



# The Cursor



Monthly Newsletter of the  
Washington Area Computer User Group

Meeting Location:  
Micro Center  
Pan Am Shopping Center



Next Meeting:  
December 10, 2005



**Happy  
Holidays  
from the WAC  
Board of  
Directors**

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## Presidential Bits

### December 2005 Meeting

By Paul Howard

In November, Chuck Roberts lowed us with a great presentation on the basics of computer networking, giving us a history starting with sneakernet, and an understanding of how computers are connected together. Chuck and Geof Goodrum will follow this up at our January 21<sup>st</sup> meeting, when we'll build a peer-to-peer network, incorporating both wired and wireless technology, similar to what you'd put together to serve your family at home.

Following the networking overview, we presented the first part of Intel's "Build Your Own Computer" seminar, which discussed component selection and other considerations in putting together an up-to-date system from parts. No door prize drawing was held at this meeting – Intel provided each attendee with a sexy blue carabiner / flashlight – a very useful addition to any key chain.

WACUG is very grateful to General Manager Richard Wedge and the staff of MicroCenter for providing us a great place to meet in October and November. Most of our meet-

ing dates for 2006 are posted at the "meetings" page of our web site: <http://www.wacug.org/meetings.html> Take special note of the February and March dates, which fall on the second and fourth Saturday, respectively.

### Build Your Own Computer, Part II

We'll be back at the Fairfax County Government Center for our December 10<sup>th</sup> meeting. I'll again narrate an Intel presentation to guide users through the creation of their own system. This is the Workshop - where we'll actually help you build your own new PC. We'll walk step by step with you through the process of building a PC. In addition to the Power Point presentation, we're planning to have live video available, so attendees can see on a TV monitor what's being done as we assemble the system, from a close-up perspective.

### Cursor Changes

Over the last several years, our membership has declined from around seventy to about fifty members. Producing and mailing a monthly newsletter in the tabloid format has proven too costly at that

See *Presidential Bits* on page 5



## Lu Spriggs Web Sites for November 2005

<http://wacug.org/> is the URL for the Washington Area Computer User Group. Visit it for past versions of Sprigg's Web Sites w/ hyperlinks.

This is an abridged "Holiday Version" of Websites.

1. <http://www.jibjab.com/>  
– Political Cartoons, Anyone!
2. <http://www.LeapFrogGroup.org/> – Compare Hospitals, Doctors and Surgery success ratings.
3. <http://hoaxbusters.ciac.org/>  
– Department of Energy(?) listing of internet related scams. See if it's bona fide or bunk.
4. <http://www.loc.gov/exhibits/treasures/homefront-home.html/> – Here the Library of Congress honors our veterans and preserves their memories.
5. <http://www.fullofink.com/>  
– Try this site for low prices on ink jet printer cartridges. One day shipping by free first class mail, no state tax (Exc. MD).
6. <http://www.virtualearth.com/>  
– MSN's answer to Google Maps geographic scan of the earth.
7. <http://www.baidu.com/> – Chi-

nese search engine, very highly censored!

8. <http://www.overstock.com/> – Purchase Paramount Classic TV favorites here, and other valuable items.
9. <http://www.safercar.gov/>  
– Here you will find the ratings of all autos tested by the National Highway Traffic Safety Administration. See if your car has a four (or five!) star safety rating.



### 2006 Dues Now Payable

Don't miss a single issue of *The Cursor*

Please include a

tax-deductible donation to WACUG with

your dues payment

*Thank you!*

### NCTCUG

Visit our "sister" user group. The National Capital Technology and Computer User's Group meets the first and fourth Wednesday of the month. They meet in Carlin Hall in Arlington at 5711 South 4<sup>th</sup> Street. Visit their web site for more information, a map and directions:

<http://www.nctcug.org/>

Meetings start at 7:00 PM



## GNU/Linux SIG

By Geof Goodrum

### Supercomputing Conference

Linux dominates the 26<sup>th</sup> list of the top 500 supercomputer sites in the world (<http://www.top500.org/>), which was released on November 14 at the Supercomputing Conference (SC05, <http://www.sc05.org/>) in Seattle, Washington. 390 of the listed sites run Linux, including the top two and seven of the top ten.

Microsoft Chairman and Chief Software Architect Bill Gates showed remarkable prescience by stating, „What we see as a key trend here is that we will have supercomputers of all sizes, including ones that will cost less than \$10,000 and be able to sit at your desk or in a department.“ In fact, Orion Multisystems and Penguin Computing already offer desktide computing clusters running Linux in an office environment. Microsoft is looking for a piece of the action with their Windows Compute Cluster 2003 operating system, which is due out in 2006.

The AMD Opteron processors were featured in many of the new systems announced by the supercomputer cluster vendors, but Intel processors still power 333 of the systems in the Top500 list. Mercury Computer Systems announced their Tu-

rismo product, which uses the new Sony-Toshiba-IBM Cell processors (see *The Cursor*, August 20, 2005, p.3) and runs Yellow Dog Linux. Turismo can perform 800 billion floating point operations per second (GigaFLOPS) in a system requiring only 600 cubic inches (smaller than a cube 8.5 inches per side). The Mercury Computer Systems press release on the Turismo can be found at <http://www.mc.com/mediacenter/pr/>.

The Register has several articles covering SC05 at <http://www.theregister.com/enterprise/servers/>.

### Patent Protection for Linux

The issuance of patents for broadly-defined concepts continues to be a major obstacle to innovation by software developers. For example, Microsoft has a patent on the meaning of mouse clicks (single-click does one thing, double-click does another). Many of these patents can be challenged on the basis of “prior art” (i.e. proof that the concept was in use by others before the patent was issued) and should never have been granted in the first place. Big companies and grass roots organizations alike have pushed for reform of the patent system. Until then, companies will continue to protect themselves against patent infringement lawsuits by filing questionable patents. More information on the abuse of patents in the US can be found at the Electronic Frontier Foundation’s Patent Busting Project web site at <http://www.eff.org/patent/>.

The Open Source Development Labs (OSDL), a non-profit organization supported by companies such as CA, IBM, Red Hat, Intel, Novell and Sun Microsystems, announced on November 15 the availability of an Online Patent Commons

Reference Library, which provides information on patents that companies have unencumbered for use in Open Source projects. According to the OSDL press release ([http://www.osdl.org/newsroom/press\\_releases/2005/2005\\_11\\_15\\_beaverton.html](http://www.osdl.org/newsroom/press_releases/2005/2005_11_15_beaverton.html)),

“The site, <http://www.patentcommons.org/>, hosts searchable databases containing more than 500 patents pledged to date and more than a dozen technical standards supported by patent pledges and covenants. The library is freely available to developers, users and vendors, where they can quickly view information about patents and technology pledges benefiting open source software and standards.”

Others have pointed out that companies supporting this project were unlikely to challenge use of these patents in Open Source projects. The real threat is from other companies that hold broadly-defined patents that could be used against Open Source projects. While there is sufficient corporate backing for Linux to challenge such patents, the real remedy must be reform of the US patent system.

The software patent problem is not limited to the United States. The European Union is also considering software patents similar to those in the US. The non-profit Foundation for a Free Information Infrastructure (<http://www.ffii.org/>) provides information and representation on public policy issues affecting intellectual property in Europe, including software patents.

### Browser Developers Convene to Improve Security

Developers of Microsoft Internet

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and Konqueror web browsers met in Toronto on November 17 to discuss security improvements to combat phishing attempts, remove obsolete encryption ciphers and address inconsistent handling of web site security certificates.

The SSL 2.0 (SSLv2) encryption cipher found in current browsers has weakened with age and has been supplanted by SSL 3.0 and TLS 1.0. SSLv2 will be disabled in Internet Explorer 7. Opera removed SSLv2 support already, and SSLv2 has been removed from the KDE 4 source code.

TIP: SSL 2.0 should be disabled in current browsers for added security (e.g., in Firefox, uncheck the "Use SSL 2.0" checkbox in Edit | Preferences | Advanced | Security).

There were also productive discussions on displaying the quality and status of web security certificates. Browsers typically show a padlock or similar icon when connected to a secure site, but don't differentiate on the quality of the security certificate. Fake web sites used for stealing account and identity information can use self-signed certificates to encrypt the session and make the "padlock" appear, but still be bogus. The developers plan to make it more obvious when connecting to high-profile web sites such as online banks and auction sites by clearly indicating through color in the address location bar and unique icons when a site has been certified by an established third-party certificate service such as Verisign or Equifax.

TIP: you can verify the site's certification authority on current browsers by double-clicking on the padlock icon.

The developers also discussed sharing access to the anti-phishing database that Microsoft is implementing in their anti-phishing plugin. Microsoft invited community participation in industry working groups, but recommended each develop their own technology.

TIP: Netcraft has an anti-phishing toolbar for Internet Explorer and Firefox at <http://toolbar.netcraft.com/>.

KDE developer and meeting host George Staikos posted a detailed report about the meeting on the KDE news web site at <http://dot.kde.org/1132619164>.



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## NOTICE OF ANNUAL MEETING OF THE WASHINGTON AREA COMPUTER USER GROUP

Notice is hereby given that the Annual Meeting of the Washington Area Computer User Group (WACUG) general membership will be held at 1:00 PM on Saturday, January 21, 2006 at the Fairfax County Government Center, 12000 Government Center Parkway, Fairfax, Virginia 22035, for the purpose of electing by ballot the President, Vice President, Secretary and Treasurer to the WACUG Board of Directors and other such business of the Corporation as may properly come before them.

All members are invited to review the WACUG Articles and Bylaws before the Annual Meeting. Digital copies are available online at URL <http://www.wacug.org/articles.txt> and <http://www.wacug.org/bylaws.txt>. Hardcopy will be available for review at the January meeting.

## NOMINATING COMMITTEE REPORT

Submitted by Geof Goodrum,  
Nominating Committee Chair

In accordance with Article VI, Section 1.a. of the WACUG Bylaws, the Nominating Committee presents the names of individuals who have stated their intention to run for election to the 2006 WACUG Board of Directors in the designated roles.

### Candidates for President:

Paul Howard

### Candidates for Vice President:

James Brueggeman

### Candidates for Secretary:

Lance (Jorn) Dakin

### Candidates for Treasurer:

Robert Rott

The Nominating Committee will open the floor for additional nominations from the membership at the Annual Meeting. If only four nominees are received, the membership may sponsor a motion to elect the nominees to the Board by acclamation. Otherwise, ballots will be distributed to the membership to elect four members to the Board of Directors.

The new Board may elect up to ten additional Board members at the January Board Meeting. If you are interested in serving on the Board but do not wish to enter the election, notify one of the elected Officers after the Annual Meeting.

If you have not joined WACUG or renewed your WACUG membership for 2006, you are not eligible to vote at the 2006 Annual Meeting or run for the Board. However, memberships will be available between 12:30 PM and 1:00 PM on meeting day.



level of membership, and postage rates will be increasing, starting January 8th. As a result, we'll revert to the duplex, stapled and folded format of prior years' Cursors. *Feel free to request your copy of The Cursor to be delivered by email with active hyperlinks!* - Ed. Your thoughts are welcome - talk with our editor, Chuck Roberts, or any of the board members. And don't be bashful - ask your friends, neighbors and co-workers to join WACUG today. You know how valuable membership is - share it !!

### What's Your Time Worth?

Have you found an article in the Cursor that's saved you time and money? Has a meeting Q&A session, or PC Clinic solved a problem for you? Have the techniques demonstrated in one of our programs made your use of the computer more efficient and fun? So, what's your hourly rate? Return an hour's worth to WAC as a contribution - it's tax deductible !!



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## Tech News

By Sue Crane, Vice President & Editor, Big Bear Computer Club  
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### SP3 for Win XP

Microsoft has confirmed that there will be a 3rd service pack for Windows XP. They declined to release further details, but said that Windows XP SP 3 will be available after Windows Vista ships, scheduled for the end of 2006. Microsoft released the most recent Windows XP service pack, SP2, in August 2004. The service pack was one of

the most significant updates to the Windows OS that Microsoft ever produced, and it included features to make Windows more secure.

### Microsoft Employee warns against downloading from unofficial site

A Microsoft employee has warned against downloading an unauthorized version of Windows XP Service Pack 3 (SP3) that has surfaced on Hotfix.net, a popular Web site that provides software patches. The employee told users that downloading an unofficial version of Windows XP SP3 provided on The Hotfix.net would likely harm their computer and put them "out of support" from Microsoft because it is not an official Microsoft package. Each of these hotfixes can be obtained for free from Microsoft by calling their support lines, the employee said. SP3 will be released after Windows Vista ships next year.

### Robotic Cars Make History

The Stanford Racing Team's robotic car, "Stanley," drove autonomously across 131.6 miles in the Mojave Desert in six hours and 53 minutes, finishing about 11 minutes faster than Carnegie Mellon's "Sandstorm." All of the teams made history during the weekend. They were the first autonomous vehicles to travel far within a specific time frame, as well as the first to finish the 2-year-old race (last year no one finished at all). A DARPA spokesman said this likely means the end of the Grand Challenge. DARPA is now hoping to see the technology take-off.

### Real ID Act

The Real ID Act lays out minimum national standards for licenses, which will have to include a digital

photo, anti-counterfeiting features and machine-readable technology. States will have to verify all documents presented to support license applications, such as birth certificates, Social Security cards and utility bills, with the issuing agency, and will be required to link their license databases so they can all be accessed as a single network. States will also be required to verify that a person applying for a license is in the country legally. Another Real ID Act requirement is that a person's license and Social Security card must bear the same name--not a nickname or shortened version.

### HP Recalls Laptop Batteries

HP has recalled around 135,000 lithium ion rechargeable battery packs worldwide after several melted or charred the plastic cases of laptops. The battery is used with the HP Pavilion, Compaq Presario, HP Compaq and Compaq Evo laptops, company spokesperson, Mike Hockey, said. The company received 16 reports of batteries overheating, with four cases of damage to the laptops. No injuries have been reported. Consumers can verify if they have the faulty battery pack by going to [www.hp.com/support/batteryreplacement](http://www.hp.com/support/batteryreplacement).

### New Intel Technology Could Shorten PC Boot Up Time

With Robson, a PC pulls data and applications off an add-in flash memory card and Intel software, rather than the PC's hard drive. Potentially, notebook users could experience a longer battery life because the hard drive wouldn't have to work as hard. Intel did not provide exact boot-up time comparisons, but a representative said Rob-

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son will cut the amount of time it takes from when you hit the “on” button to when the PC can operate, the time it takes to go from a sleep state to an active state, and the time it takes to launch an application.

### Some Camera Models Have Defective Sensors

Several major camera makers have announced plans to replace faulty CCD sensors in digital cameras and camcorders. CCD sensors capture images. As a result of the defect, images are distorted or nonexistent. The CCDs were manufactured between October 2002 and March 2004. Konica Minolta, Canon, Fujifilm and Nikon have sold models that are affected by the problem. More information can be found on their respective sites: <http://www.fujifilm.com/JSP/fuji/epartners/ServiceSupportHome.jsp> ;[http://www.nikonusa.com/email\\_images/nikonusa/service\\_advisory](http://www.nikonusa.com/email_images/nikonusa/service_advisory)

### Chip-enabled Soccer Ball

Engineers working on a chip-enabled soccer ball are optimistic about the technology being used at the FIFA (Federation Internationale de Football Association) World Cup soccer tournament in Germany next year. FIFA has shown interest in the technology--largely to help referees make crucial goal-line calls--but has yet to make a final decision. The radio-based tracking system could also be used to determine whether a ball has gone out of bounds, to compile statistics about individual players, and more

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organization of which this group is a member, brings this article to you.



## Tips for Locating Misplaced Files

By Dave Gerber, APCUG Advisor, Region 5; Dave's Bits & Bytes, A Periodic Newsletter for the Members of the Sarasota PC User Group and the World!!  
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[www.spcug.org/](http://www.spcug.org/) <http://davebytes.com/>

**L**osing files on your PC is a lot like misplacing your car keys in a cluttered apartment. You know the things you're looking for are close by, but actually finding and using them can be a challenge.

Unlike your apartment, though, Windows has a helpful feature that can locate wayward items and save you a good deal of frustration. In Windows 95/98 (Win9x), this feature is called Find. In Windows XP and Windows Me, it's called Search. There are also third-party programs that can ensure that you never have to endure the loss of an important file again.

In this article, we'll show you one of the more popular ways to find lost files and some techniques to keep you from losing files in the future. We'll start by covering the Find feature in Win9x. The WinMe and WinXP version of this feature is significantly different and warrants a separate explanation. Note, however, that many of the tips included in the Win9x section apply to later versions, so don't skip ahead.

### Find It In Windows 95 & Windows 98

There are two fast ways to access the

Find feature in Win9x. One method is to click Start, point to Find, and click Files or Folders. Shortcut keys also work for this feature; press Windows-F to display the search program instantly. If you're certain a file is in a specific folder, don't use the Find feature from the Start menu; a faster way is to press the F3 key in Win9x (or CTRL-F in WinMe) when you're already at the right folder window or have the folder displayed in Windows Explorer. This will display the search window already set to search the current folder.

Whatever technique you use to launch the Find utility, you end up with a dialog box named Find All Files. It has five menu options: File, Edit, View, Options, and Help. The Name & Location tab is the most commonly used area of the Find command, as it includes the Named and Look In text boxes. Win98 also has a Containing Text text box listed here. (In Win95 this option is on the Advanced tab.) If you know the name of the file you want to locate, just type it in the Named text box, make sure the Look In path is directed at the correct drive location, and click Find Now. You'll know the search has started because the magnifying glass icon begins to move in circles. When the search is complete, matches appear in the results window. This window shows all relevant information about the file, such as file name, type, size, location, and date modified. Remember that you don't have to let a search complete its examination; click the Stop button to bring things to an immediate halt. This is especially useful when you accidentally start a search over a gargantuan hard drive

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that takes several minutes to inspect. There are many variables that can help you narrow your searches and save time. If you're fairly certain of the folder in which a file is hiding, click Browse on the Name & Location tab and specify the correct folder. On the other hand, you might not have a clue as to which folder to look in; in that case click the Include Subfolders checkbox to investigate a folder hierarchy from top to bottom. In all Windows versions, there are some other options that let you control the search. The Date and Advanced tabs in Win9x let you find files by type and size. The Containing Text text box lets you constrain results to those with specific phrases in them. In Win9x an Include Subfolders option lets you widen your search. (In WinMe click Advanced Options, which lets you Search Subfolders or look for file names using the Case Sensitive option.)

### Search Windows Me & Windows XP

WinMe and WinXP have their own version of the Find command, called Search. To get started click Start, point to Search and click For Files Or Folders, or press Windows-F. You will see a Search Results dialog box that's laid out like a Web browser, complete with Back and Forward buttons.

In WinMe type the name of the file you need in the Search For Files or Folders Named text box. The Containing Text option is listed just below, as are the various search options, such as Date, Type, Size, and Advanced Options, all of which work similarly to Win9x.

In WinXP you will need to select the type of file you are looking for

before you can begin a search. We recommend selecting the All Files And Folders option because it will search your entire hard drive for the file. If that takes too long, the other options, such as Pictures, Music, or Video, will narrow the search parameters and likely make the search more efficient.

Once you've outlined the parameters of your search, click Search Now or Search. After Windows completes a search, you can press F3 or CTRL-F to alternately shrink and enlarge the Search Results window, providing more (or less) information about selected files on the left side of the screen.

Both operating systems have useful extras on the left side the Search Results window, including image file preview. In the past when you wanted to know what was in a mysterious graphics file (usually with a file name extension such as .JPG, .BMP, or .TIF), you had to open the file with a separate program, which takes time. With WinXP and WinMe, you can use the Preview function instead. Just click the file, and a tiny version of the image appears in the Search Results area. To see thumbnails in WinXP, from the View menu, click Thumbnails to make image thumbnails appear.

If it takes too much time to complete searches, you may want to streamline the search process in WinXP by using the Indexing Service feature. With this feature, your computer will maintain an up-to-date list of the files on your hard drive, which makes subsequent filename searches much faster.

To use the Indexing Service, in the Search Results window, click Change Preferences in the left pane. Click With Indexing Service and then click the Yes, Enable Indexing

Service radio button. Click OK, and your PC will run the service when the computer is sitting idle.

Find files with dates. If you don't find your files with an initial search or WinXP index searches, you might want to search for files by date. In Win9x from the Start menu, point to Find and then click Files Or Folders. In the Named Or text box, type \*.xls (or \*.doc, or whatever file type you most often use). Click the Date Or Date Modified tab and click Find All Files Created Or Modified. Click the During The Previous option and then adjust the number of days you'd like this search to work for. (A week is probably a good starting point.)

You can do this in WinMe by clicking the Date checkbox. Select Files Modified, Files Created, or Files Last Accessed from the drop-down menu. Then click the In The Last option, followed by the number of days you want the search to cover.

In WinXP after you click All Files And Folders, you can enter part of the file name and then click When Was It Modified? to narrow your search to a range of dates. You can also use What Size Is It? and More Advanced Options to make searches more specific; you can even include hidden files in the search if you prefer. After you set the parameters in your OS, run the search by clicking Find Now, Search Now, or Search.

Windows Me's Search feature works like the Find option in previous Windows versions but has some extra power under the hood.

**Saving a search.** Once your PC completes its file hunt, you may want to save your search settings

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to reduce the amount of data entry you have to complete for your next complex search. After a search ends, from the File menu, click Save Search. This saves a shortcut on the Windows Desktop or a folder of your choice with a name that refers to the search. When you want to do a speedy search for commonly accessed documents, just double-click the shortcut and the search parameters will load automatically.

Win9x will also let you keep the results of searches, plus the parameters that created those results. From the Options menu, click Save Results. To create a shortcut to these results, click Save Search from the File menu.

More search options. More archaic computer skills also sometimes come in handy for searches, the best example of which is the use of older DOS commands to aid your search. The easiest to use is probably the asterisk symbol. It acts like a wildcard, standing in for at least one character in the name of the file or folder you want. For instance, if you know you want to find a file that ends in .INF but aren't sure what the first part of the file name is, you'd type \*.INF, which instructs the search utility to display every file ending in .INF.

The question mark is also useful; unlike the asterisk, it replaces only one character in a name. For example, entering Sysfile?.DOC would find every file with one character following the Sysfile name that ends with .DOC. The search variable can also be used together in flexible combinations. For example, enter \*dos?.\* to locate file names with any filename extension and that start with any number of characters, following by "dos," and then any single char-

acter.

Searching by file type is another useful parameter. Select this option, and you'll see dozens of file types from which to choose. The best thing about this option is that file types aren't displayed with cryptic extensions. Instead, there's a short description of the type (an AOL email, for instance).

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## Locked Out of Your Computer?

Vinny LaBash, Sarasota PC Users  
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Some time ago one of my students came to me with what appeared to be an insurmountable problem. She had lent her laptop to a relative who changed the password allowing her access to the hard drive. A dispute developed between the two, and the relative refused to disclose the new password. Upon boot-up, a message appeared that the hard drive was now password protected. She asked me, "How can I break this password and access my computer?"

I had mixed feelings. Most people ask me how to protect their data and equipment, and prevent unauthorized access. I was now being asked to break into a machine. Even though the woman was the legiti-

mate owner of the laptop and the data recorded on it, it felt strange to be on the other side of the fence. After dusting off my notes, we tackled the problem.

Before revealing what actually worked, let's examine what you can do if you are ever locked out of your own computer.

We started with the presumption that the password was embedded in the BIOS, which stands for Basic Input/Output System. Your BIOS is a set of instructions that tells the computer who it is and what it has. Imagine that every morning you woke up with total amnesia and someone had to tell you not only who you were but how to walk, talk, read, and how to use your brain. The BIOS is like that.

To make things more obtuse, the settings in the BIOS are dynamic. They need some kind of electric power to work. If you take out the battery on your motherboard or let it drain, the BIOS settings are lost. What saves you is that the BIOS resides in ROM (Read Only Memory), which is not battery dependent.

Try resetting the BIOS to its defaults. This can be done by removing the CMOS battery after turning the computer off. The CMOS battery is about the size of a five cent piece, and you'll find it on the motherboard. Some motherboards will let you reset the BIOS by using jumpers. Your owner's manual may be helpful. If you don't have an owner's manual, go to the manufacturer's web site, and look for an online version. Some sites list the default BIOS password. Don't hesitate to call the manufacturer and ask for help. Sometimes the

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company will have a master password, but you will need to provide the serial number of the machine. If you're dealing with a laptop, the manufacturer may have more stringent requirements for proof of ownership since theft is a serious issue with these machines.

Many people use dumb passwords like their pet's name, child's birthday, anniversary or birth dates, employer's name, brand of car, etc. Generic passwords like these examples can be easily defeated. Don't forget to try "password". I never cease to be amazed at how often this works. The other two most common passwords are God and love.

BIOS manufacturers have their own list of passwords. This website may be helpful. <http://www.elfqrin.com/docs/biospw.html>.

There are cracking programs that will reveal passwords in many cases. If you decide to go this route, make sure you check for viruses. You can find free programs at the following sites:

<http://www.cgsecurity.org/>  
<http://www.11a.nu/>  
<http://natan.zejn.si/rempass.html>

Before accusing me of giving lessons on how to hijack computers, keep in mind that the bad guys already know these tricks and a lot more. There is nothing immoral or illegal about trying to retrieve your own data.

More drastic steps would be to take your machine to a computer repair shop and have the BIOS replaced. You could also have the hard drive replaced, but this would mean losing all information on the disk, and you would need to reinstall your op-

erating system and applications.

What finally worked? The woman baked her cousin's favorite pie and sent her daughter to deliver it as peace offering. The password was shortly forthcoming. Go figure.

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## USB Flash Drives

By Brian K. Lewis, Ph.D.  
Sarasota PCUG, Florida

You may already be familiar with the small USB flash drives that plug into a USB port. However, you may know them by another name. Flash drives, JumpDrives™, Pocket drives™, Pen drives™, and Thumb drives™ are all names for the same thing. They are a solid-state medium for storing data, music, photos, and/or applications. Now there is also a new version, the U3 smart-computing platform, which allows the user to carry applications and data from one computer to another and to launch the applications on any USB equipped computer. Many flash drive manufacturers are already jumping on this bandwagon and producing U3 based drives. Since flash drives are growing in capacity, functions and speed, they will probably be important in your computing future. So let's take a closer look at them.

A flash drive consists of a solid-state circuit board inside a plastic casing. Most of these casings are strong enough to stand some substantial abuse. My one gigabyte (GB) drive has managed to fall on the floor several times and it "still keeps on ticking", as the saying goes. It tolerates this kind of abuse be-

cause it has no moving parts. Imagine if this had been a magnetic hard drive with several spinning platters and a movable read/write head. Just one fall could knock it completely out of alignment and cause it to fail. So that is one advantage of the flash drive. Another is its portability. Flash drives are small and very light weight. Mine measures 2 ¾ inches by ¾ inch x ½ inch. They can easily be carried in a pocket or strung on a lanyard or a key chain. The USB A type connector on these drives is frequently covered by a plastic cap that protects the connector.

Flash drives are powered directly from the USB port on the computer. When they are disconnected, the information stored in them is retained, not lost. The silicon chips used in flash drives are referred to as a form of nonvolatile memory. The RAM memory in your computer requires constant electrical input to retain information. The same is true of the BIOS chip. But flash drives retain information for greatly extended periods of time without any electrical input. Some estimates indicate data can be retained for periods of up to ten years, possibly longer.

Flash drives also have low power requirements, needing only the five volts and 100-500 milli-Amps provided by the USB port. However, their power demands are such that they generally will not run when plugged into a non-powered hub. You are always better off to directly connect the drive to the computer's USB port.

Flash memory was originally developed in 1988 and has seen considerable use in storage for digital cameras. (For the technically minded, flash memory is based on NAND gates where the transistors have two inputs and one output.) Some smart phones and PDA's are now using nonvolatile flash memory to retain information when the device is turned off. This reduces the drain on the device's battery. Flash drives are believed to work for up to 10,000 write/erase operations. However, some sources indicate that flash drives can

survive for up to ten million operational or write/erase cycles. Even so, all this indicates that flash drives have a finite life span. To me, this life span seems to exceed that of a standard hard drive which is supposed to operate for up to half a million hours. In practice we know that hard drives generally fail much sooner than that. So a flash drive having a finite life span is really no different than a hard drive.

Flash drives now on the market have capacities of 3 – 4 gigabytes. Samsung has also announced a flash chip capable of storing 16 gigabits. (Note that this is bits, not bytes.) It would take 16 of these chips to make a 32 gigabyte drive. As an indication of what is coming, BitMicro has announced a 155 gigabyte flash drive!

Obviously, the flash drive has many advantages over other removable media such as floppy disks, CD-ROMs, ZIP disks and others. Unlike Zip disks, floppies and CDs, flash memory lacks moving parts, making it ideal as a simple solution, requiring only a port to interact with a system. It doesn't require any special hardware, it is smaller, more portable and it is not as likely to develop storage errors. Flash storage devices, compared to other storage media, are fast, high capacity, durable, and compact. Some computers can already boot from a flash drive that makes them an ideal replacement for bootable floppies or CDs.

Floppy drives are not even included in many new computers. As flash drives already exceed the capacity of CD's; they are becoming a replacement for them. Certainly they are more portable than a CD or a DVD and only require a USB port to run on any computer running Windows XP. They can be run on Windows 98 providing the manufacturer's specific driver is installed. Additionally, flash drives are not subject to scratches, dust, coffee

or other liquid spills. In fact some have survived being passed through a washing machine! However, this is not recommended treatment for them. The popularity of flash storage devices may be attributed to their compact size, operating system compatibility, and their use of the standard USB interface.

With all of their capabilities, it is possible to foresee some applications for flash drives that may show up in a reasonable period of time. For example, if the read/write speeds can be increased to a level comparable to that of current RAM memory, flash memory could then replace RAM chips. If the cost of flash memory is also reduced then it could be used to replace the current computer hard drives. Think about what this would do to the size of computers and their power requirements. Think about replacing that 10,000 rpm hard drive and it's casing with a flash drive that can be connected to any computer's USB port. Certainly if we can produce 155 GB drives now, what will the capacity be in a few more years?

Earlier, I mentioned the new U3 (smart drive) specification for flash drives. This allows applications to be developed that can be stored and run from a flash drive. Software is already available for such drives. One such example is Mozilla's Firefox browser and their Thunderbird e-mail software. There are other applications that synchronize office files, folders and Outlook e-mail between a computer and a U3 flash drive. There is a version of Pass2Go that securely stores passwords, banking and credit card information on these USB smart drives. Also announced are photo management software and instant-messaging programs. Skype, a VoIP provider has announced a U3 version of their software that would permit voice calls over any computer with a U3 flash drive. The U3 flash drives and the associated software will run only on computers using

Windows XP and Windows 2000. A Linux version is expected to be announced shortly.

The U3 smart drive contains software that functions as a "launchpad" to provide a menu of applications on the flash drive. It also has options for drive management and a link that leads users to a web site where they can obtain additional U3-compliant software. When the drive is removed from the USB port, the system software automatically shuts down any applications running on the USB drive and cleans out data fragments so no personal information is left behind on the computer. This U3 system software uses about 6 MB of the drive's capacity and loads within 30 seconds after the drive is plugged into the USB port. One result of this capability is that the U3 compatible flash drive can become your "personal" computer. Certainly it is even more portable than any laptop computer.

The day may come when your computer will be not much more than a motherboard, sound cards, wireless ethernet and USB ports. This reduces the moving parts to not more than a cooling fan, if that. All of the software and data will be on your flash drive. The face of computing is continuing to change. Fascinating isn't it?

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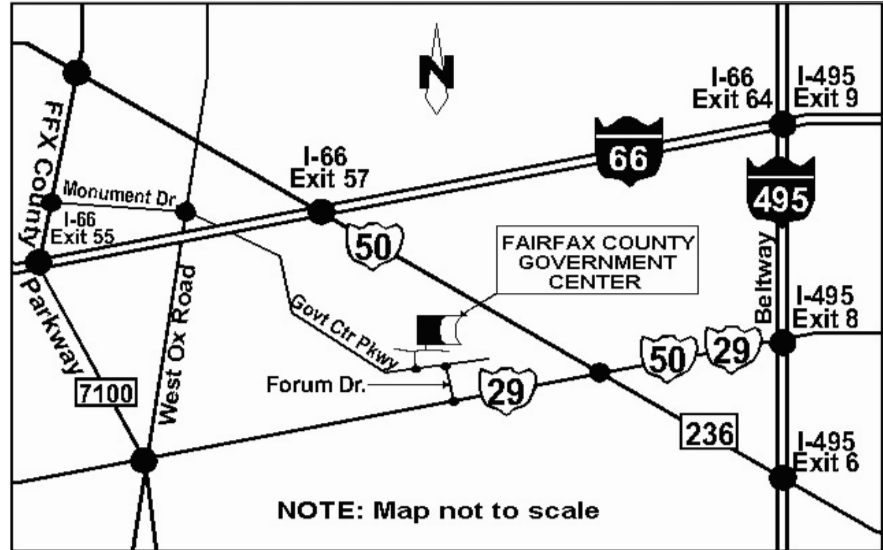
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