Have you ever tried to print out a picture that looks good on your monitor only to be disappointed with the result? Does it come out way smaller/bigger than you expected or look really grainy?

This is not a random act by your computer. In order to understand why it happens, and more importantly, be able to prevent these problems, you have to understand when a dot is not a dot.

This is not an easy subject to grasp initially, but if you play with it just a little, the light bulb will light and it will become almost second nature very quickly.

Conventions

There are two types of graphic images: bitmap and vector. This article focuses exclusively on bitmaps. If in doubt about which type your picture is, it's probably bitmap. Bitmap pictures are composed of a series of dots called pixels.

While the terms DPI (dots per inch), PPI (pixels per inch), and SPI (samples per inch) technically have different meanings, in practice they are all interchangeable. Only DPI will be used in this article.

Any printer referred to is limited to the inkjet variety unless stated otherwise, although almost everything here applies equally to laser printers. Although this article focuses on examples using the GIMP, all the theory and much of the practice applies to almost all graphic software.

Monitors

Your monitor displays everything as a series of dots, regardless of the picture type. For instance, if your screen size is 800x600, then you are looking at 800 dots by 600 dots. The dots can be almost any color and they do not have a fixed size. A typical 17" monitor can have screen sizes from (at least) 640x480 to 1280x960. Since the physical size of your monitor can't change, the size of the dots must change. The more dots you have making up your screen, the smaller those dots will be.

As far as your monitor is concerned, one pixel (see the definition of pixel above) equals one dot. Because the icons (including text) and wallpaper on your desktop are composed of a fixed number of dots, shrink those dots and the icons and wallpaper get smaller (see Fig. 1 and 2). Be aware that most desktops have a scaling feature for the wallpaper, called "Stretch" in Windows, so you may not see the wallpaper actually change size if this feature is turned on. However, the quality of your wallpaper may go down dramatically if the wallpaper's actual size is small and you increase the screen size too much.

The same thing applies to any pictures you may have. A picture with 640x480 pixels will display fully (at 100% resolution) on any screen size at least 640x480. A picture 1600x1200, on the other hand, will require scrolling on any screen smaller than 1600x1200.



Printers

Printers, like monitors, create the printed picture/output image by using a set of dots. But that is where the similarities end. Unlike a monitor, a printer's output isn't a screen with variable size pixels, but a piece of paper with fixed dimensions. Paper is measured in inches, not pixels.

Printers create the image (and text) by using a grid of dots. The number of dots the printer can make in one inch is what's known as DPI or Dots Per Inch. Obviously, the higher the DPI, the better the output the printer is capable of. A higher DPI means more detail and a lower DPI means less detail. If the DPI is set to low, the picture will look very grainy and poor. For a normal piece of paper, the graininess usually starts to show somewhere below 200 DPI. For things like highway billboards, the DPI used can be from 36 to 72 DPI.

Unlike a monitor, the dots are of a fixed color. A black and white printer cannot actually print gray, but only black. The paper is usually white, so white is just the absence of printing. Grays are simulated by printing dots in a grid. These grids are called halftones. Newspapers use halftones that are very coarse and usually visible even without a magnifier. The more black pixels, the darker the gray. Conversely, the fewer the black dots in the grid, the lighter the gray will be. Thus, one image pixel can require several printer dots. Some printers are capable of varying the size of the printer's dots, but for simplicity's sake, this will be ignored.

The size of the grid and the max DPI of the printer affect how well the printer can reproduce shades of gray (and color). Gray includes the colors black and white. For a 1200 DPI printer:

- ↳ A 1x1 grid shows 2 shades of gray with an effective DPI of 1200 (1200/1 aka line art).
- ↳ A 3x3 grid shows 10 shades of gray with an effective DPI of 400 (1200/3).
- ↳ A 6x6 grid shows 37 shades of gray with an effective DPI of 200 (1200/6).
- ↳ An 8x8 grid shows 65 shades of gray with an effective DPI of 150 (1200/8).

Thus, the more shades of gray you need, the more image detail you have to give up, or the more detail you want, the fewer shades of gray you will get.

Color printers are similar to black and white printers except they usually have four ink colors (CMYK - Cyan, Magenta, Yellow, and black). Instead of orderly grids, color printers use dithering (with error diffusion).

Dithering is the use of somewhat randomized scattered dots. This tends to look smoother than grids,

but the theory is similar. One image pixel can require several printer dots.

In practice, the upper limit for inkjets comes about because the dots of individual color become larger than the grid to hold them. In addition, the ink can bleed, especially on regular paper (photo paper lessens this problem). The practical upper limit is (on good photo paper) between 240 to 300 (maybe 360) DPI. On regular paper, due to ink bleeding, 150 DPI is about as good as it gets. For other than inkjet printers, try not to go much below 200 DPI if you want a good print out.

Converting between the effective DPI (which is the same as the DPI you or the software pick), the printer's max DPI, and picking the colors to use at a given DPI is handled by the printer driver and not something you can really change. Just be aware that using a high DPI may not give you the detail, or color reproduction, you expect.

DPI and Print Size

In addition to affecting the number of colors, DPI also affects the physical size of the printed picture. The print size on paper is determined by two things: the number of pixels in the picture and the DPI setting used by the software for that picture.

Some software and some file formats do not support changing the DPI setting. Some programs do support changing the DPI and just don't mention the term DPI (or PPI or SPI). Some programs such as desktop publishing software and word processing software will show you a WYSIWYG version of your picture at its relative print size. This is usually

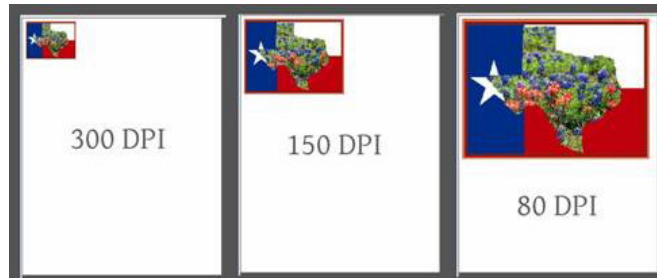
based on the DPI of the picture.

The physical print size is just the picture size (in pixels) divided by the DPI. For instance, a 400x800 pixel picture printed at:

- ↳ 100 DPI will be 4 (400/100) inches x 8 (800/100) inches
- ↳ 200 DPI will be 2 (400/200) inches x 4 (800/200) inches
- ↳ 300 DPI will be 1.33 (400/300) inches x 2.66 (800/300) inches

The image shows the same picture (640x480) printed on letter paper using 3 different DPI values. The only thing changed between the three is the DPI. As you can see, the higher the DPI, the smaller the picture. This is another reason that trying to print at your printer's maximum DPI is not the best choice.

If you're using the GIMP (GNU Image Manipulation Program; see www.gimp.org) program, setting the DPI in the GIMP for versions 1.2 is done by right clicking on the picture and



Why Do You Get So Much Spam?

by Vinny La Bash via APCUG

The earliest recorded instance of what may be described as spam occurred on May 3, 1978. A sales representative for Digital Equipment Corporation (DEC) named Gary Thuerk sent a message to everyone on the Arpanet database (now known as the Internet) on the West coast of the United States. Thuerk wanted to notify the recipients of an open house where his company was hosting a demonstration of new models of the DEC-20 computer.

In 1978 the Arpanet had a certified "acceptable use policy" which said it couldn't be used for anything except research and education. Thuerk's action was a very clear violation, and when DEC got a very strong response from the Arpanet community objecting to the misuse, the company promptly promised to stop. Spam would not appear again for many years.

Today, estimates of the amount of email that is defined as spam range from 66% to 94%. Whatever the actual figure is, the good news, if you want to call it that, is that spam appears to be leveling off.

Congress has passed anti-spam legislation. Spam receivers are angry, Internet Service Providers try to filter out spam messages, and spammers are loathed by the general

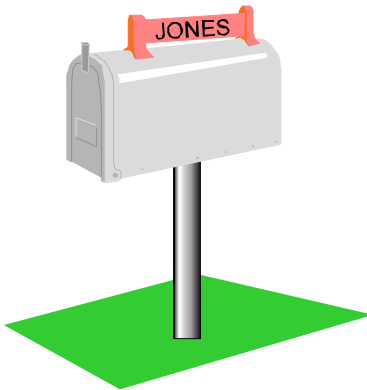
community of Internet users. Why do spammers continue to operate in the face of all this general repugnance?

In an article for Wired Magazine a few years ago, Brian McWilliams provided a very depressing answer. McWilliams discovered a security flaw on a website operated by a group selling pills guaranteed to enlarge the male sexual organ. The reporter found that over 6,000 orders for the product had been placed in a time span of about a month. Business and medical professionals, athletes, and even women bought the pills. Many buyers made multiple purchases at \$50 per bottle, despite an obvious lack of credit card security on the site. The web site provided no way to contact the company except by placing an order.

Being a good reporter, McWilliams was not deterred by the company's efforts to hide behind fake registration data, disconnected phone numbers, and phony email addresses. Eventually he revealed that the company was owned by a 19-year-old high school dropout, and a neo-Nazi adherent.

The business appears to be highly profitable, net costs being about \$15 per bottle of pills, but according to the FDA, there is no credible evidence that the product works. (The article can be read

at www.wired.com/news/business/0,1367,59907,00.html.)



choosing "Image" -> "Scale Image" and setting either the DPI or the print size (see Fig. 4). The DPI is called "X resolution" and "Y resolution". Both the X and Y values should almost always be set to the same number. As you change one, the other will automatically adjust. As mentioned above, DPI and print size are intertwined and one can not change without the other changing.

For the GIMP 2.2 (everyone using version 2.0 should upgrade to 2.2) the DPI (or resolution) control is found in "Image" -> "Print Size." While it is also found under "Image" -> "Scale Image", do not use it there. It is too easy to change your picture size by scaling accidentally.

Conclusion

By understanding DPI and how to control it, you can dramatically improve the quality of your printed pictures. Say "goodbye" to accidentally printing posters and postage stamps. Say "hello" to better printouts.

This article comes to us from APCUG, the Association of Personal Computer User Groups, of which CMUG is a member. Robert Spotswood is a freelance computer professional, and a member of HAL-PC (the Houston Area League of PC Users: www.hal-pc.org), and is active in their Linux SIG. He can be reached at robert@spotswood-computer.net.



Now you know why you get so much spam. It's because people who should know better respond to it and buy products from these companies.

Selling products of dubious value is not the only kind of spam on the net. This week alone I have won three European lotteries, and there are at least a dozen people in Nigeria who each want to give me \$12 million dollars for helping them launder money. Notification came just yesterday that Bill Gates is going to give me \$500,000 because I forwarded a few emails for a good cause.

Perhaps the best way to reduce the number of people buying from spam is to educate people about the problem. Unfortunately that takes time, but if we don't take the time to tell people why they shouldn't buy from spam, they will continue doing it.

If you are responding to spam, please stop. Be part of the solution, not part of the problem.

This article come to us from APCUG, the Association of Personal Computer User Groups, of which CMUG is a member. Vinny La Bash is a member of the Sarasota Personal Computer Users Group, Inc (www.spcug.org). He can be reached at labash@spcug.org.



CMUG MEGAPHONE

George Coffin
8652 Open Meadow Way
Columbia, MD 21045

Meeting:

Wednesday, June 21, 7:30 pm

Rob Pegoraro from the Washington Post will discuss how he decides what to include in his column, and technology journalism in general.

Plus: **Officer Elections!**



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General meetings are held the third Wednesday of every month at 7:30 pm at the Florence Bain Senior Center, near the Harpers Choice Village Center in Columbia MD. The number there is 410-313-7213.

Membership in the user group is currently \$30 (cheap!). Membership includes a monthly subscription to the CMUG Megaphone, a membership directory, full access privileges to the Website, and drawings for free and review software at meetings.

www.milkern.com/cmug

