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SEMCO MEETINGS Sunday, August 10, 2003

Board Meeting	12:00pm
General Meeting	1:30pm
SIG-IBM Meeting	1:45pm
Social Period	3:15pm
IBM Novice Group	3:45pm
SIG-IBM Intermediate	3:45pm



DEALS COLUMN
from the DealsGuy
Greater Orlando Computer UG
by Bob "The Cheap skate" Click

Alas, Its Another Goodbye From a Great User Group Supporter

I was about to release the August column to my editors when I received Bonnie Mitchell's e-mail with the sad news that Casady & Greene is closing their doors after 19 years in business. Bonnie, their users group coordinator, sent out her sad goodbye to all of us who are users group contacts. While we were only connected with C & G for eight years, many of you have met Bonnie at APCUG or regional events across the country. She was always ready to help with review products and prizes for drawings. C & G supported us when the expense of it might have been questionable, but they were there when we needed them. This recession is certainly taking its toll in the business community, and in the process, the user group community is losing some great friends along the way. Thanks for everything Bonnie, and good luck in any new endeavors.

Eliminating The Competition

I read that Palm has declared its intention to purchase Handspring, and

that they will do business under a new name, but with two different units: one for handhelds, and the other for "so called" smart phones. Since Palm is not an APCUG sponsor, it looks like Handspring will be gone too. According to Value Line, Handspring's liquidity was deteriorating, and revenues were significantly below last year's levels. Sales for both have been declining, so perhaps it's time.

Ink Jet Deal Is Jetting Back Again

I don't often repeat a deal, but this one was very popular. Susie McLean of Inksell.com agreed to repeat the original deal offered last year and extend it until the end of this year (2003). The differences are: the expiration date, the coupon code, and free shipping on orders over \$49.00 (an improvement). I am repeating it below with the changes.

"InkSell.com is a discount printing Supply Company that specializes in cartridges for all makes of ink jet and laser printers, solid ink printers, copiers, and fax machines. We sell brand names, new compatible cartridges (for most brands), and remanufactured cartridges and refill kits. Our compatible cartridge quality is certified to match that of the manufacturer, and our prices are up to 70 and 80% less. We would be happy to offer DealsGuy readers a 10% discount on purchases at our online store.

"A discount coupon code will be valid through December 31, 2003. To redeem the 10% discount, (not valid with any other discount or offer), simply visit our site, <<http://www.inksell.com>>, place your order, and continue to 'check out' where there will be a blank to enter the discount coupon code (DealsGuy2003). The

discount will be automatically calculated. Should anyone have questions or need assistance, phone customer service at 1-800-255-0483, or send e-mail to <help@inksell.com>. Don't forget the free shipping on orders over \$49.00."

Its Not Free This Time, But Its Still A Bargain

Colleen Toumayan from Executive Software e-mailed me to let my readers know that they have a good price on Undelete and Diskeeper bundled together. The bundle is \$39.95 and would normally be \$59.90 if bought separately.

About Diskeeper: "they say built-in defragmenters are slow, labor intensive, and use too much system resources to keep up with the performance demands of today's computing needs. Ultimately, they don't get used. Running Diskeeper is like hiring an expert to constantly monitor and maintain your system's maximum performance."

About Undelete: "you store a lot of data on your computer, and you need to protect it 24/7. Re-creating accidentally deleted files takes a lot of time, and using backups to restore deleted files is not always reliable—especially if you've created and deleted something between backups. New Undelete replaces your recycle bin with a Recovery Bin, which catches all the files you delete, so file recovery is quick and easy."

The products in the bundle are for home use, and you can check them out at <<http://consumer.execsoft.com/home.asp>> and order them if you wish.

What's Going On Your Web Site?

If you have a Web site, it often helps if you know all the statistics about the

visitors. One problem though: if you're using the free space given to you by your ISP, you probably have no access to the log for it (and can't use the product I am about to offer). On the other hand, if you have a paid Web space, usually you have access to the server log for your site. You should find out if your server log is accessible. You could analyze things the hard way and download the log file, then sift through it manually to see what you can determine. Sure it will work, but it's time consuming. I know, in my case, I'd like to know which files were hit, and for how long.

I talked to Sane Solutions about offering a discount on their products, and they agreed to do it. I have to say, their NetTracker Professional software is already much cheaper than another well known software for the same purpose, but Sane Solutions feels theirs does it better. They did not give me a product to review, so you will have to do your own evaluation, but you can download a fully functional two-week trial version to evaluate. Check their Web site at <<http://www.sane.com>> and look at the product descriptions.

NetTracker Professional sells for \$495.00, and NetTracker Enterprise is \$995.00. Darryl Cunningham, sales manager of Sane Solutions, said that if you call him with your request, he'd personally handle the order giving you a 20% discount on their products and support. Wow! That's a \$99 discount just on NetTracker, making it very competitive! The 20% discount is good on all orders through August 31, 2003. You can contact Darryl at 1-800-407-3570, ext. 122 to order. Don't forget to tell him you heard this from the DealsGuy.

Talk About Tweaking!

Many of you have used TweakUI and loved it. It performs many very useful tasks for Windows. Lee Reynolds of Boca Raton Computer Society Inc. wrote some time ago in his monthly “Nibbling At The Net” column about another even more useful utility that he feels is much better than TweakUI. It is Xteq X-Setup and can be found at <http://www.xteq.com>. It’s absolutely free for home users. However, they do take donations if you enjoy using it.

This product has an incredible number of features that you can hardly imagine. It is also updated constantly. To add to its value, it also offers to help other software such as Office 97 and 2000, not to mention hardware installed on your computer. Sounds like a great product. Thanks for letting us know Lee.

That’s it for this month. Meet me here again next month if your editor permits. This column is written to make user group members aware of special offers 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. Visit my Web site at <http://www.dealsguy.com> for past columns. I have also been busy putting up some interesting new articles on my Web site, so take a look. My thanks to the authors I was able to reach. However, they don’t all answer their e-mail, so I miss posting many very good articles there.

Tip: Refreshments at SEMCO meetings are always delicious and require no password for access.

Windows Upgrade Options

By Michael Horowitz

When considering installing a new version of Windows on a computer, the first issue is whether your computer is fast enough for the new operating system. Microsoft and others publish both minimum and recommended horsepower (cpu speed, installed ram, and available hard disk space). You can learn about the horsepower requirements for Windows XP at <http://www.microsoft.com/windowsxp>.

The second issue is whether your computer and surrounding hardware is supported by the new version of Windows. Microsoft publishes a Hardware Compatibility List <http://www.microsoft.com/hcl> where you can see if Windows is supported on your computer. In addition, you should check your printer, scanner, and other hardware to see if there are drivers for the new version of Windows. This is especially of concern when moving from a Windows 9x family OS to an NT class version of Windows (NT4, 2000, XP).

Software also has compatibility issues. Not all software runs on all flavors of Windows. Any software that you want to continue to use should be checked to make sure it is compatible with the new version of Windows. Windows XP was the first version of Windows to address this issue. It has a feature that attempts to fake out a program so that it thinks it is running under an older version of Windows.

If you decide to install a new version of Windows, the next issue is

how. Most people discuss two options, but there are actually four ways to run a new version of Windows on your computer. I will discuss the two common options first.

A new version of Windows can be installed as either an upgrade of an older existing copy of Windows or on a new empty hard disk. An upgrade install places the new copy of Windows on top of the old copy. A clean install puts the new copy of Windows on your computer as if the old copy never existed. There are pros and cons to each approach.

Upgrade installation

Con: You lose the old copy of Windows. It is clobbered by the new copy being installed over it. Should there be any problems with the new copy of Windows, you can't fall back to your tried and true old copy. Con: Compared to a clean installation, an upgrade install is more likely to cause problems in the future. It's complicated, in a world where simpler is better. Pro: Your existing applications, data and settings remain more or less unchanged.

Clean installation

Con: You lose not only the old copy of Windows, but everything that was previously on your computer, all your data and all your applications. Obviously, this requires that you first back up all your data files. Don't forget any files; if you fail to back up a file it is lost forever. It is easy to forget that e-mail, or an address book, also needs to be backed up. Pro: From a technical perspective, a clean installation is simpler and less likely to cause problems in the future compared to an upgrade installation. Con: It requires re-installing all applications and customizing things from scratch.

An upgrade installation is not always an option. It depends on the old and new versions of Windows. The rules for Windows XP are presented later.

Also, you should not do an upgrade installation if the old version of Windows is having problems. If your motivation for a new copy of Windows is to fix problems with the old version, then do a clean installation of either your current version of Windows or a new version.

Further complicating things is the fact that many (most?) copies of Windows that you buy in a retail store are not designed for a clean install. They are referred to as "upgrade" copies. Upgrade versions of Windows are much cheaper than "full" versions, but are only for people who already own a prior copy of Windows. For example, the upgrade version of Windows XP Home Edition is under \$100; the full version is \$200 (as of February 2003). The upgrade version of Windows XP Professional sells for about \$200; the full version is about \$400. Upgrade versions of Windows are intended to be used to upgrade an old version of Windows. They require proof of ownership of a previous version of Windows. When you do an upgrade installation, the proof of ownership comes from the old version of Windows found on your computer. For a clean installation of an upgrade version, you need to provide a CD-ROM from the earlier version of Windows as proof of ownership. Even though you own a previous version of Windows, you may not have a CD-ROM to provide as proof. Many computer manufacturers stopped providing this years ago. Instead they provide only a recovery CD-ROM.

It is safe to say, that both upgrade installations and clean installations are poor choices. There are two other options that offer none of the downsides previously mentioned. These next two options let you run both the old and the new version of Windows on the same computer. In effect, you can have your cake and eat it too.

The downside to these alternative approaches is that they require some technical skill and additional software.

The third alternative lets you run either the old or the new version of Windows, but only one at a time. When the computer starts up (boots) you are presented with a choice of which version of Windows to run. The fourth alternative, lets you run both the old and new versions of Windows concurrently!

A Third Alternative (Partitions)

Installing two versions of Windows on one computer is done by giving each its own dedicated partition. The old copy of Windows remains where it is, but its partition will likely have to be shrunk. The new copy of Windows is installed in a different, and new, partition.

The vast majority of personal computers have a single partition whose size is the full size of the hard disk. In this case, this single partition has to be shrunk and a new partition created in the space freed up.

This approach is referred to as “multi-boot,” or “dual-boot,” or “side-by-side” installation. The terms refer to the fact that you can boot (techie speak for “start up”) either of two versions of Windows.

No version of Windows comes with software that can non-destructively resize a partition. This requires a commercial product, known

generically as partitioning software. Among the available software is PartitionMagic from [PowerQuest](#), Partition Commander from [V Communications](#), Partition Expert from [Acronis](#), and Partition Manager from [Paragon Software](#). There is also a free program, [Ranish Partition Manager](#), but the user interface is said to be very difficult, and for a job like this, it is better to have technical support available. Note that resizing a partition is potentially a dangerous thing. Always back up your most important files first and run a full disk check beforehand.

Also, this approach requires more hard disk space than either a clean install or an upgrade install. After all, two separate and independent versions of Windows reside on the computer. Be sure to check the amount of available space on the hard disk before even considering this approach. In general, figure on two gigabytes of disk space as a minimum amount for installing an NT class version of Windows and one gigabyte for a version of Windows in the 9x family.

It is also possible to add a second hard disk to a computer and have each hard disk dedicated to one version of Windows. The advantage to this approach is that it can save the cost of partitioning software. In fact, a large enough hard disk can be had for roughly the same price as the partitioning software. Choosing an OS at start-up time could be handled by either the new version of Windows (if it is an NT class), the system BIOS, or commercial software such as System Commander or Boot Commander. Nonetheless, you may opt for purchasing partitioning software for reasons explained below.

The general approach of having different versions of Windows installed in different partitions can be used with any two versions of Windows. If done correctly, it does not matter which version of Windows is installed first or second.

The advantages of this are many. You can fall back and use the old OS if the new version of Windows causes trouble. You can migrate to the new version of Windows gradually rather than in a big bang. Software and/or hardware that is not supported in the new version of Windows can be run from the old one. Also, the new version of Windows is installed cleanly, which means it's less likely to experience problems. The down side is that it requires a reasonable amount of technical skill to set up. However, if the old version of Windows is from the Windows 9x family, and the new version is from the Windows NT family, and there is an available empty partition for the new version of Windows, then the new version of Windows has some crude, but usable features for managing the two versions of Windows.

During installation of the new version of Windows, the old version will be detected. Thereafter, the new version of Windows offers a list (menu) of Windows instances on the computer at start-up time. You get to choose which copy of Windows to run every time the computer starts up. I am not a big fan of this approach however.

For one thing, the description of the older version of Windows is sometimes wrong. Also, files get installed in the partition where the older version of Windows resides. If the time ever comes that you want to get rid of the old

version of Windows, it is very difficult. Finally, one copy of Windows sees the files that constitute the other copy, an accident just waiting to happen.

A far better approach is to keep each copy of Windows totally separate, distinct, and unaware of the other copy. This way, a problem in one copy of Windows cannot affect the other one. Also, each copy of Windows can be re-installed, removed, or upgraded with no effect on the other copy. On their own, the NT class versions of Windows cannot keep two copies of Windows totally isolated from each other.

There are also software programs that manage multiple copies of Windows on a single computer. The most popular such program is System Commander from V Communications. It offers a list of operating systems that you can choose from each time you start the computer. The software is easier to deal with than the corresponding features in the NT class versions of Windows.

However, multi-boot software such as System Commander costs money and can be confusing to install. Also, it gets in the way of the normal Windows startup process, so if Windows fails to boot, debugging is all the more difficult. I'm not sure if it can keep each copy of Windows totally separate. Total isolation of each copy of Windows requires up-front planning to hide the partition with the old version of Windows. At the time the new version of Windows is installed, the computer thus appears to have an empty hard disk. This worked better with the 9x versions of Windows. Windows 2000 and XP will see the hidden partition at install time, but they can be directed to ignore it both at install time and after the fact.

You can have total isolation of each OS, a 100% normal boot process (i.e. no multi-boot software), and still run either OS. The trick is a program called “pqboot” included with PartitionMagic, which has to be installed in each copy of Windows. The computer will always boot the last used OS. If this is not the OS you want to run, pqboot can be run to shut down the current OS, hide its partition, and boot the other OS. There are DOS and Windows versions of pqboot. The DOS version supports command line switches. In the best case scenario, there can be an icon on the desktop that invokes the DOS version of pqboot to shut down the current version of Windows and start up the other version. This automated OS switching requires only that the user double-click.

Data files can be made visible to each OS by placing them in a logical partition within an extended partition. Pqboot makes no changes to logical partitions. Of course, this data partition has to be formatted with a file system (FAT16, FAT32, NTFS) supported by both versions of Windows.

The Fourth Alternative (Virtual Machine)

Finally, there is yet another totally different approach. Providing the best of all possible worlds, this approach lets you run both the old and the new version of Windows at the same time. You start up Windows, in the same manner you start any other application, such as Word or Excel.

This is done using virtual machine software. Two companies offer this software for home use, VMware <<http://www.vmware.com>> and Connectix <<http://www.connectix.com>>. They vary in the flavors of Windows they

support and in cost. VMware costs \$330; Virtual PC from Connectix is \$230. Connectix was acquired by Microsoft in March 2003. These products are installed on the old version of Windows (known as the host OS), just like any other software. When you run them initially, you create a Virtual Machine with a virtual hard disk and virtual RAM. You install a new copy of Windows (known as a guest OS) inside a Virtual Machine. Virtual machines are logically powered on and off, simulating a real computer. Powering a Virtual Machine on/off is somewhat akin to opening and closing a document with a word processing program.

There is no limit to the number of Virtual Machines you can define and use other than the hard disk space on your computer. The speed of your CPU and the amount of RAM in your computer limit the number of Virtual Machines that be run concurrently. When a Virtual Machine is running, the interface to it is a normal Windows window, which can be minimized and maximized. The virtual machine is just another running application. You can switch between a virtual machine and other applications in the usual way (task bar, alt-Tab, etc). VMware offers a full screen mode; running a virtual machine in full screen mode makes it look like a real computer.

VMware and Virtual PC have limitations on the versions of Windows they can be installed onto and the versions of Windows (and Linux) that can be installed in a virtual machine. In addition, the guest OS may have limitations that prevent it from running inside a virtual machine. Two examples of items that cannot be run are BIOS locked copies of Windows and the

product activation feature of Windows XP.

One caution with VMware: the thirty days of technical support starts the day you get the software, whether you install it or not.

Note again, these final two approaches require a non-trivial amount of technical expertise.

A Final Word on Windows XP

Most likely, the new version of Windows you will be installing is XP. Many programs originally written for Windows 95, 98 or Me will not run correctly under XP. For the most part, the burden of researching this falls to you. For every program you care about, go to the web site of the vendor to see if it is supported under Windows XP. Be especially sure to check your anti-virus and firewall programs.

As for an upgrade install (XP on top of an older version of Windows), the Home Edition of XP can be installed on top of only Windows 98 and Windows Me. The Professional Edition of XP can be installed on top of Windows 98, Me, NT4 (only SP6), and 2000. If you are running Windows 95 (or 3.1 for that matter) you cannot upgrade to XP; instead you will have to opt for one of the other three approaches.

If you are installing XP on top of an older version of Windows, then you can use a program on the Windows XP CD-ROM called the upgrade advisor. It checks for some programs known to be incompatible with Windows XP. You can run it from the XP CD (assuming it is the D disk) with D:\i386\winnt32 – check upgrade only. This program is very limited in its scope however.

The following articles offer some advice specific to XP upgrades:

Article: “How To Troubleshoot Windows XP Problems During Installation When You Upgrade from Windows 98 or Windows Me.”

http://support.microsoft.com/default.aspx?scid=kb;en_us;310064>

Article: “Last Call for Windows XP Upgrades.” PC World magazine, May, 2002. Tips on how to do an upgrade installation of Windows XP.

<http://www.pcworld.com/resource/article/0,aid,86927,00.asp>>

Article: “Windows XP Professional Upgrade Center.” Information from Microsoft on the four steps to upgrading to Windows XP.

<http://www.microsoft.com/windowsxp/pro/howtobuy/upgrading/default.asp>>

Article: “Bugs and Dust Balls: A ‘Clean’ Installation.” The New York Times, October 24, 2002, by Sarah Milstein. The horrors of upgrading from Windows 98 to XP. The article contains a number of technical mistakes.

<http://www.nytimes.com/2002/10/24/technology/circuits/24basi.html>>

This article by Michael Horowitz is reprinted from: The LangaList. Michael teaches a class called Defensive Computing at Hunter College in New York. Meet him at <www.michaelhorowitz.com>, or check out his class site at <www.defensivecomputing.us>.

There is no restriction against any non-profit group using the article as long as it is kept in context, with proper credit given to the author. This article is brought to you by the Editorial Committee of the Association of Personal Computer User Groups (APCUG), an international organization of which this group is a member.

SPAM—Bane Of The Internet

By Ira Wilsker

I hate it; I absolutely hate it. I open my e-mail in the morning and find up to 100 e-mail solicitations offering illegal cable TV descramblers, cheap prescription drugs without a prescription, devices and treatments for “personal enhancement,” university degrees without attending class, voyeuristic opportunities, and the infamous offers of easy riches from the family members of deceased Nigerian dictators. I can typically spend over a half-hour daily deleting this trash. Most of us find the “unsolicited commercial e-mail” a mere nuisance, but to our internet service providers it has become an expensive proposition to process this “spam” e-mail, as it steals internet bandwidth, hard drive space, and processor time, with the costs passed on to us subscribers. What may even be worse is the blatant fraud and criminal solicitations that many of us experience.

According to a report released by the Federal Trade Commission on April 30, 2003 <www.ftc.gov/reports/spam/030429spamreport.pdf>, much of the spam mail we receive contains false claims as well as other deceptive, and probably illegal, content. To determine the degree of proliferation and deception in spam, the FTC created what appeared to be private websites containing unique e-mail addresses only used on those sites, and posted material in popular newsgroups and chat areas, again using unique e-mail addresses. During the collection phase, over 11,000,000 spam e-mails were sent by

citizens, or received by the “dummy” e-mail addresses created for this purpose. Since many internet users wonder where and how spammers get their e-mail addresses, the FTC found that 86% of the e-mail addresses used on their websites and newsgroups were harvested and resold by spammers. The FTC also tracked the success rate of the “remove me” links commonly given by spammers, and found that 63% of the remove requests were not honored. The FTC also found substantial misrepresentation in the sample e-mails analyzed, including false “From:” and “Subject:” lines, often clearly intended to trick the recipient into opening the message. Many of those messages (17% of “Adult” spam with false headers) would then display pornographic images without any regard for the age or emotional status of the recipient.

In the analysis of about 1000 spam e-mails, the FTC found that 20% of the e-mails were for what the FTC labeled “Investment or Business Opportunities,” including such offers as work-at-home, franchise opportunities, chain letters, and other non-securities offers. “Adult” spam, consisting mostly of pornography and dating services, accounted for 18% of all spam, while “Financial” spam, consisting of credit card offers, mortgage refinancing, cheap insurance, and other related items comprised 17% of spam. Close behind were “Products and Services” (16%). “Health” related spam, offering dietary supplements, disease prevention, and physical enhancement (mostly sexual in nature) accounted for 10% of all spam. Only 7% of the spam was for computer or Internet related equipment or services. It should be noted that all of this spam received by the FTC was indeed

unsolicited, and not in response to an inquiry made by FTC staffers, even though many of the e-mails claimed (falsely) to be a reply to an inquiry, or the result of signing up for an “opt-in” service.

The FTC also investigated the accuracy of the e-mail headers, and found that one-third of all spam mail had false “From:” lines in an attempt to disguise the source of the e-mail. Almost half (46%) of the spams with false “From:” lines appeared to be from an acquaintance of the recipient, apparently to trick the recipient into opening the message. Another 13% of these e-mails appeared to come from an established business relationship, and 14% had blank sources. Some spammers (3%) try to trick the recipient into opening the messages by showing that the message appeared to be from the recipient himself!

The “Subject:” line of spam was only slightly less deceptive, with 22% of spams containing false subject lines, and with one-third of those having a stated subject totally unrelated to the content of the message. 42% of these false subject lines alleged to show some existing business or personal relationship with the recipient. Cumulatively, 44% of all spam mail had false “From:” and/or “Subject:” lines. Personally, I do not understand how anyone could transact business, including possibly sending credit card information, to an unknown individual who is lying about his true identity; that is a real setup for fraud and loss.

The body of the message also often contained deceptive information, with 40% of all spam mail containing one or more falsehoods in the content of the message; of those messages touting

“Investment or Business Opportunities,” a full 90% contained false information, while 49% of the “Health” spams had falsehoods. 47% of the travel and leisure related spams contained false information. Considering the “From:,” “Subject:,” and body of the spam mail, the cumulative number of false e-mails rises to 66%, with 96% of all “Investment or Business Opportunities” containing misinformation. Again, it amazes me that so many Internet users are gullible and fall for these deceptions. Despite some states requiring commercial e-mail to contain the prefix “ADV” in the subject line, only 2% of all spam complied.

Then there are the chain letters, which often claim to be legal, even to the point of being endorsed by government agencies. According to the FTC, “Nothing is further from the truth.”

It may get worse—spammers are now targeting our cell phones, and most of us pay to receive text messages, shifting the cost of spam almost totally to us, the recipients.

There is no restriction against any non-profit group using this article as long as it is kept in context, with proper credit given to the author. This article is brought to you by the Editorial Committee of the Association of Personal Computer User Groups (APCUG), an international organization of which this group is a member.

Tip:

When an electrical storm approaches, don’t trust your \$49 surge protector; pull the power plug AND the phone connector.

LCD Monitors

By Tom Zinneman

Liquid crystal displays (LCDs) have been around since the early 1970s. They are found in many consumer applications, such as appliances (microwave ovens, stoves, etc.), calculators, laptop computers, telephones, and watches. They are now being used in full-size monitors that will, as their cost decreases, gradually replace the cathode ray tube (CRT) monitors that most of us use with our desktop computers.

CRT monitors use beams of electrons striking a phosphorescent material coated on glass to generate images. LCD monitors use electric charge to excite liquid crystal cells suspended between layers of glass. These cells either block or transmit the light to create a viewable image.

The LCD screen for a laptop or desktop is composed of several layers of different materials. A fluorescent light source, known as a backlight, is on one end. The light from this source passes through a layer of polarized glass. The polarized light then passes through thousands of liquid crystal cells arrayed in rows across the screen. This liquid crystal layer is followed by another layer of polarized glass, then by a protective covering. If the screen is to be color, a layer of red, green, and blue filters is placed between the crystal layer and the second layer of polarized glass.

There are two types of LCD screens used in computers: passive and active. Passive screens use a grid of horizontal and vertical wires to apply charge. The horizontal grid is attached to one of the glass layers and the vertical grid to the

other glass layer, with the liquid crystal cells sandwiched between them. Each intersection constitutes a single pixel that can either pass or block light, depending on the amount of charge. For color screens, a single color pixel is composed of three individual liquid crystal cells. Because the individual charges must be continually refreshed, passive displays suffer from slow response times and low brightness and contrast. There are some new passive technologies, CSTN (color super-twist nematic) and DSTN (double-layer super-twist nematic), which have improved response times and generate brighter screens with more contrast.

Active screens, also known as TFT (twisted film transistor), use transistors and capacitors to control the charge on each liquid crystal cell. Tiny transistors and capacitors are etched onto the glass substrate at the intersection of each row and column. Color displays require an enormous number of transistors. For example, a color display with a resolution of 1,024 by 768 pixels requires 2,359,296 transistors (1024 columns x 768 rows x 3 cells) etched onto the glass. This technology provides fast response times and much brighter and higher contrast images. However, because of their complexity, they are also more expensive to produce. Practically all notebook displays and LCD monitors now on the market use TFT technology.

LCD monitors offer a number of advantages over CRT monitors, as well as some shortcomings. LCD monitors take up less space, weigh less, and consume less power than their CRT counterparts. Let's compare a 15-inch (diagonal) LCD monitor with a 17-inch CRT monitor. Remember that a 17-inch

CRT only has a 15.6 to 16-inch viewable area, so its viewable image is only slightly larger than that of a 15-inch LCD. An LCD monitor is about one-third the size of the CRT monitor. Its depth is typically 7 inches versus 17 inches for a CRT. A typical LCD unit weighs 12 pounds versus 40 pounds for the CRT unit. It consumes only 30 watts of power compared to about 110 watts for an equivalent CRT. Another advantage of LCD monitors, unlike their CRT counterparts, is that they do not emit electromagnetic radiation.

An important issue with LCD monitors is resolution. CRT monitors are usually capable of displaying multiple resolutions. LCD monitors, however, usually work well in only one resolution, known as their native resolution. Other resolutions can usually be displayed, but either the image may not be full-screen or the image quality may be poor. The industry-standard 15-inch LCD monitor usually has a native resolution of 1024 x 768 pixels.

Another area in which LCD monitors still trail CRTs is the display of moving images. LCD displays have a slower response time than CRTs. This delay (or latency) may cause images from a video or animated game to blur or lose detail. LCD monitors also have a smaller viewing angle than CRT monitors. A CRT screen can be viewed from a wide angle, whereas the LCD screen must be viewed from the front.

Until recently, most desktop LCD monitors were built to handle only analog inputs. The reason for this is that most standard graphics boards in your computer convert information to be displayed to the analog form required by CRT monitors. Since the LCD

monitor is a digital device, it contains circuitry to convert the analog data back into digital data. This double conversion tends to degrade the quality of the image that is displayed. Older LCD monitors sometimes had trouble synchronizing with the analog signals, resulting in pixel jitter. Tweaking the settings and/or working with the drivers was required to get a stable image. Many of the newer monitors are provided with a single button on the front panel that lets the user initiate an automatic synchronization process that eliminates pixel jitter.

Newer LCD monitors may be provided with a digital connector and cable that interfaces to a graphics board that provides a digital output. This digital output usually conforms to the Digital Visual Interface (DVI) standard promoted by the Digital Display Working Group (see <www.ddwg.org>). The DVI standard can accommodate both analog and digital interfaces with a single connector, although there are actually three different configurations. One is DVI-A, which is for analog-only connections; a second is DVI-D, which is for digital connections; and the third is DVI-I (for integrated), which can handle either analog or digital signals.

Some other features to be considered when selecting an LCD monitor are brightness and contrast. Brightness of LCD screens, also known as luminance, is measured in nits (candelas per meter squared). Newer monitors have a maximum brightness that can range from 100 to 250 nits. The higher the nits, the brighter the display. The contrast ratio is the ratio between the average brightness for white and black areas on the screen. These ratios

typically vary from 150 to more than 300. The higher the number, the better the image.

Following are some web sites of manufacturers that produce LCD monitors:

Eizo Nanao Technologies

<www.eizo.com>

IBM

<www.pc.ibm.com>

Samsung Electronics

<www.samsungmonitor.com>

Sony Electronics

<www.sony.com/displays>

Viewsonic

<www.viewsonic.com>.

The February 6, 2001 issue of PC Magazine has a good article in which 13 leading 15-inch LCD monitors were evaluated and compared.

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Right Click

Try It—You May Like It

Les J. Kizer

My friends, there was a time long ago. It was way back in the early age as computer time is told. Even some of us old folks find it hard to recall; however, you know, for the children's sake we need to remember history. It was a time before the ascent of the rodent.

In those prehistoric PC days, when we copied text from one place to another, we blocked the beginning of the copy or item by pressing ctrl-b. Then

we would use the up and down arrow keys to go to the end of the block. Again we would press ctrl-b to define the end of the block. Eventually someone, who is long forgotten, highlighted the area from the beginning to the end of the block and told us the text was now selected, not blocked.

Unblocking was done with ctrl-o, which today will help you open a file. Ctrl-b now causes selected text to become bold; in those dark days before the rodent invaded, I can't remember having bold type at all.

Then, while the text was blocked or selected, we pressed ctrl-x for cut or ctrl-c for copy followed by using the up and down arrow keys to point to the place where we wanted the text inserted. Then press ctrl-v for paste. Ctrl-x, ctrl-c, and ctrl-v still exist and are used by only the oldest among us.

When the rodent arrived and we plugged its tail into the PC, many advances came. The menu bar was enhanced with buttons, and then the tool bar was added. Most application programs added rodent buttons for cut, copy, and paste. With the index-finger pressing on the rodent's hind quarter, selecting text was easier, and highlighting also. Moving the rodent to the cut or copy button, followed by a flick of the index finger gave the command to be. Then slide the somewhat tamed rodent to the location of the insert, a quick flick, and then back to the paste button for another flick of the index finger. Progress! Ease of Use! Fabulous! And rodents become famous, heralded throughout the land.

That, though, is not the end of the rodent's march to fame. For all this fame was obtained by pressing the

rodent with only the left or index finger. What about pressing the rodent's other hind quarter?

Silently, with great stealth, someone slipped in something new. It was done so quietly and without a fanfare, so that we are not even sure when it began to happen. It is called simply: right-click, as opposed to click.

Now we can select the text we want to cut or copy. Then without an arduous effort of guiding the rodent to the menu or tool bar, we simply right-click. Voila! A menu pops up on the spot giving us likely choices upon which to flick our index finger. Move the rodent to the insert point, and right-click again. The same or a modified menu pops up for us to flick our choice. Neat, and so effortless.

Today, we can right-click almost anything—desktop, icons, menu bars—or anywhere, and a small menu pops up containing the choices we are most likely to flick. Such is the added triumph of the rodent and right-click.

Is there any end to what we can accomplish simply by flicking a rodent's hind quarter—one side or the other? Long live the rodent!

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Hunt For The Lost Font

By Mick Topping

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Did you ever lose a font? A year or so ago I made up and printed a sheet of business cards that I was happy with. Last week, I gave away my last one. (I go through about one card a month.) When I opened the business card again (in Corel Draw-7), it complained that it could not find the font Andy Bold, and asked which font to substitute.

Let me mention that I am not much of a font person. I usually couldn't care less about which font to use. I am an engineer, more interested in the meaning of the words than in how they are drawn. Arial, Courier, and Times New Roman are about all I ever use. But for my business card, I wanted something to reflect my casual insouciance, and convey the fact that I have a passion for informality, and that I am really not looking for work. Since I had put a good 10-15 minutes into the original font selection, I was somewhat concerned, and more than somewhat irritated, that it was no longer available. So, I decided to hunt the critter down.

First, I looked for "Andy" in every font folder on 3 computers. (I couldn't remember which machine I had used to print the cards.) Nothing like Andy Bold anywhere. Then I remembered, Windows applications (for the most part) keep their fonts in the C:\Windows\Fonts folder, and most applications just reach into this folder to use a font. And applications rarely delete their fonts when they are uninstalled. So any font that was ever put on a computer is likely still there,

unless major surgery has been done. This fact pointed to my laptop computer as the culprit, as I had recently done a clean-install of Windows XP, whereas the other computers had been little changed over the year. Regular experimentation had caused numerous apps to be installed on the laptop. Then, when the new version of Windows was installed, only those apps still needed were re-installed.

But which of those non-reinstalled applications came with the Andy Bold font? First a web-search on “lost font.” Wow, I am not the only one who has lost a font. Over 300 web pages containing “lost font,” none of which was very promising. Many of the links were inactive, and advertising overwhelmed others, and I was getting nowhere. Another search on “Andy Bold;” only a few hits this time, and here was a “Bulkeley Valley Christian” school web page with a note that to appreciate the page you needed to have Andy Bold installed on your computer. And there was a link promising to let me download AndyB.ttf! Unfortunately, it was another broken link. Most likely, someone had remembered that the fonts are copyrighted, and shouldn’t be downloaded.

In frustration, I finally gave-up, and printed two new sheets of business cards in Balloon... or Plump, or Poster Boldoni, not sure which. Of course, the new cards were not out of the printer when I had another thought—maybe someone at Microsoft had considered this problem. Sure enough they had. It is not easy to find, but once you know where to look, there it is at <<http://www.microsoft.com/typography/fonts/default.asp>>. That site has a search engine that will allow you to

find which applications came with which fonts.

A quick lookup, and there was what I needed. Andy Bold is distributed with Microsoft Home Publisher, part of the never used software that had come with my laptop. A quick dig through my stack of CD-ROMs, and there it was, in the MHP\Fonts folder, an icon labeled AndyB.ttf. I drag it over to my Windows\Fonts folder, and it automatically installs, and I can now print my cards like I want them. Unfortunately, I have a 2-year supply of them done with the other font. Anyone want a card? Aw come on—please take a card.

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A Windows Tip From Elliott Chandler SEMCO Member

One great feature of Windows is that there is more than one way to do almost everything. That is true of Copy and Paste, which works almost anywhere. Suppose you wish to copy some information, but you don’t see an Edit menu. Use keyboard shortcuts instead. After you select something, the Control-c key combination does a “copy,” and the Control-v key combination does a “paste.”

Natural Mousing: Vertical Mouse Optical A Review

By Linda Webb

Imagine you're about to extend your arm in a handshake. Next, take that same position, and place your hand around the new Vertical Mouse Optical from Evoluent while you're working at your computer. Feel the difference! Instead of an unnatural, palm-down position, you use this mouse in a neutral, handshake position. Evoluent, a startup company in California, has taken a traditional mouse, rotated it 90 degrees, and added optics to produce an exciting new pointing device that addresses a long-term computing ergonomics need as well as one that should offer increased overall mousing comfort for many users.

To test the functionality of the Vertical Mouse out of the box with my PC, I plugged it into a USB port and immediately had two-button and scroll-wheel functionality. The mouse had a solid feel, with a wide, stable base and a "soft-touch" thumb rest, allowing me to wrap my hand comfortably around it. I compared this to the palm-down, traditional, 2-button mouse position, noting that on the traditional mouse, my thumb and pinky were spread around the sides of the old mouse without a real resting place. Back to the Vertical Mouse, I had no trouble reaching any of the buttons; they are all located in traditional mouse positions. My hand fit the mouse comfortably, as should larger or smaller hand sizes. I noted that while I could reach and press all the buttons, making the left button easier to press might

benefit users with computer-related arm or hand problems.

Once I was comfortable with the mouse's position, motion, and basic functionality, I installed the included driver. A vertical mouse icon was added to my task bar, and several new tabs were added to my already-installed mouse properties. I could then program the remaining two physical buttons and wheel button, adding the use of three additional programmable buttons for often-used functions such as clicking "Enter" or "Back." The Vertical Mouse is supported for Windows 95 through XP. However, Windows 95 and NT users get only two-button and scroll-wheel functionality. MAC is also supported. A CD-Rom disc containing a six-page user guide in PDF format and all hardware drivers as well as a USB to PS/2 converter are included in the box. The initial version of the mouse is designed for right-hand users; lefties will have to look forward to a future model. Hopefully we'll also see wireless and smaller versions for road warriors in future editions as well. The Vertical Mouse can be ordered at <www.evoluent.biz>; it sells for \$49.95. If you suffer from any computer-related arm or hand injuries or if you're simply looking for a more comfortable mouse "ride," consider theEvoluentVerticalMouse.

Sony Digital Camera A Review

By Bill Moeller

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With 5 megapixel resolution, Zeiss optics, and Sony electronics, the 2003 Sony DSC-F717 camera delivers very impressive images up to full page

(8-1/2x11) when printed on a photo quality printer. (Impressive enough that I am retiring my 35mm film cameras.)

It can be used in full automatic mode, full manual mode, or anywhere in between. The point-and-shoot photographer will find the full automatic mode, as well as some of the preprogrammed settings for subjects like landscapes and portraits, easy to use and capable of delivering great photographs. The serious photographer will appreciate the ability to take full control of just about anything he wants to in order to adapt to different conditions or get just exactly what he wants.

The zoom lens has a range, in 35mm equivalent terms, of 38 to 190mm, an aperture range of f/2.0 to f /8.0, and is threaded to receive 58mm filters. The selectable light sensitivity is equivalent to a range of ISO film speeds from 100 to 800. Maximum image resolution is 1920x2560 pixels. Image storage mode choices are tiff, fine jpeg, or standard jpeg. Exposure mode choices are full automatic, programmed, shutter speed priority, aperture priority, full manual, or scene selection. The eye-level viewfinder is digital, not optical, and has brightness control and diopter correction. The LCD screen on the camera back measures about 1-7/16x1-1/8, and also has a brightness control. There is a built in pop up flash, and focus is automatic. Power is provided by a rechargeable lithium-ion battery pack.

I like the way this camera fits into my hands. For me, holding a camera with two hands is a commandment, and this one responds well to that command. The good-sized zoom lens cradles naturally in my left hand while the somewhat small (for me) body almost fits nicely into my

right hand. "Almost," because the LCD surface falls under the greasy heel of my thumb, creating a cleanliness problem.

The zoom is very easy to use, and coupled with the wysiwig viewfinder results in tightly composed exposures requiring no cropping, and therefore no effective loss of resolution. The exposures are good enough that few require manipulation before printing, and those that do only need simple adjustments using the histogram tool. This also helps avoid loss of resolution.

While the LCD display is next to useless outdoors in bright light, nothing is lost when you switch to the eye-level finder, which is usable outdoors thanks to the well designed eyecup and the brightness control. On the other hand, the LCD display is absolutely great for indoor sports action. It is much easier to follow fast action with the camera held at arm's length with one eye on the actual scene and the other on the LCD than it is trying to use the eye-level finder.

As with all pop-up flash units, red eye can be a problem even with the preflash. My solution for this is the available accessory flash, which stands well above the axis of the lens, integrates fully with the camera's automatic features, and can be used in the bounce mode if that is what you like.

Downloading to the PC is as simple as plugging in the supplied USB cable; it all just happens, automatically. And when the battery runs down, which you can see coming because of the camera's displays, you simply connect the camera to a 120V AC source, using the supplied adapter, and wait for the indicator light to tell you all is well.

The camera is accompanied by a very comprehensive and well written

123 page manual. But be aware that this is a camera manual, and not a book of tips on how to take photographs.

At about \$800, this camera is a bit expensive for those who want only point-and-shoot, but highly competitive with comparable 35mm equipment for those who want more creative control. It is easy to use, but very powerful. Image quality is the equal of 35mm at print sizes up to 8x10 or so. More and better and cheaper will come along, but for those who choose to act now this camera deserves serious consideration. Bottom line: a joy to use and a topnotch photographic performer.

Network Basics And Broadband Routers By John Woody and Michael Espinoza

This is a look into the Small Office, Home Office network basics. It will begin how-to coverage concerning that class of routers known as broadband routers. This class of routers has been developed to handle low end broadband communication connections; this is at the low end of the digital communications techniques. Broadband communication provides connections in the 1100 to 1500 Kbps range downstream and 200 to 400 Kbps upstream, in general terms. These connections are direct connections; i.e., they are on all the time as opposed to analog and ISDN dial-up. A direct connection, as has often been noted, can be a security concern.

Broadband connections can be provided via two distinct technical methods. One method is through the television cable, called direct cable, and

the other is through POTS (Plain Old Telephone System) connections, called ADSL (Asymmetric Digital Subscriber Line). Both utilize frequency spectrum capability not normally available for the intended communication medium. In the case of direct cable, the frequency spectrum at the upper (in excess of 20 Mbps for downstream signals) and lower (in excess of 2 Mbps for upstream signals) end of the cable is available for data. This is in addition to the cable TV signals that may be transmitted.

The ADSL service furnished through the telephone system also uses frequency spectrum previously not used in the last 18,000 feet of the copper twisted pair POTS communication system. It's not completely true that this frequency spectrum has not been used, in that, the TELCO had previously used it for home and business security dialing at a much cheaper cost than broadband would demand. The POTS phone line continues to function for telephone, fax, or analog data communication as before.

What does this have to do with broadband routers, you ask? Well, for starters, with home and small business connections having this much (1100 to 1500 Kbps) bandwidth, more than one computer may be setup to be on-line at the same time. The best way to accomplish this is to establish a network for the computers and to install a router to handle the connection. The routers for this task are called broadband DSL/Cable routers, as noted above. Most of these routers have one or more, usually four, ports in a switch arranged to act as a smart hub in the network. One or more

computers can be connected to the router through the switch ports. The router then acts to keep the connection with the broadband modem, DSL or cable.

Broadband service—DSL or Cable

A brief description of broadband service, DSL or cable, includes the ability to provide a direct connection to the Internet. And, it goes without saying that either technique is much faster than analog dial-up Internet access. A general description of the physical connection for each broadband technique follows. However, each router may have its own install quirks that must be attended to from the instructions provided by the vendor.

In the case of direct cable, a splitter is installed to tap the data signal off of the TV signal. The cable company provides their signal through a series of subnetworks within their cable infrastructure. These subnets each service about 250 to 400 customers. Each subnetwork provides adequate TV and data signals through the COAX cable to provide both TV and data. The data COAX is split and run within the home or business to a demark wall plug. A COAX jumper cable connects the demark cable with a broadband cable modem. The cable modem is then either connected directly to a NIC (Network Interface Card) within a single computer or to the uplink in a hub or switch in a network. This cable is provided by the modem vendor and is a CAT 5 cross-over RJ45 cable. This is the point at which a broadband router comes into the picture. The cross-over cable is plugged into the router WAN (Wide Area Network) port. The computers are plugged into the router switch ports via RJ 45 CAT 5 cables.

In the case of the DSL connection, the ADSL functions are turned on at the TELCO CO (Central Office). A regular POTS phone line is used as the carrier. There is a physical limit to this service. The user's copper twisted phone line must be within 18,000 feet of the CO to maintain data signal strength. SW Bell actually requires that the service be within 17,500 feet. The TELCO can determine if a user is within the required copper distance during the phone call for service startup. As above, a DSL modem is attached to the demark line connection. The TELCO, SW Bell in San Antonio, provides line filters for the analog side of the phone line. The DSL modem is then either connected directly to an NIC within a single computer or to the uplink in a hub or switch in a network. This cable is provided by the modem vendor and is a CAT 5 cross-over RJ45 cable. Again, at this point, a broadband router can be installed in the network matrix. The cross-over cable is plugged into the router WAN port. The computers are plugged into the router switch ports via RJ 45 CAT 5 jumper cables.

As can be noted, the physical connection of the broadband router into the network is fairly simple. The router becomes another node on the local network. It's function is to know where to connect to in the next stage upstream from the network. Routers are specialized computers that send data along to it's final destination by knowing who is at the other end of it's connection between networks. Routers work between networks. Routers know where to send data by maintaining configuration tables of the connections inside and outside their network to other networks. The configuration table

maintains the addresses of each node inside the network and the addresses of other networks that it is directly connected to. An example for my broadband router is that it knows the addresses of the hosts in it's network by their IP addresses, and, the address of the next level up, either satx.rr.com, for Time Warner Roadrunner, or sbcglobal.net for SW Bell.

I need to make one point about these routers. Broadband routers are simple computers with a need for only limited knowledge about the inside and outside of the networks it services. The Internet Domain Name Server routers in the backbone have massive address list configuration tables to keep track of. All routers work within the TCP/IP protocol standards. Routers have two separate, but related jobs. First, they make sure that user data does not go where it should not go. This is crucial for keeping volumes of data from clogging the connections of bystanders. Second, the router makes sure that information does go to the proper destination address.

Broadband Router Configuration

In general, nearly all of this class of routers are set up by using a browser to log-on the router Web page using an Internet protocol address pre-set into the router. Most are set with one of the Class C non-routable IP addresses, 192.168.X.X, with a submask of 255.255.255.0. This allows up to 256 users on one transmittable IP address. The general settings that must be set up in the router Web page, are made using one's browser.

Most of these broadband routers have a quick setup page. In the Addtron ADR-200 router I am now testing, the quick setup asked for the WAN IP setup.

There are three choices: Dynamic, Fixed, and PPPoE. Dynamic WAN means that the ISP will dynamically assign the IP connecting address. There are not enough IP addresses to cover all the users in a subnetwork by the ISPs. By dynamically assigning these IP addresses, the ISP can have many users in the system just like the analog dial-up providers do. It is also a security feature as well. Fixed WAN means that the ISP provides an Internet routable IP address. PPPoE WAN means that the router will be connected to a VPN (Virtual Private Network) for secure communication. The only other entry in the quick setup is to assign the DOMAIN of the ISP so that the router knows where to send its data. This Addtron router is working through my Roadrunner connection at this time.

Most of these routers have advanced setup steps as well. The primary setup to be concerned with is the DHCP (Dynamic Host Configuration Protocol) built into the router. This function allows the user to set up the internal network as a TCP/IP addressing scheme. The usual DHCP addressing scheme installed in the router is a Class C IP addressing set, normally 192.168.1.1. With the DHCP function turned on, each computer NIC in the network can be set to receive it's IP address dynamically. Windows 95/98/Me, Windows 2000, and Windows XP all are ready to receive the IP address dynamically. The router controls the IP addressing to each computer and handles the NAT (Network Address Translation) between it and the ISP IP address. NAT, by the way, is a basic line of defense against hackers. The 192.168.X.X IP addressing scheme is also non-routable

to the outside world. DHCP functions in the router are setup via the router Web page setup scheme.

Broadband Routers On The Market

These routers are shelf items at computer stores. They can be obtained from catalog vendors, local computer stores, and wholesalers. Their cost is generally from \$59 to \$300. Keep in mind that you get what you pay for. The lower end routers do not have as many functions as the upper end models. I recommend that one pay for the upper end models in order to gain the security from hackers.

Vendors include Linksys, \$93 to \$159; Addtron Technology, \$98 to \$120; Multitech, \$275 to \$500; Sonicwall Tele2, \$529 to \$4,150; Zoom; SMC Networks, \$109 to \$259; Farallon, \$109 to \$264; Xsense, \$94 to \$279; Netgear, \$259; Watchguard, \$359 to \$1,999; Asante, \$145 to \$329; Cisco, \$1,139 to \$2,319; and Netopia, \$309 to \$639. One's pocketbook and sense of security should determine one's router of choice.

I have installed Linksys, Addtron, and Multitech broadband routers. Each presented it's own quirks in installation. None was hard to do. I personally like the Multitech line because I get good Customer Service help and a lifetime warranty. The Addtron router is a good shelf product and has a good warranty.

Conclusion

Broadband Internet connections provide each of us the ability to have high speed connections to the Internet. Adding a broadband router into the mix allows individuals and SOHO users the ability to set up and operate networks at home or in the small business. This class of routers is within the price range of

individual and SOHO users. And, they are not hard to setup.

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What Is A CPU By Lee Alexander Macon Users Group

The core of a PC is its CPU (Central Processing Unit). It is an IC (Integrated Circuit) of tiny transistors arranged in logic gates to perform the Boolean operations that carry out the instructions of the software code. Popularly, the type of the PC is identified by the CPU's development. A 386 PC meant the CPU was an 80386 unit. The next progression was the 80486, and Intel dropped the five digit numerical designation with its Pentium (5- series) chip.

IC's are fabricated by a complex process involving photolithography and the doping (adding positive and negative materials) of a thin, single crystal, silicon wafer. The generations of the CPU are astounding in their growth parameters. The aforementioned 80286, in 1982, was comprised of 134,000 transistors using 1.5 micron technology. The 1.5 microns refers to the smallest line width of the process.

A micron is one millionth of a meter (0.000001 m), equivalent to 0.000004 inches. A human hair is about 0.002 inches thick; one hair would cover 2000 side-by-side lines. Jumping ahead to 1993, Intel's Pentium CPU contained 3.1 million transistors and used 0.8 micron lines. The present top Pentium, the P4, has 55 million transistors and employs 0.13 micron technology and runs at just over 3 GHz (Gigahertz).

What's inside and what does it do?

Address—a number used within the CPU to locate a specific piece of data. Often used in place of the actual value, it can be more compact and act quicker.

Bus—an arrangement of conductors to carry data between logical units in the CPU. Buses are specified in terms of bit-width, the number of bits transmitted simultaneously. Intel's buses are 32 bits wide.

Cache Memory—there are two types: L1 (primary) resides on the CPU chip and is much faster than the off-chip L2 in the Pentium II and III CPU's. The latest P4 PGA (Pin Grid Array) has the L2 cache on-chip but in a separate location for efficiency.

Clock Speed—the frequency of cycles performed by the CPU in the tick of the clock on the mother board. Noted in MHz or GHz, it is not always a direct indication of performance.

Logic Gate—a circuit of transistors that outputs a signal (data) depending upon the data input. Gates come in a variety of configurations: AND, OR, NAND (not AND), and NOR. Basically, the computer sees the output as TRUE or FALSE.

RAM—not part of the CPU. It is the destination for the instructions and data from the CPU.

Registers—small elements of

memory within the CPU. They hold the temporary data for the internal workings of the CPU. This allows for a much faster operation than looking up an address of main RAM and fetching its contents.

Transistor—in the case of the most common FET's (Field Effect Transistors), three elements comprise the solid state switch: the Source, the Drain, and the Gate. The signal to the gate toggles the device on/off (open/closed).

ALU (Arithmetic Logic Unit)—the area in the CPU where arithmetic (!) and Boolean logic operations are carried out; such as incrementing a counter or summing values. The intermediate results are kept in registers.

Control Unit – implements the four basic steps for an instruction:

1. **Fetch**—sending the address of the next word in the instruction over the address bus and placing the value in the proper register.

2. **Decode**—transferring the data to the Decoder where the machine language is translated into binary code.

3. **Execute**—performing the math and logic that controls the data flow.

4. **Store**—recording the results in the correct registers.

FPU (Floating Point Unit)—the ALU can only perform integer math, using whole numbers. Some applications, notably CAD and other graphic intensive programs (games) require fractional values. Prior to the 486 family, this was a separate chip on the mother board.

Instruction Set—machine language code stored permanently within the CPU. It comes in two flavors: CISC (Complex Instruction Set Computer) and RISC (Reduced Instruction Set Computer). RISC has fewer commands,

and they are all the same word length for faster operations, but require more transmissions. Intel CPUs use CISC.

Prefetch unit—a small core of memory holds the next instruction and compares it to the contents of the cache and CPU’s main memory. This occurs while the Decode and Execute units go about their tasks.

Let’s follow some action on your PC. Suppose you reach a point where the OS (Operating System) requests a password, and you have previously set the PW to AardVark. Hitting the A on the keyboard sends the data through RAM to the processor. As this is not an instruction, the CPU recognizes it as data but does not know what to do with it. It therefore sends the data to the Prefetch unit, where it joins the line of pending data/instructions. The Prefetch unit scans the CPU’s main memory for an instruction, wherein the software tells the Prefetch to send the code via the data bus to the instruction cache. There it is assigned an address for future use. The Prefetch unit then sends the address and the data code to the Decode unit. The Decode unit translates the data, the instruction with it, and its address into binary code. The translated information is then sent to the Control unit, which is told to store the data in the Data cache and wait for further instructions. Almost simultaneously, the letter A appears on your monitor (due to the built in instructions) via the Data bus. The process is repeated for the remaining seven letters of your password.

When you hit Enter, a new procedure begins. The BIOS (Basic Input/Output System) runs the command to read through the Data bus to the Prefetch unit. Checking the

Instruction cache, it finds none and goes on to main memory. The OS sends the Prefetch the collected data of eight letters and a command to compile (translate) and compare the data with a known stored value. The new instruction, addresses, and data are sent to the Decode unit where it again converted to binary code. All this is now passed on to the ALU for processing. The Control unit sends the first letter of the stored password (in the OS) as binary code along with the address of your first typed letter, which has been stored in the Data cache. The ALU runs a Boolean compare on each bit of the binary code for the first letter. The result, a TRUE or FALSE, is stored in a memory register until the comparison is complete for each character.

A parallel “computation” has found an instruction in the main memory to provide access if the information from the Prefetch unit, the Instruction cache, and the Decode unit all result in a final condition of TRUE from the ALU. Now you can proceed—or gracefully quit.

For a more detailed view of CPUs and their features, you can visit www.pcmag.com and scroll down to Comparison: CPU Road Map.

Ultimate Backup—Part 2 Multiple Removeable Hard Drives By Warner Mach SEMCO Member

A year ago I had two machines custom built. One was for my mom, and one was for me. The machines were the same, each having two removeable hard drives. The primary concern in the case of my mom’s machine was ease of

recovery in case of a problem. The concerns in the case of my machine were ease of recovery and the ability to use different operating systems. In the June issue of the DATA BUS is an article describing my successful experience in the case of my mom's machine.

It is amazing to me that it is necessary to have a machine like this custom built. Why don't we see such machines at Comp USA or Best Buy? Corporate server experts regularly use machines like this. I was telling the server guy at work about my machine, and he said, "Yea, I have a machine like that to test out new stuff!" In my view, it is even more important for individual users to have such a simple backup system.

Advantages of multiple removable hard drives:

(1) You can backup to another physical disk and remove the clone from the machine. Recovery consists in switching the problem disk with the good disk.

(2) You can have special disks for special purposes; for example, for games or for digital photography. Games seem to frequently interfere with other programs. In the case of digital photography you generally have to install a system from a CD-ROM. Every time you want to use a new digital camera the system that comes with it wants to take over certain image designations (like .jpg or .mpg).

(3) You can use different operating systems (98, XP, Linux).

(4) You don't have to be afraid to do dangerous experiments.

It is actually a sort of paradigm shift to separate the hardware and operating system in your mind. I believe that

commercial interests want you to view the operating system and the hardware as being 'wedded' together.

Disadvantages of multiple removable hard drives:

(1) Makes machine somewhat heavier.

(2) Somewhat expensive to buy separate disks.

(3) You may have to check with Microsoft on how many copies you are allowed to have.

Considerations:

(1) Linux: You have to specify LILO boot system rather than GRUB (GRUB is the default for Red Hat 8.0); otherwise the Ghosted clone will not boot.

(2) XP Ghost cloning is very fast (around four minutes). Linux is longer (around 15 to 20 minutes).

(3) Set up some kind of labeling system. I purchased some 4"x2" removable labels to put on the bottom of the inner drawers.

(4) You have to 'freeze' the hardware when you are ready to go. Get the number of internal drawers and disks that you will need at the time of purchase. If you go back to get more you will discover that technology has moved on.

(5) Be aware of master/slave jumpering on the drive. Your machine should be set up to be all master.

(6) Ghost 2002 or 2003 is required for XP. Ghost 2003 is easier to work with; you don't have to capture and type a long ID sequence.

(7) You want to use a boot diskette for cloning. As far as I know, you have to load Ghost on a 'windoze' machine before creating a diskette.

(8) Be sure that inner drawer is firmly pushed into connector and the

key is locked when attempting cloning or booting.

Successes:

My major project was a success. I can clone XP and Linux (Red Hat version 8.0) and back up disks using Norton Ghost.

Failures:

(1) Because of differences in disks (all Maxtor): (i) I could not use 7200 RPM (Ultra ATA/133) disks in place of 5400 RPM (Ultra ATA/100). The 7200 RPM clone would boot and do simple things, but I could no longer get the DVD drive to work. (ii) I could not use the 5400 RPM 19 GB 'Ultra DMA' hard drive in the removeable hard drive system. The machine would not recognize it.

(2) The Alohabob 'PC Relocator' requires an operating system on both ends. It is not possible to do simple cloning from machine to machine. Furthermore, the target machine has to have an equal or higher operating system.

Last week my friend Fred and I ordered, for him, a multiple removeable hard drive system. He has had a history of installing one piece of software only to see other hardware and software functions disappear, so a reliable backup system is a good investment.

We went to the local 'mom and pop' computer store and told them what we wanted. He got a fairly high-end machine (four 80 GB disks), a 1.8 Mhz AMD machine, for around \$1200. He could easily have ordered a less expensive machine and would have kept it under \$1000.

At the July 13 SEMCO meeting Warner demonstrated his machine and presented the information in this article to the SIG Intermediate group.

Security Testing Online Fraud Or Not? By Greg West

Recently, while researching material, I came across an article which discussed "Spring Cleanup" and computer maintenance. The first suggestion was to run your computer through an online test to see whether your system is secure or insecure. The current warnings of updating patches, Spam attacks, and overall computer safety, prompted me to say "why not," as I clicked into "NanoProbe Technology Internet Security Testing for Windows Users" that uses a program called: Shields UP!! <<http://grc.com>>. Suspecting a scam of some sort, I figured I would attempt to trick this program. I would run the test twice, once with my firewall turned off and another test with it operating.

My curiosity peaked immediately after my first click when I received a message that I "was about to view pages over a secure connection," a more than familiar message indeed. So I continued on, yet still mostly skeptical that there was some sort of come-on to reach out and take my money. No sooner than I clicked the "ok" button did I receive this strange message:

"Greetings Gregory! Without your knowledge or explicit permission, the Windows networking technology which connects your computer to the Internet may be offering some or all of your computer's data to the entire world at this very moment! (For example . . . that's how I know your name!)"

Next I was given a choice of testing my "Shields" or "Ports." I clicked on "Shields" and became even more skeptical when I received this message:

“Preliminary Internet connection established! Your computer has accepted an anonymous connection from another machine it knows nothing about! (That’s not good.) This ShieldsUP! web server has been permitted to connect to your computer’s highly insecure NetBIOS File and Printer Sharing port (139). Subsequent tests conducted on this page, and elsewhere on this website, will probe more deeply to determine the extent of this system’s vulnerability. But regardless of what more is determined, the presence and availability of some form of Internet Server HAS BEEN CONFIRMED within this machine...and it is accepting anonymous connections!”

The message continued to give the full details of its findings, or non-findings:

“The rest of this website explains the implications and dangers of your present configuration and provides complete and thorough instruction for increasing the security of this system. At the moment, any passing high speed Internet scanner will quickly spot this computer as a target for attack. The phrase you must remember is: ‘My port 139 is wide OPEN!’ Unable to connect with NetBIOS to your computer. The attempt to connect to your computer with NetBIOS protocol over the Internet (NetBIOS over TCP/IP) FAILED. But, as you can see below, significant personal information is still leaking out of your system and is readily available to curious intruders. Since you do not appear to be sharing files or printers over the TCP/IP protocol, this system is relatively secure. It is exposing its NetBIOS names (see below) over the Internet, but it is refusing to allow connections, so it is unlikely that

anyone could gain casual entry into your system due to its connection to the Internet. Several of your private names are being served up to the Internet by the Windows networking system. (see below) While it’s unlikely that this information can be exploited, you should know what anyone can learn about you and your system.”

But the kicker was that my User Name, my Computer’s Name, and my Workgroup was identified on screen. I knew I had to go to the next level and test my Ports. Here are the results of the Port testing:

It declared that my Port 80 (http) was open and that “having port 80 ‘open,’ as it is here, causes intruders to wonder how much information you might be willing to give away.”

The test program also found my Port 139 (Net BIOS) was open, and I received this warning:

“As you probably know by now, the NetBIOS File Sharing port is the single largest security hole for networked Windows machines. The payoff from finding open Windows shares is so big that many scanners have been written just to find open ports like this one. Closing it should be a priority for you!”

Well, I must admit I was becoming a tad worried, but still I was skeptical towards the reality of these results. Next I wanted to run these test using my Zone Alarm Firewall operating. Here are the results of testing both my shields and ports:

On the Shield’s test with Zone Alarm Firewall on I got the same first “GREETINGS” message as without it, only this time it did not contain my name. The results were amazingly secure. The Shield’s UP test could not find my Port 139, nor was it able to connect with my

NetBIOS to my computer. Here are the results of the Shield's test:

"Your Internet port 139 does not appear to exist! One or more ports on this system are operating in FULL STEALTH MODE! Standard Internet behavior requires port connection attempts to be answered with a success or refusal response. Therefore, only an attempt to connect to a nonexistent computer results in no response of either kind. But YOUR computer has DELIBERATELY CHOSEN NOT TO RESPOND (that's very cool!), which represents advanced computer and port stealthing capabilities. A machine configured in this fashion is well hardened to Internet NetBIOS attack and intrusion. Unable to connect with NetBIOS to your computer. All attempts to get any information from your computer have FAILED. (This is very uncommon for a Windows networking-based PC.) Relative to vulnerabilities from Windows networking, this computer appears to be VERY SECURE, since it is NOT exposing ANY of its internal NetBIOS networking protocol over the Internet." My fire wall came through with shining colors and with full security.

Next was the Port test with the firewall operating. This test reported my Port 80 was open (http). However, this is my connection to the net, and my firewall blocks the incoming attacks as they are produced, giving me the choice whether to accept or reject; but nothing comes through without my acceptance. So this warning is ok.

The next warning I received was again concerning Port 139. This time I got the same message, that it could not get through to this port. Also, "There is NO EVIDENCE WHATSOEVER

that a port (or even any computer) exists at this IP address!"

Not a fraud, only success! My confidence in firewalls stands firm, sound, and free of worry.

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The Windows Registry Demystified

By Dale Oliver

The Windows registry can be thought of as a database that contains information about everything relating to your computer, including the operating system, installed software programs, preferences, settings, file locations, drivers, hardware, etc.

Virtually everything about how your system operates can be controlled through the registry. Registry settings can cause your computer to run very inefficiently, or run very fast and efficiently.

The Windows registry first appeared in Windows 3.1. It was much simpler then, consisted of a single file named

REG.DAT, and had only a limited scope compared to the modern Windows registry. Windows 9x versions of registries touch virtually every detail of how the system operates, and consists of two files found in the \WINDOWS directory: SYSTEM.DAT and USER.DAT. Windows NT registries are spread over a number of files.

The registry can be easily modified, and is far less mysterious than you are led to believe. If you are comfortable changing preferences in programs, such as setting the default font or file locations in your word processing program, for example, you should feel comfortable changing the settings in the Windows registry.

Always follow this procedure when making changes to the registry:

1. Backup the registry.
2. Make the desired changes to the registry.
3. Test the changes.
4. Restore the registry if you notice problems.
5. Delete the old backup after a period of time (a week or so) of problem-free use.

DEMO: Backing up the Registry:

1. Click Start > Run (or Window key + R).
2. Type regedit and press Enter.
3. Make sure My Computer is highlighted in registry window.
4. Click Registry > Export Registry File from main menu.
5. Name the export file and click the Save button.

DEMO: Restoring the Registry:

Double-click the desired backup file.

This process is even better than manually copying the registry files, since the registry files are constantly

open whenever Windows is running, so they must be copied from a DOS prompt after resetting their attributes from hidden, system, read-only prior to copying. Additionally, using RegEdit allows you to select only the particular registry keys you want to export, which can be very handy if you only want to fiddle with limited parts of the registry and not reinstate the entire registry contents to “undo” your changes.

The items that appear as folders in the left pane of the Registry Editor window are known as “keys,” and the contents of these keys are called “values.” Much like the arrangement of folders organizes the files on your hard drive, registry keys can contain other keys as well as multiple values.

Unlike editing a document, changes made to the registry are immediate. You don’t manually save the changes. They are instituted the moment you change something in the registry. There is also no “undo” feature in RegEdit per se, so you will want to pay attention and not be sloppy if you decide to make changes to the registry. Remember, a current backup of the registry is important in case you goof something up and need to undo your changes.

Windows automatically checks the registry and makes a backup of the existing one every time you restart your computer. If the Registry Checker software notices a problem, it automatically replaces the registry with the latest known good backup copy. It does not, however, fix references to missing files or programs. That requires aftermarket software. Some well-known vendors include FixIt, System Mechanic, and Norton SystemWorks.

Microsoft used to offer a free utility named RegClean to do this, but

they have since removed it from their download sites in an effort to “protect users from themselves.” You can still find copies at various places around the Web, such as John Woram’s site <<http://www.woram.com/UTILITY.HTM>>. BEWARE that RegClean does not work with all versions of Windows, namely newer versions such as XP and 2000.

DEMO: Manual Check:

To manually run the Registry Checker software, go to Start > Programs > Accessories > System Tools > System Information. From the System Information program’s main menu, select Registry Checker. The System Information program provides a powerful tool for looking at many of the inner workings in your system.

For example, from the left pane, select Software Environment > Startup Programs to see all the “stuff” that runs when the computer boots up. And you wonder why your computer takes so long to boot!

DEMO: Configuration Manager:

From the main menu, select Tools > System Configuration Utility. Notice that you can do neat things here like the Diagnostic Startup to help with troubleshooting problems when your computer boots.

Also notice the different tabs, including the Startup tab. This also shows you everything that runs when Windows boots up, but gives you the choice to run the program or not. This can be a powerful troubleshooting aid when you’re having problems with the Windows booting up.

DEMO: Storing Registry Backups:

By default, the automatic registry backups are stored in the \Windows\Sysbackup\ folder. This is a “hidden” folder. By default, Windows

keeps five separate copies of your registry here, using the names RB001.CAB through RB005.CAB. More advanced users can modify the ScanReg.INI file located in the \Windows\ folder to configure a number of specific features relating to registry backups, including the number of backup registry copies to keep.

Read the article on CAB files at <<http://pcgroup.nwark.com/vpres-a0.htm>> to learn more about how CAB files work.

DEMO: Customize:

Simply browsing the contents of the registry without making changes can be a very enlightening experience, and can help you understand a lot about how your system works. However, there are also many very helpful and powerful things you can do by making simple changes to the Windows registry settings.

For a simple example of how you can make Windows suit your needs, one of our club members complained about the scrolling single-column display of program selections in Windows 98. Don’t like it? Change it! Go to the registry key and add the following string value (right-click Advanced folder, select New > String Value, type in StartMenuScrollPrograms; then press Enter). Now right-click the new entry and select Modify. Type false into the Value Data field.

For those of you who like to run Tweak UI, note the fact that it is basically nothing more than a fancy registry editor.

For a very informative article on the Windows registry written in plain English, you may want to read a very helpful article at:<<http://www.itp-journals.com/sasample/E1209.pdf>>.

PC Pitstop <www.pcpitstop.com> and PC 911 <www.pcnineoneone.com> are good sites to help you learn more about your computer and run tests that will suggest ways to improve system performance and reliability.

Having chronic BSOD's and other unexplained errors while using Windows 98? Check out:<<http://www.pcnineoneone.com/tweaks/fixes1d.html#vxd>>.

WinGuides <www.winguides.com> has good information about how to tune up your PC, tweak the registry to increase system performance and reliability, etc.

An amazing site for information about how to tweak the registry and various other parts of Windows to maximize your computer's broadband connection can be found at <<http://www.speedguide.net/>>.

Dale Oliver is a member of the Southwest Arkansas PC Users Group.

Making A Two-Computer Network

By Frank Fahey

For a while I have known that you can create a two-computer network without a hub/switch, but both computers with an installed network adapter (NIC). This would be the simplest network for moving data quickly between two computers and/or sharing a printer. If the purpose were to share an Internet connection this would not be the best approach. So to verify how to do it I took two laptops with one having a built in 10/100 Ethernet connection and the other a 10/100 PC Card. I knew that the TCP/IP protocol would be the best

choice, and I am assuming that you can configure your NIC in both computers for that protocol. If that is a problem you may refer to a previous article that I wrote at <<http://www.hargray.com/%7effahey/NIC/index.html>>.

Basically it is assigning a fixed IP to the two computers. Both computers need to be in the same workgroup and have been assigned separate names. You should also have set file and printer sharing in Network properties. Next, the IP cannot be a public IP such as those used on the Internet. We will use the most often used one for private networks, and that is 192.168.xxx.xxx. All IPs are four bytes, and a byte can support numbers from 0 to 255. The xxx I have shown just indicates that numbers from 0-255 are acceptable. I am going to suggest the IP numbers to use should be 192.168.100.10 and 192.168.100.11. Once I have fixed the third byte (100 in this case) all computers in the workgroup can use any numbers from 1 to 254 to be recognized in the workgroup.

Configuring in Network properties is next. In Windows 9x and ME right click on Network Neighborhood and then properties. In the General tab that comes up select TCP/IP -> "Your NIC," and then click on Properties below the box. The first tab that comes up is IP Address. Select Specify an IP address, and two boxes become available to enter an IP Address and a Subnet Mask. Put 192.168.100.10 or 11 (the assignment for the particular computer) and enter 255.255.255.0 in the subnet mask. Select the WINS Resolution tab and verify that it is disabled. Next select the Gateway tab and enter either 192.168.100.10 or 192.168.100.11 for the one used in the IP address. Click on

add, and the number will appear for the gateway. Click on the DNS tab and verify that it is disabled. Click on the Bindings tab, and you should see client for Microsoft Network and File and Printer sharing selected. In Windows 2000 and XP you will be right clicking on My Network Places and then selecting local connection and right clicking for properties. The information is the same but presented a little differently. Basically, all the above information should now be the same, and you should enter it in the appropriate areas.

The final item needed is a cable called a Cat5 Crossover cable. Category 5 or 5E covers the current cables used to connect Ethernet devices. A crossover cable has special connections of some of the wires to permit uplink from a hub/switch to a hub/switch or to connect directly two computers. You need to purchase the crossover cable in a length to fit your particular use. Typical lengths are from 3 to 100 feet, and you can find a source locally at a store selling network parts, or try entering "cat5 crossover cable" on the Google search line to find many more sources. Plug the cable into both computers and you are finished.

However, now we have to decide what is to be shared. In the network we have created each computer decides on what is to be shared, and if the sharing is to have passwords or read only properties. In general, you freely share in the environment that we have just set up. If you double click and open My Computer or open Windows Explorer, right clicking on any drive or folder will have a Sharing selection. It changes somewhat between Win 9x and ME and Win 2000 and XP but you prob-

ably should share full rights on the selected drive or folder. You can share floppy, all hard, CD, and ZIP drives. For printers you click on Start->Settings->Printers and right click on your printer and select sharing. All shared items have an open hand under the icon. You do need to install the shared printer on the other computer. Open Add New Printer, select network printer in the Printer Wizard and answer the other questions. Generally, the other computer supplies the printer driver.

Sharing computers is great for moving data and backup protection.

Frank Fahey is a member of the Hilton Head Island Computer Club
<<http://www.hhicc.org>>.

Spam Sleuth Version 2.0 Software Review By Franz Breidenich SEMCO Member

Spam Sleuth is a spam elimination program. I received this program on a CD that had all the various software published by Blue Squirrel and a paper manual with the activation code (VIP Key) pasted on its cover. The manual had a total of 76 pages with the last two pages being an index.

To start the installation you install the Spam Sleuth files on your hard drive. After installing the files it gives the choice to read the README.TXT. This option may be of help in getting started with the software. When you first start the program the InstantX registration dialog box appears. Blue Squirrel wants you to register the program even if you did not buy the program.

The next step is the Configuration Wizard, which discusses the two ways to set up the program. POP3 Proxy mode and Polling mode are the choices. The manual has more than a page devoted to these two choices. The default mode is the Polling mode. To change the mode, select the account and make the change on Page 2 of 4 of the Configuration Wizard. In the Configuration Wizard you also verify that the information is correct for your e-mail account. The last window asks how you connect to the Internet. The Spam Sleuth manual also has setup instructions for Hotmail and AOL accounts. But in order to use this program with Hotmail and AOL accounts you must purchase an additional program called "WEB2POP" from Blue Squirrel for about \$10.00.

The next section of the manual goes into Spam Detection Basics. It tells how the spam problem is getting worse every year. The manual then describes how Spam Sleuth eliminates spam. Spam Sleuth uses many different criteria, some of which are Spam positive and others that are Spam negative. Each of these criteria has either negative or positive points assigned to it. If the message has 190 points or greater, then Spam Sleuth puts it in its spam file for 30 days. If the message has 10,200 points, it puts the message in permanent trash. The user can change these settings according to his or her needs in the score area.

Let's look at these criteria, which the author calls "analyzers."

Friends Analyzer

The Friends Analyzer is the most powerful one. If the sending e-mail address is on this list, the e-mail will be passed through the program. I dumped

all my friends' e-mail addresses into this list from my address books. You can also use an asterisk as a wildcard. For example, *@company.com would put all the people who have company.com e-mail addresses on my friends list.

Mailing List Analyzer

Similar to the Friends Analyzer is the Mailing List Analyzer. If a company's address is on the mailing list, its messages will come through. I have tested this feature, and it works.

Spammers Analyzer

Spammers Analyzer is the second most powerful Analyzer. If an e-mail address is on this list, it will go directly to the spam file. The program comes with a list of companies that send out spam already entered in this Analyzer.

To Analyzer

To Analyzer will filter out messages sent to "Homeowner," "Resident," or "Car owner." In order to use this list, you list your own e-mail addresses in the To Analyzer, and when you get a message addressed to "Homeowner," it add points to the score. If you get an e-mail message that has many "To" or "CC" addresses on the e-mail, you can add points to the score. Here again you can set the threshold and number points for these messages.

Good Word Analyzer

Good Word Analyzer will allow you to put a subject that interests you in the good word list. In my case I would put SEMCO on my good word list, so I will be sure to see any message I receive with that word. I would put SEMCO=10,000, so that it would deduct 10,000 points from my score for this e-mail.

Bad Word Analyzer

Bad Word Analyzer will allow the user

to assign words like mortgage or Viagra, a high score, so they will go directly in to the spam file. There are already many words in this file, words like “cash,” “Click here,” “loan,” and many others.

Profanity Analyzer

Profanity Analyzer has a list of profane words in it. You cannot see the words that are on this list, but if you type in a profanity it will tell you if the word is on the list. Here, as in all the other lists, you can add words and change the score.

Attachment Analyzer

Attachments Analyzer will remove attachments that have executable files and put them in the spam file. I tested this feature, and it worked as stated. Spam Sleuth removed the attachment and let the e-mail into the Inbox. I was then able to go to the spam file, mark the file as not spam, and put the attachment into the Inbox. Be aware that most of these files come from people who are on your friends list. Most virus checkers should also pick up these as viruses before you open the message (if they are viruses).

Subject Analyzer

Subject Analyzer looks at spacing, capitalization, and also looks for the sometimes legally required “ADV” to determine if the message is spam. The Michigan legislature is trying to pass a law requiring this wording for advertizing spam. This Analyzer also looks for other tricks that Spammers use so that the ISPs will not screen out the messages. The default score for the word “ADV” is 150 points, but the user can change it.

Charsets Analyzer

Charsets Analyzer checks for foreign character sets and will eliminate many of these messages. By default the program will eliminate Chinese and

Korean Character sets. You can add others if you want.

HTML Volume Analyzer

HTML Volume Analyzer will look for messages that have loud colors, big fonts, embedded pictures, and other professional techniques not generally used by amateurs.

Blacklists Analyzer

Blacklists Analyzer has the IP address of all the spam servers in their listing. When you activate this list, it will go out to the blacklist servers you have selected and check those servers to see if the sender of your message is on their blacklist. You should not select more than one or two of these servers because of the time it takes to search the listings.

HTML Remover Analyzer

HTML Removal Analyzer is a unique feature of Spam Sleuth. In its default mode it will remove HTML script and, as a result, you may lose some flying logos, but you will not be directed to another web page. If you like plain text, then HTML Removal can take out much of the fancy text formatting. It can also remove links; if you have kids, this may be a feature you want to use. There are two kinds of images that can appear in e-mail, internal and external. The most dangerous, the external, are on an external web site, so the sender will know if you access these images. HTML Removal can remove these images, Web Bugs, and Read Receipt Requested from your e-mail.

Valid Sender Analyzer

Valid Sender Analyzer checks to see if the e-mail has a valid From address and if it matches the Reply To address. In some cases the From address may be vacant, and the Reply To address goes to a spammer. Finally, it checks to see

if the Reply To address is a valid IP address.

Turing Analyzer

Turing Analyzer is turned off by default because it sends out e-mail. This option sends a challenge to any e-mail detected as spam. If the message goes through, then most likely the e-mail is not spam. The author recommends that you turn the option on.

Bayesian Analyzer

Bayesian Analyzer looks at your previous e-mail and learns the characteristics of good e-mail and spam. This requires some work on the part of the user to train the analyzer.

E-Mail Stamps Analyzer

With the E-mail Stamps Analyzer you request the sender to give you money to open up his mail. Not too many spammers will pay to have their mail picked up. This is by default turned off. The author recommended either this option or the Turing option, but not both.

Bouncer Analyzer

Bouncer Analyzer makes the sender think that they have reached an invalid account. They get e-mail back from the ISP that the message could not be delivered. With this option you may miss important messages. The author recommends the Turing option instead.

This is the last of the Analyzer options.

Configuring and Operating

The next approximately 40 pages of the manual are on how to configure this program. It explains every line on every window used to configure and operate Spam Sleuth. My advice would be to read every one of these pages in order to get the most out of the program. In order to maximize your use of Spam Sleuth you must tweak the settings and options so that the

program will stop most of the spam and let the valid e-mail in. I do not think that anybody will be 100% successful in eliminating all the spam and allowing all the valid messages in.

Advanced Features

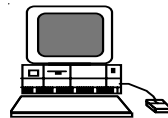
The last 12 pages of the manual cover the advanced features of the program. These features include Program Updates, Logging, Hidden Settings, and more. The author has Tips and Tricks in this section. This section also includes Customer Support and Reference Material.

Conclusion

Spam Sleuth 2 is a great program that one has to use for a while in order to get the full benefit of its spam elimination powers. In just a few days I have improved my spam rejection and am receiving more of the valid e-mail.

You can order this program, with a 50% user group discount at \$14.97, using the a form you can pick up at the next SEMCO meeting. Or, the software can be downloaded from the Blue Squirrel website at <http://www.bluesquirrel.com/usergroup>. You can also obtain a Blue Squirrel Catalog CD. This catalog contains all the various software Blue Squirrel publishes, but they give you only the paper manual and activation code for the software you purchase. Also you can call 800-403-0925 to obtain Spam Sleuth, but be sure to tell them that you belong to SEMCO and want the user group price of \$14.97.

Franz Breidenich can be reached at franzb@ameritech.net.



Digital Camera Flash Cards

How Many Photos Will They Hold

By John Hoffmann

One must go back and ask, “What are you going to take pictures of? Portraits, scenery, grandkids growing up? All of the above I assume.

The following is MEMORY 101, I guess. A digital sensor (CCD for Charged Coupled Device) is a small card made up of many photocells which respond to light intensity to generate a given voltage. The voltage represents shades of gray, but can be converted into colors. Each cell is then digitized into a 24-bit pixel, which represents a point on your computer

screen or a point on your printed picture. A few other things are also done when converting the cell data to picture data.

Now let’s do the Math. Suppose you have a 5 MegaPixel digital camera. This means you can set about 5,000,000 pixels of picture data from side-to-side across the sensor. Now recall that each pixel is 24-bits (8 each for Red, Green, Blue) that can produce 16 Million colors—a very common setup for your computer viewers. Then there are 8 bits per byte—OK! 5,000,000 pixels per picture times 24 bits (on or off data, i.e. 0 or 1s) per pixel divided by 8 bits per byte equals 15,000,000 bytes per picture. We usually say 15 Megabytes, or 15 MB.

So, you want a Flash card? How about buying a 128-MB card for about



Letter From The Editor

In the last weekend of June the Rochester Lions Club conducted the 2003 Detroit Metropolitan All American Soap Box Derby on the 3rd Street Hill east of Main Street in Rochester. It’s billed as “The Greatest Amateur Racing Event in the World.” You should have seen it. I went for old time’s sake, since I was a participant myself in 1936 through 1940. In case you didn’t know, this is a race of gravity-powered cars driven by 8-17 year old kids who build the cars themselves. This event was well organized and run by the Lions, and in color and excitement it was much like it was in 1936. But there were some notable differences.

In 1936 in Chicago there were 700 entrants, and racing occupied 4 days. Rochester had about 50 cars. In 1936 the cars were all built from scratch over a period of many months, and there was a great variety in appearance and speed. Materials for my car cost \$7.81. This year the cars were assembled in an afternoon from kits purchased from the Derby for over \$300, and they were all nearly identical, so they all reached the finish line in almost the same time. Most notably, the 1936 race was for boys only; this year, to a casual observer, there appeared to be as many girl drivers as boys. (What do you suppose that means?)

I never won any prizes for speed in my 5 years of racing, but one year I won a 6-tube “portable” radio (that must have weighed 20 lbs) for having the best designed brakes; I wasn’t fast but I could stop good.

Bill

\$70, although I heard they can be had for \$40. 128 MB divided by 15 MB per highest resolution picture yields 8 pictures. WOW! Flash cards do come in the Gigabyte memory amounts, but they cost more than the camera.

If that is not enough pictures, be prepared to lower your quality standards. Compressing the data so less memory is used reduces the storage requirements. Now one loses quality as the picture is uncompressed; i.e., not all the original pixels were stored, and the missing ones are calculated out via math techniques.

My Nikon 5700 5 Megapixel camera has compression levels of 4, 8, and 16. OK, now, so I am on a long vacation and will take lots and lots of pictures of Granny, etc. For my 128-MB card and maximum compression, I can take about 16 times 8, or 128 pictures. That ought to be enough.

John Hoffmann is the Digital Camera SIG Leader for the Coastal Area Users Group, Corpus Christi, Texas. You can contact him at: <mhoffman@stx.rr.com>.

Tip:

I received an e-mail the other day that showed a list of a dozen recipients' e-mail addresses in the "To" field, and a 2-sentence message. I needed to print the message for my wife, but I failed to notice the small down arrow at the end of the list of addresses. I punched the print button and got 12 pages of e-mail addresses along with the message. When you send a message like that, unless everyone needs to see the list, please put one recipient address in the "To" field and the rest in "bcc."

	BOARD MEETING 7/13/2003 Carol Sanzi
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Board Members Present:

President Gary DeNise, Treasurer Roger Gay, Secretary Carol Sanzi, SIG-Advanced Chairman Franz Breidenich, SIG-IBM Co-Chairman Tom Callow, Warner Mach representing SIG-IBM Intermediate Chairman Jack Vander-Schrier, Publications Committee Chairman Bill Agnew, and Members at Large Bob Clyne and Chuck Moery. Arriving late was Vice-President Vic Charns. The meeting was called to order at 12:09 p.m.

Old Business:

Treasurer Roger Gay reported that the bank balance is \$4809.10 with \$30 net deposited. SEMCO's membership stands at 83 with renewals due from Donald Pullem, Keith Kossuth, Al Lewis, and Robert J. Rucinski. Tom Callow moved to reimburse Warner Mach \$9.20 for refreshments. Franz Breidenich seconded the motion, and it was carried.

New Business:

Gary DeNise suggested that it's time to register for the APCUG Fall meetings, which take place in November. The cost increases as the date approaches.

A discussion was held regarding the revision of the membership renewal form. Directors will review the current form and have suggestions next month.

Warner Mach moved to adjourn. Tom Callow seconded the motion, and it was carried. The meeting adjourned at 12:45 p.m.

Tip: Writing an article about your computer experiences for the DATA BUS will make you feel good.

SPECIAL INTEREST GROUPS (SIGs)



SIG-IBM
Tom Callow
Warner Mach



SIG-IBM INTERMEDIATE
Jack Vander-Schrier

August 10: Free (Or Almost Free) Utilities: SIG-IBM Co-Chairman Tom Callow will demonstrate utilities to tweak your computer, or just make life easier on your computer.

August 10: Basic Video Editing And Recording: Long time SEMCO member and former SEMCO President Bob Clyne will demonstrate how to do basic editing of video and how to record such video to DVD.

TAX DEDUCTIBLE DONATIONS

Beth Fordyce is accepting Macintosh computers, components, peripherals, manuals and software (working or broken) for Immaculate Heart of Mary School PreK–8th grade, 175-200 students for computer science classes.

Contact Beth
734/453-0349 7pm–10pm or
bfordyce215331MI@comcast.net
You may also contact the school directly: Sister Mary Stephanie Holub
19940 Mansfield
(Greenfield/8-Mile area, Detroit)
313/272-0990

NOVICE-IBM GROUP Rotating Volunteer Hosts

August 10: Q&A: Discussion directed by the Audience.



SIG-ADVANCED
Franz Breidenich

Oct. 6: (No meeting in Sept.) Meetings held first Monday, 6:45 pm, at the Oak Park Library. The library is located at 14200 Oak Park Blvd., Oak Park, MI. Phone: (248) 691-7480. Directions: 14200 Oak Park Blvd. is 9 1/2 Mile Road, located west of Coolidge. Best route from freeway is to take I-696 to the Coolidge exit. Head south on Coolidge for 1/2 mile to Oak Park Blvd. and turn right. **Topic: Wide ranging discussion of computers and computing.**

THANKS

Your DATA BUS editor, and all SEMCO members, owe a great debt of gratitude to Beth Fordyce and Bob Clyne for their undying efforts to proofread each issue of the DATA BUS, correcting all the editor's goofs. Without their work it would be hard to read and much sloppier.

September 2003 DATA BUS DEADLINE (7th day after meeting)

SEMCO & SIG DATA, & MEMBERS' ADS - Deadline: Sun, Aug. 17, 11:59pm.

Members' personal ads are free. To mail, use Editor address on Page 2; e-mail address: [<agnew@bignet.net>](mailto:agnew@bignet.net). PLEASE send to arrive sooner than deadline if possible.

BUSINESS ADS - Deadline: Second Friday monthly. Mail **unfolded** camera-ready copy; payment in full made out to SEMCO, to the Editor (address Pg 2).

Bill Agnew
agnew@bignet.net
(to post monthly computer group info)

**CALENDAR-OF-EVENTS
OTHER GROUPS**

AAIICI (American Association of Individual Investors, Computerized Investors)

Aug. 23–Saturday, 10am-noon (4th Saturday); W. Bloomfield Huntington Bank, Orchard Lk Rd., S. of Maple Rd. Info: Jack Lockman at 313-341-8855 or <thunder@tir.com> .

COMP (Computer Operators of Marysville & Port Huron)

Sept. 3–Wednesday, 7 p.m. (1st Wednesday): Rm 201, Clara E. Mackenzie Library-Science Bldg, 323 Erie St., Port Huron. Ron Walters, 810-679-4144. Web: <<http://www.bwcomp.org>>. Topic: To be announced.

DCOM Computer Club

Aug. 8–Friday, 6:30 - 8:30pm (2nd Friday); Henry Ford C.C., Patterson Tech Bldg, Ford Rd/ Evergreen, Rm T143, Parking Lot C. Info: Doug Piazza 313-582-2602.

Delta Computer Club

Aug. 28–Thursday, 7 pm (last Thursday); Bay de Noc C. C., Escanaba. Info: Gordon Nelson, Pres. & Editor at <gnelson@bresnanlink.net> or 906-428-1014.

DPUG, (Detroit Palm Users Group)

Sept. 11–Thursday, 7pm (No meeting in August); Kensington Community Church, northwest corner John R & Square Lake Rds, Troy, MI. <<http://www.dpug.org>>. **Free membership.**

MacGroup Detroit

Aug. 24–Sunday, 3pm-5pm (Special Day); Bloomfield Twp. Library, 1099 Lone Pine Rd. (corner of Telegraph Rd.). Info: Terry White, <tery@macgroup.org> or 313-571-9817. <<http://www.macgroup.org>>. Topic: 17th Anniversary Celebration.

MacTechnics, (MAC User Group)

Aug. 16–Saturday, (3rd Saturday); Coffee 9:00am, SIGs 9:30am, Main meeting 11:00am. Mack Open School, 920 Miller Road, Ann Arbor, MI 48103. <<http://www.mactechnics.org>>. Info: Cassie at <cassiemic@yahoo.com> or 313-971-8743.

MCUG (Michigan Computer Users Group)

Aug. 21–Thursday, 7pm (3rd Thursday); 35271 Rockingham Dr, Sterling Hts., MI 48310-4917; Info: Jerry Zinger, Pres., <kahuna15@comcast.net> 810-792-3394.

Michigan Apple Computer User Group

Aug. 14–(2nd Thur), MAC SIG; Aug. 14–(2nd Thur), Golden Masters SIG; Aug. 21–(3rd Thur), Green Apple SIG; Eagles Hall in Clawson, 174 Bowers St (one block North of 14-Mile and one block East of Main). Carl Pendracki 248-647-8871 or <carlpen@aol.com>. Web: <<http://www.themichiganapple.com>>.

Oak Park Computer Club

Meets every Friday, 10:15am at Oak Park Recreation Bldg., Oak Park Blvd. west of Coolidge.

SHCC (Sterling Heights Computer Club)

Sept. 2–Tuesday, 7:30pm (1st Tuesday, No Meeting August); Carpathia Club, 38000 Utica Rd, Sterling Hts, Pres. Don VanSyckel at <Don@VanSyckel.net>, 586-731-9232; Web: <<http://www.SterlingHeightsComputerClub.org>>.

SVCA (Saginaw Valley Computer Assoc.)

Sept. 11–Thursday, 6:30-9:00pm (No meeting in August); Zauel Library, Shattuck & Center Rds., Saginaw. Web: <<http://www.svca.org>>.

Wayne State U. Mac User Group

Aug. 9–Saturday 10:00am-Noon (2nd Saturday); at Mich.com, 21042 Laurelwood, Farmington. Info: Lorn/JoAnn Olsen 248/478-4300 or Denny McLampy 248-477-0190.

**SPECIAL
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COMPUTER RESOURCE PEOPLE

This is a list of members willing to be resources for other members to call when they have hardware or software questions.

Are you willing to help members learn?

Which software programs are you familiar enough with?

It is not necessary to be an expert, but just have some familiarity with the program and be willing to help someone starting to learn it. Please give this some thought and volunteer at the next group meeting.

Almost Anything: Vander-Schrier

AutoCAD: Comptois, Gay

Genealogy: Cook

IBM PC Hardware Issues: Clyne, Gay, Yuhasz

Operating Systems: Callow, Clyne, Yuhasz

MAC Hardware and OS Issues: Yuhasz

MS Office for Windows: Callow

MS Word: Clyne

Networking: Callow

Novell Netware: Yuhasz

Quicken: Clyne, Gay

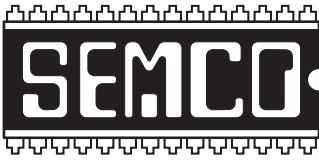
Geocaching: Cook

- Clyne, Bob—810-387-3101, 9am-10pm clyne@lodden.com
- Callow, Tom—248-642-1920 9am-5pm tcallow@vmdllaw.com
- Comptois, Jerry—248-651-2504, anytime jerrycandotoo@juno.com
- Cook, Stephen—313-272-7594, eves scook48227@ameritech.net
- Gay, Roger—248-641-7799, 9am-10pm rgay@voyager.net
- Vander-Schrier, Jack—586-739-7720, 12-8pm jvanders@myself.com
- Yuhasz, Steve Help@yuhasz.org

**JULY
REFRESHMENT
DONORS**

Warner Mach, Coordinator
Betty MacKenzie
Carol Sanzi
Roland Maki

Your **SEMCO** membership card is good for a **\$1 discount** (not valid with any other offer) on admission to **A1-Super Computer Sales** shows. See www.a1-supercomputersales.com or www.a1scs.com for show schedule.



SOUTHEASTERN MICHIGAN
COMPUTER ORGANIZATION, INC.

SEMCO CALENDAR—August/September

SCIENCE & ENGINEERING BUILDING, OAKLAND UNIVERSITY,
ROCHESTER, MICHIGAN

August 10—SUNDAY (Meet 2nd Sunday)

SEMCO Board Meeting at 12:00 noon, **Room 164**. For Officers and SIG Chairpersons. Other members are invited to attend.

SEMCO General Meeting at 1:30 pm, **Room 164**.

Special Interest Groups (SIGs)

SIG-IBM 1:45 pm, **Room 164**. **Program: Free (Or Almost Free) Utilities:** SIG-IBM Co-Chairman Tom Callow will demonstrate utilities to tweak your computer, or just make life easier on your computer.

SOCIAL PERIOD 3:15 pm, **Room 172**. Refreshments! (Reminder: We must maintain a neat environment.)

NOVICE-IBM GROUP 3:45 pm, **Room 168**. **Program: Q&A, Audience-Directed Discussion.**

SIG-IBM Intermediate 3:45 pm, **Room 164**. **Program: Basic Video Editing And Recording:** Long time SEMCO member and former SEMCO President Bob Clyne will demonstrate how to do basic editing of video and how to record such video to DVD.

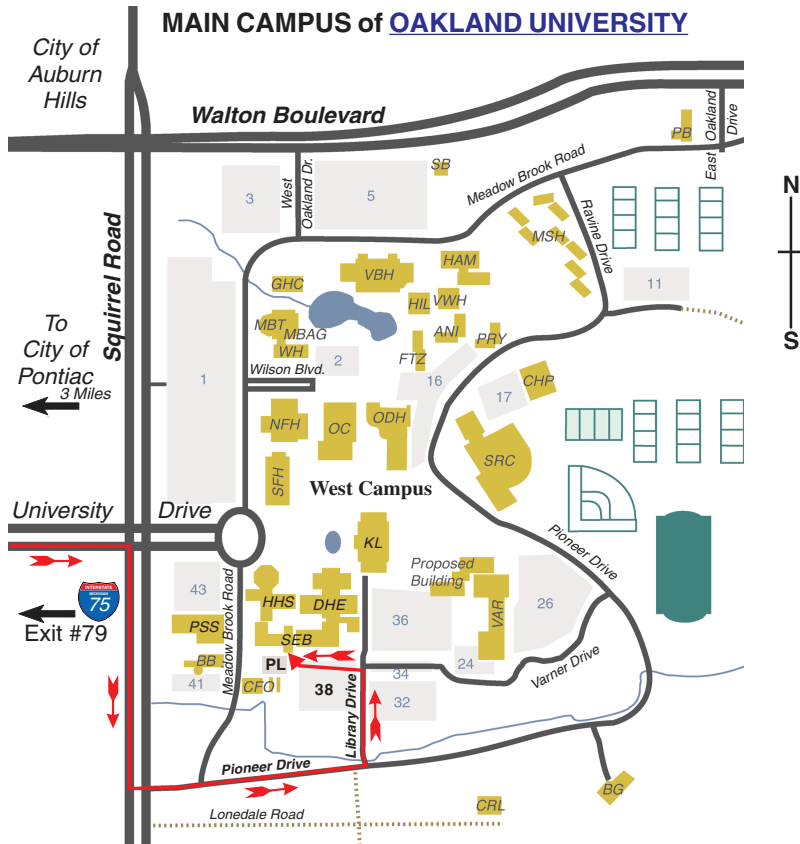
Oct. 6—MONDAY, 6:45 pm (No meeting in Sept.), SIG-ADVANCED Oak Park Public Library, 14200 Oak Park Blvd., Oak Park, MI. Phone: (248) 691-7480. Directions: Oak Park Blvd. is 9 1/2 mile Road, located west of Coolidge. Best route from freeway is to take I-696 to the Coolidge exit. Head south on Coolidge for 1/2 mile to Oak Park Blvd., and turn right. Info: Franz Breidenich 248-398-3359. **TOPIC: Wide-ranging discussion of computers & computing.**

Sept. 14—SUNDAY (Meet 2nd Sunday). **SEMCO**, 1:30 pm. **Topics: To be announced.**

<http://www.semco.org>

PUBLIC INVITED

(Please copy this and the next page to post on your bulletin board)



MAP LEGEND

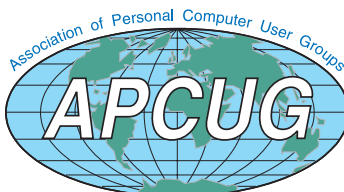
- SEB** Science and Engineering Building
- DHE** Dodge Hall of Engineering
- KL** Kresge Library

Note: SEMCO meetings are in the Science (west) wing of the Science and Engineering Building.

DIRECTIONS

Driving north on I-75 (from Detroit and suburbs), take Exit 79 (University Drive), stay to the right on University Drive to campus entrance. Turn right (south) on Squirrel Road (at traffic light which is just outside campus); turn left on Pioneer Drive (next street to left). Turn left off Pioneer Drive onto Library Drive (second left) toward Kresge Library. Turn left before you get to the buildings, into parking lot 38 on the left. Proceed to the far end of the parking lot and up to the next lot. After parking, enter the first set of glass doors (at the SE corner of the building).

Member of



The meetings at Oakland University are sponsored by the University's Academic Computer Services (ACS). SEMCO thanks Oakland University and ACS for their assistance.

**SouthEastern Michigan
Computer Organization, Inc.
P.O. Box 707
Bloomfield Hills, MI 48303-0707**

**SEMCO (future meetings)
August 10
September 14**

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