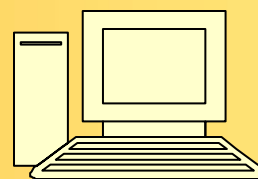


# BAY BYTES

Greater Tampa Bay Personal Computer User Group, Inc.



Newsletter

Issue 11

November 2012

26th Year of People Helping People!



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As well Don Miller's and Darrell Manns' : <a href="http://www.dmanns.org/">http://www.dmanns.org/</a>	

## Can the cloud really keep a ( government) secret?

By William Jackson

The federal government has adopted a policy of moving as many agencies' IT activities as practical into the cloud, a policy that the National Security Telecommunications Advisory Committee -- at the risk of stating the obvious -- calls a paradigm shift.

"As with any technology paradigm shift, issues such as how the new technologies are used, security, policy, and oversight must be considered when weighing the benefits of adopting the new paradigm," NSTAC wrote in its recent Report to the President on Cloud Computing.

The central question addressed in the report, released in May, is can critical national security and emergency preparedness (NS/EP) processes be migrated safely to the cloud? The answer is yes, but with caveats.

## PC Maintenance in Windows 7 made easy

One of the easiest ways to keep your computer running smoothly is to regularly defragment your hard drives. As with previous versions of

Windows, Windows 7 includes a defragmenter tool called the Disk Defragmenter. By default, the tool is scheduled to run every week, which means you do not have to do anything else. However, what you may want to do is change the default schedule to specify a different day and time for the Disk Defragmenter to run.

To change the default Disk Defragmenter schedule in Windows 7:

1. Click Start, All Programs, Accessories, and select System Tools.
2. If prompted to approve the use of the tool, click Continue.
3. Click Modify schedule.
4. In the Disk Defragmenter: Modify Schedule dialog box, choose how often, what day, and at what time of the day you want the tool to run.
5. Click OK.
6. Click OK again.

To schedule Disk Cleanup in Windows 7:

1. Click Start, All Programs, Accessories, System Tools, and click Task Scheduler?
2. Click Create Basic Task
3. Type a name for the task and an optional description
4. Click Next
5. To select a schedule based on the calendar, click Daily, Weekly, Monthly, or One time
6. Click Next
7. Select the date and time for which you want the task to run. Click Next
8. Click Start a program and click Next
9. Click Browse
10. Type cleanmgr.exe in the File name box and click Open
11. Click Next
12. Click Finish

## The Trouble with Terabytes

By Diane Fahlbusch, President, ICON PC User Group, NY  
[www.iconpcug.org](http://www.iconpcug.org)

Technological advances, different materials and cost efficient manufacturing have made it possible for computers to leap from standard 20 GB hard drives of a decade ago and the 200+ GB drives of yesterday to breaking through the gigabyte ceiling affordably in a relatively short period of time. Now having a 1 terabyte drive is passé as 2 TB, 3 TB and even 4 TB drives are becoming commonplace. However, there are some things to be aware of before making the leap.

No, I will NOT wax poetic about my personal opinion of larger drives, including the “Scarlet O’Hara” mindset of maintenance, indiscriminate saving of files and the time for security scans. (For that you can read “*The Lurking Dangers of Larger Hard Drives*” in the June, 2010 issue of **The ICON Graphic**.) Instead, you will need to consider whether your current computer actually knows what to do with all that storage space.

Not so long ago almost all computer operating systems used the partitioning scheme called the “Master Boot Record” (MBR). Unfortunately, the computer will not be able to recognize anything over 2.2 TB. So that larger drive can be installed, but the additional storage space will be useless. The MBR scheme is common on all Windows operating systems through Windows XP, as well as other operating systems from that time period. Windows Vista and the Mac OS X Leopard ushered in the new GUID partition table (GPT) which allows them to recognize the larger drives. Windows 7 and Vista users can use the larger drives as SECONDARY drive without worrying about whether it is a 32 bit or 64 bit version. But for anything larger than a 2 TB drive to be used as the PRIMARY drive, the computer MUST be running the 64 bit version of Windows 7 or Vista.

The systems boot-up firmware must be checked as well. There are many computers using a newer operating system and the GPT partition system, but still using the BIOS firmware. This will need to be updated to the new UEFI firmware, which has become the new industry standard. Check with the terabyte drive manufacturer to see if they offer a firmware update. Of course that updated firmware is useless if the motherboard cannot run the firmware, so again, check with the manufacturer’s specifications. Some will work, but you must use a different connection, such as the PCI-Express card slot.

Most newly manufactured computers ARE equipped with 64 bit operating systems, the GPT partition system AND UEFI boot-up firmware. So if you are thinking about running amok in terabyte land, these are some things to know about before upgrading, or buying that new computer. Remember **new** just means that it has not been used by anyone – it does not necessarily mean that it has the latest technology.

## Software Review: Acronis True Image Home 2012

By Mark Mattson, Editor, Computer Users of Erie, PA  
www.cuerie.com

One never knows when disaster will strike. It could come anywhere, anytime, from any direction. And this is no less true when it comes to disaster striking your computer system. Just in the last month, I found out how true this is. I was preparing to start working on last month's newsletter and, when I started up my second computer (the one that does all my digital photo and newsletter work), I was faced with the dreaded 'click of Death' from the boot hard drive inside the box.

Naturally, it had been over a month since the last backup on this system, and all my document templates and such were captive on a dying drive. Holding my breath, I gave the drive controller board a blast of component cooler, and it got the drive to boot. I then transferred all vital files from the dying drive as well as the second drive to my NAS system, and prepared for disaster recovery.

I had been running evaluation tests on Acronis True Image Home 2012 prior to this failure, so I had a copy available to use to clone the entire drive to the second drive in the machine. This would allow me to keep working until I could purchase a new boot drive for this system.

I installed the software onto the bad drive, and ran the drive clone feature, which imaged the original boot drive to the other one. When it was complete, I pulled the failing drive (good now for a paper-weight), and fired up the machine again.

Success! The image worked, and the computer was once again up and running.

What could have been a disaster of major proportions was solved by the use of a single, inexpensive program. Without it, I would have faced at least a week of reloading all the apps on this machine, not to mention trying to find workable copies of newsletter templates, including the actual files of the published issues. I most likely would have lost a majority of the 2011 files. But the image had them all. The biggest time-saver was the preservation of my Lightroom catalog...that alone would take about three days to re-create from the NAS box. In a matter of minutes, it was restored to the new drive and was intact.

Acronis True Image Home 2012 is the latest release of their most popular backup solution for home users. Introduced originally in 2002, it then could produce disk images on recordable DVDs and other external recordable media, for use in restoring your system. As the years went by, the releases added more and more functionality, until the current version, which incorporates all the features of previous versions, and also gives you the online backup option debuted in True Image Home 2010. True Image Home 2011 also added support for Windows 7, as well as a new user interface, among other enhancements.

### Features to make life easier:

The feature set of True Image Home is able to handle most recovery backup task you can think of. You may image your entire disk at once, or use it to make file level backups at any time you need them. No matter what your needs, there's a function built-in to handle it.

*Continued on the next page*

- Patented disk imaging and cloning software ensures that every bit of your data is backed up, and able to be restored to its original condition in minutes. No need to reinstall your software and OS (Operating System) again!
- The new File Synchronization functionality allows you to keep files in sync between all your computers, with no effort on your part.
- Run your backups on your schedule, not the program's. Smart scheduling allows you to set the times and days when the backups will run. And the new Set & Forget feature lets you set up your schedules once, then it does the work of running them for you. No more forgetting to run a backup.
- Try & Decide allows you to install a new piece of software that you're not entirely sure of (as far as it not being a bug factory), and allows you to 'roll back' your system safely to before you installed it. No more dangers of bad things corrupting your computer. Good also for surfing somewhat iffy websites...it will help recover from those dangers as well, if you encounter any.
- Nonstop Backup makes incremental backups of your data as you work, around the clock. You can now restore to any given point in time.
- If you back up to large external hard drives that may not be supported your OS not a problem. True Image Home will support 2TB and larger drives with ease.
- Have a NAS attached to your home network? No problem. True Image will detect it, and set it up as a backup location for you.
- If you need to recover a single file or folder, or several, you can mount your backup image and use it to get what you need. No need to restore an entire disk for just a few missing files or folders.
- If you have sensitive data that needs protection, not a problem...there's built-in encryption for you, waiting to be put to use .
- Flexible backup options allow you to backup how you want...full image, file level backups, or incremental / differential backups. And the backup can run while you work...no need to shut down and boot into a backup only running environment.

If you need off-site storage for your backups, there is an option available for you as well. Acronis True Image Online allows you to back up your files to their secure data center, giving you peace of mind that your data will be available anywhere you may be.

One feature to beware of, however, is the Secure Zone. It makes a hidden partition on the drive you are backing up, to store your backup files in. This WAS a useful function in the days when external drives weren't available, or too expensive to justify the cost. But the real danger is, if the drive should fail completely, as mine did, all your data is gone....because it's on the dead drive with your live partition. DO NOT use the Secure Zone feature.

### **Installation:**

When you purchase your copy of True Image Home 2012, you receive it via direct download to your machine. An email with your purchase details and serial key is then sent to you to complete your installation. Simply run the executable file as you normally would, and answer the required setup questions. If you choose to use the defaults, installation takes only a matter of minutes.

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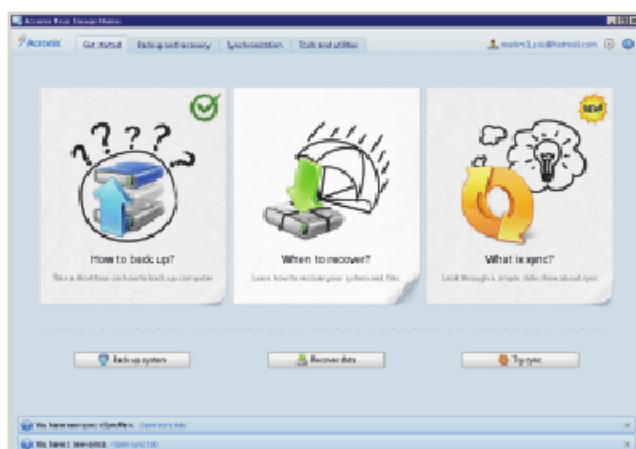


Unlike some other software packages, the license key is valid for only one machine. If you have multiple machines you need to image, you need to purchase licenses for each machine. More on this later...as well as a way to get them for a much lower price.

In my case, installation only took about 5 minutes. I chose all defaults, and it went without a hitch. Once installed, double click the icon to launch the program.

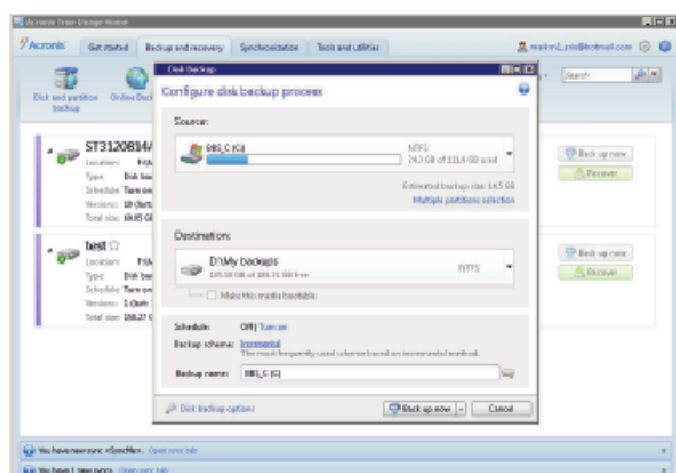
### Operation:

When you first open the application, you are greeted with a generic tasks window, which gives you some basic information on how to perform a backup, restore, or sync. It might not be a bad idea to review these hints, as well as look at the online materials at the Acronis website to get you started.



You want to be at the backup functions, so click on the Backup and recover tab at the top to open the backup functions dialog. Once there, click on the Drive and partition

backup icon in the menu bar, and you will be presented with the following window:

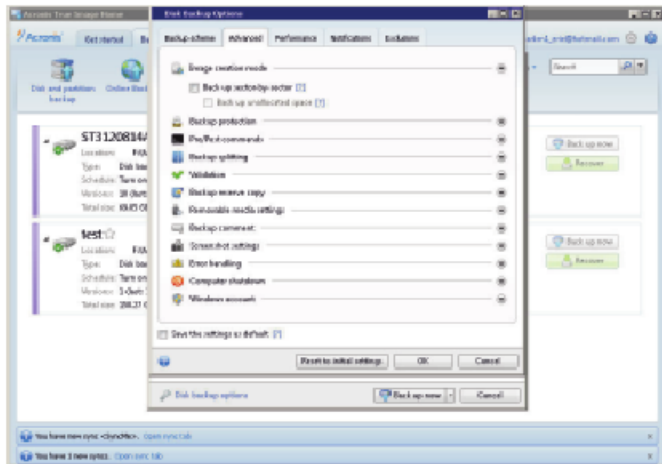


Select your source and destination drives here. You may switch between Drive and Partition views, in case you have a multiplication drive...you can select only the partition you need imaged, instead of doing the entire drive.

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You also need to select the backup style as well...whether it be full, incremental, or differential. There are also a multitude of options available to let you tweak the backup to your requirements, giving you the freedom to choose how the program works...and the peace of mind that it does what you need it to do for you.

There is also an option to set the options you choose as defaults, so you don't need to re-select them with each new backup job you create.



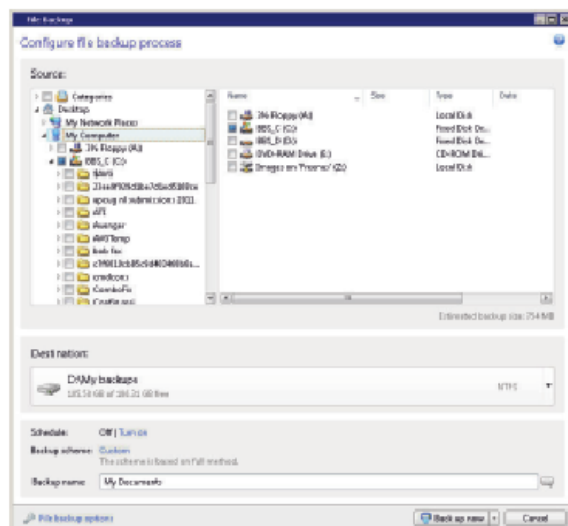
Once you have the parameters of your backup job set, click OK to get back to the main backup window, and click Backup Now. That's all there is to it. The process will start by enumerating your files needing backing up, and then starts the image process.

Depending on the size of your data and speed of your drives and interface (if USB) or media (if going to CD or DVD), this can take some time to accomplish.

As an example, my first test backup was sized around 160GB, and took over an hour to complete, using an external USB 2.0 drive. As this is a somewhat antique system (1.3 GHz CPU and 1GB memory), the throughput is somewhat slower than an up-to-date system. As with anything, your results may vary...but an image based backup will take much less time to complete than a file-by-file backup method.

If you just need to back up a set of files or folders, that can be done without doing an entire drive image. On the backup window, click on the Other backups icon, and choose File backup.

This window will appear:



Continued on the next page

Which will allow you to select the files and folders you wish to back up. When completed (and you've chosen your destination drive), simply click on the Backup now button once again, and your selected items will be backed up.

**Pricing and availability:**

Acronis True Image Home 2012 is available directly from the developer's website, [www.acronis.com](http://www.acronis.com). A single PC license is priced at \$49.99 as of this writing. If you need a 3 PC license, it will run you \$79.99. Delivery is via electronic download. There is also a 30-day free trial download available, if you want to try before buying.

However, there IS an alternative available exclusively for user group members. A single copy license is available from Gene Barlow at User Group Relations ([www.ugr.com](http://www.ugr.com)) for only \$25.

This is the full, non-crippled program...no features are missing. He has made arrangements with Acronis for this special user group member pricing, and it is available to you now...but you MUST order from Gene's website. If you should need the three license package, he has it available as the Family Pack for \$60, a savings of \$20 from the Acronis store price. And as an additional bonus, Gene will ship you a physical CD with your program on it for the same price, plus shipping and handling. Ideal if you don't have a broadband connection (the download is over 200MB, which can take some time on slow connections).

Even more good things come when you purchase through Gene. First, he provides better support for the product than you'd usually get from Acronis as far as operation goes. He will provide you with a copy of his Starter Guide on the CD, or a link address with your serial number. This 21 page document has step by step instructions on installing and using the product the best way possible to get you off on the right foot.

Another bonus is technical support. Acronis only gives you 30 days free support from the date you purchase. Gene will give you support as long as you own and use the product, at no additional charge. With the price of tech support companies are charging now, this is a highly attractive offer, one that can save you a lot of your hard earned money. And this all comes with a 50% savings from the manufacturer's pricing. A bargain that actually works for you!

**Final thoughts:**

I have been using a competitive product to True Image for many years, and thought I had found the only backup application I would ever need. But recently it has become

more unstable, and not getting any better with subsequent versions (I was beta testing the product, and saw what was happening). I set out to find a new solution, and had heard good things about True Image.

I'm glad I decided to take the plunge and make the switch. The time savings alone from the failure of the hard drive in this machine, and the recovery that was provided by this product would make up ANY price they decided to charge for it. But for the price, it is a definite must-have for your toolkit, if you need to ensure reliable and accurate data preservation.



## Is Your Internet Security up to Date?

**Antivirus up to date?**

**Firewall?**

**Windows up to date?**

**Spy Ware?**

**See how to protect your computer at:**

<http://gtbpcug.org/protect/>



## More about Internet Threats

### East-Tec Eraser – take out the garbage permanently and forever.

A Software Review by Herb Goldstein, Editor, Sarasota PCUG, Florida

[www.spcug.org](http://www.spcug.org)

There's no shortage of software that will permanently erase files, but if you simply want the very best there is one that spares none of the bells and whistles, East-Tec Eraser leads the pack. It's for people that demand that their erasures, albeit a single file or an entire disk is erased in such a way as to be totally, completely, and unequivocally gone and unrecoverable by any means or entity known to man. In fact, it surpasses even top-secret military requirements.

East-Tec erasure is not only a leading permanent deleting utility, it offers an extremely useful associated bag of tricks you can employ at your choosing:

1. It will search any of your drives or partitions for remnants of previously deleted files and remove any trace.
2. It will wipe any remnants that exist in the free space of your drives and in your swap files.
3. East-Tec's Privacy Guard will wipe web pages, pictures, temp files, history, recent docs and all other tracks you usually accumulate in your Internet wanderings, newsreaders and web browser.
4. It will permanently erase the contents of your recycle bin.
5. It will permanently erase the contents of your "deleted items" folder in Outlook Express and compact the information in your other folders.
6. It will permit you to schedule regular erasure tasks of your time and choosing.
7. In Windows XP and in 32-bit versions of Windows 7, Eraser installs in your context (right-click) menu in Windows Explorer or your alternative file manager. If you right-click on any files or folders you have selected, eraser will promptly dispatch them beyond recovery. While Eraser is not available in the *context menu* of 64-bit Windows 7, it is fully functional everywhere else in Windows 7.
8. Eraser can completely wipe an entire hard drive, CD or other media, making it safe for disposal.
9. You can password protect the use of Eraser.
10. You are provided a choice among several permanent and secure erasure methods which are fully explained.
11. Eraser will conveniently destroy the accumulation of an Internet session with a single click.

East-Tec Eraser provides the most advanced, thorough and effective erasure utility of its kind, to safeguard and protect your privacy. It is well worth its cost of \$39.95. You can try it for free or purchase it at [www.east-tec.com](http://www.east-tec.com).

It has received top awards in such computer publications as PC World.

## Do Not Track Plus

*From the Internet*

A new program offered free from Abine software allows you to block websites you visit from tracking where you browse. Many sites, and Facebook.com is one of the worst, want to track every site you visit so they can match up your preferences to the items they want to display on you wall for advertisers.

In the software industry there is a movement to have the browsers include a plug-in that prevents this action but as of yet it is not ordered and may never be. Browser publishers may take this on from their own volition but they will be pressured by advertisers not to. One must remember that many sites depend on you or others visiting the links they place on their pages in order to pay for the website.

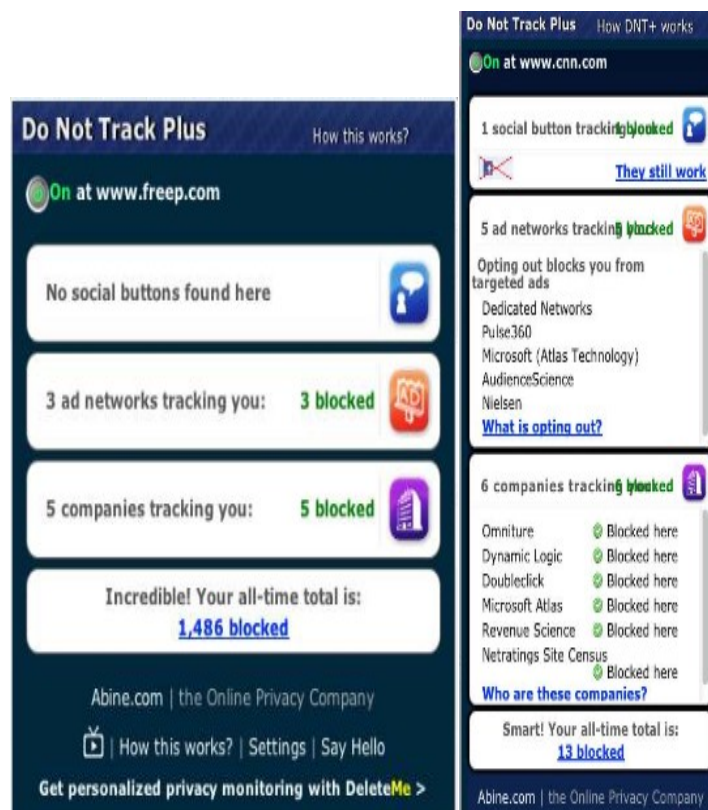
When you run Abine it puts a small icon in your browser and it displays a number with each site you visit, telling you how many attempts are made to track your visit and what type of tracking company is making the effort. They also keep a running grand total of how many blocks they have made. In the first few days of my use on one machine they blocked 1600 attempts.

Installation following the quick download is painless and there is virtually no setup. While writing this article I loaded Firefox, downloaded the software and ran it as a plug-in.

This is required for each browser you use. After restarting Firefox I visited cnn.com and Donottrack Plus reported blocking 13 attempts to track my browsing on their site. It looked like this (see right).

The program came highly recommended by Cnet.com, which is where I read about it.

It can be downloaded from <http://www.abine.com/dntdetail.php>



## "Driving" Your Computer

By Diane Fahlbusch, President, ICON PC User Group, NY [www.iconpcug.org](http://www.iconpcug.org)

We all know that one of the most essential components of our computer is the storage drive. It's the home of your operating system, firmware, applications and those precious files you have collected over time. Faster processors, more RAM ... are useless if there is nothing to pass through them. We now have tremendous options available to us: larger capacity, faster RPMs, newer materials, faster connections, external drives and thumb/flash drives. The more you know about them, the better you will be able to decide what is right for you.

### Floppy Drives:

Yes they still do exist! But they have almost waved themselves goodbye. In their day they were great, and became smaller. But as the capability of computers increased and technology advanced, they just did not have the capacity, were too bulky and very fragile little things. But, they are still designated as the A drive, and the standard "Save" icon.

### Zip Drives and Jazz Drives:

Yes, they still do exist! These were inherently floppy drives on steroids to meet larger capacity demands, as well as being able to function faster. But these are also stored to a magnetic film, which will erode over time, and are subject to semi-severe conditions. So if you still have anything you want from these, it is recommended that you transfer your data to a newer format.

### CD Rom Drives:

These sounded the beginning of the end for floppy drives and their kin, as well as cassette tapes and vinyl records. Writable CDs are very inexpensive now, and consist of various layers. The top layer is actually a protective coating, which is why scratches to this layer may be able to be repaired with Skip Disc, or something similar. The data is stored on a different layer. There are plenty of these drives still around, and it's not a bad idea to slap one into your tower unit if you have room. This way you can burn out the CD only drive and save the:

### CD/DVD Drive:

This is the dual drive that is now standard on any computer, and very similar in physical design to CDs. If you need to replace one, watch for read and write speeds, which are far faster than the ones just 5-7 years ago, as well as any firmware updates you might need for faster write speeds to work. Do not forget to watch the read/write speeds of the discs you buy, as well as whether your drive can burn +R DVDs. Also watch for the "new" thing from just a few years ago, dual layer. But of course the latest is:

### Blue Ray Drive:

An essential for REALLY large capacity discs or to watch blue-ray discs with high definition graphics. Of course, if your monitor is not high definition or your computer's video card does not know what to do with HD files, you may just want to wait on this one. It's still very pricey – even the stand-alone units to connect to your HD TV.

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**Hard Disc Drives:**

The vast majority of storage drives available are still the good ol' magnetic discs. The original design of the rotating, rigid platters storing data magnetically by read/write heads floating on a layer of pressurized air is still the same as it was from the 1960's, but the recording density has increased dramatically. The platters themselves are not made of a magnetic material. They are coated with a thin layer of magnetized material, which has changed over the years. The platters are held together on a spindle, which requires very careful placement to allow for just enough air between each platter as well as the read/write heads.

Disc drives also contain two electronic motors. One motor spins the platters at a specified RPM. The faster the RPM, the faster the drive can access the data - and the greater the heat output. The platters do have a special coating to resist thermal-induced magnetic breakdown, but it is still very important to make sure that your cooling fans are working properly, and more important to check or change your fans if you replace the factory installed drive with one with a faster RPM. The second is called an actuator motor to control the read/write heads. If they no longer line up correctly, they will not function properly. It is possible to reset the placement of the heads if they are no longer lining up properly - but not easy. Of course, if your drive has experienced a "Head Crash", where the misplaced head has actually scraped along the surface of the disc, those sections are destroyed forever.

Your data is stored in digital magnetic format on the platters on disc drives. Once a brand new hard disc drive has collected any information, it will never be the same as it was in its pristine state - just as a magnet will always have some residual iron filings no matter how hard you try to remove them. And of course another way to help prevent the loss of the data is for the correct magnetization to be stored with some room to spare. But that concept of "elbow room" shrinks as there is more data stored. One way to think about this is by comparing the way some neighborhoods look today versus 25 years ago. (The Smithhaven Mall used to loom out of nothingness like Oz's Emerald City - now you can miss it because there are at least three other shopping centers/malls around it.) So if your data was originally being stored with plenty of space, you will wind up with fragmented files as that space shrinks. Defragmenting your hard disc drive is one of those easy maintenance things to do to speed up performance, because it moves related pieces of information near one another for faster access. However, you can rewrite to a hard disc drive as long as the device is working properly. Of course, there might be residual bits of magnetic charges left on that previously written space which might corrupt your file.

Hard disc drives seem sturdy because of their tough protective casings and hard materials, but they are not made to withstand sudden shock, such as being banged or dropped, especially when still spinning. Some notebook computers now come with an active hard drive protection that parks the disc heads if the unit is dropped. Hard disc drives are also sensitive to power surges (including static electricity), sudden loss of power, contamination within the enclosure, corrosion and exposure to excessive heat or magnetic fields. Some recent studies seem to show that disc drives maintained at somewhat colder temperatures do NOT outlast those at somewhat warmer ones, as previously believed.

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All drives will experience normal “wear and tear”. Interestingly, your disc drives are like your car – it’s better for the engine if you take longer trips instead of the short hops, or leaving it idling. One way to reduce the life of your drive is by leaving the computer on, but in an idle state. It is better to shut the computer off when you are not using it. Of course, excessive rebooting will also shorten the life of your disc drives, as they have to spin up every time.

### **Solid State Drives:**

The newest data storage drive is the solid state drive, which is radically different than its predecessor. These drives use microchips to store the data to free, programmable blocks and do NOT contain any moving parts. Because of this they are quiet, physically smaller, use less power to operate, run cooler, can tolerate greater altitudes and temperature ranges, tolerate vibration, are not susceptible to magnetic fields, do NOT require defragmenting (actually, defragmenting adds wear for no benefit) and are less susceptible to sudden shock. (But that does NOT mean that you should be playing handball with them!) Performance is most frequently tied to the type of memory used and the controller, an embedded processor that works as a bridge between the computer’s electronics and its own, as well as a number of other factors. They will typically use either non-volatile (NAND flash) memory or volatile (DRAM) memory.

The NAND flash based memory, while being slower than its counterpart, has an advantage – it can retain information WITHOUT power. That is why your camera cards and thumb/flash drives do not need a separate power supply. This memory can be MLC (multi-level cell), or single-level cell, the latter of which is more reliable and faster, but more expensive. Also, the NAND flash memory cannot directly overwrite a file. It must first rewrite the information to free programmable blocks of space, THEN it overwrites the previous blocks. If data was encrypted with an encryption program NOT located on the drive itself, the original data, can only be safely “wiped” by using a special “secure erase” program on the drive. Effectively, this means that your once secured information is unsecure, unencrypted and accessible. And these blocks do have a limit of 1,000,000 to 2,000,000 write cycles (1,000 to 10,000 per cell) for MLC, and up to 5,000,000 write cycles (100,000 per cell) for SLC. This is compensated for by “wear leveling” – writing to different sets of blocks each time and spreading the usage out evenly. (Think of it as a little league coach who always rotates all of the players in every game, but does a quick tidy-up at the end of the game.) This effectively means that you will eventually “use up” the memory. When that happens the drive just stops working. Granted, it may take a many years, but it depends upon how much you create, or re-create.

The DRAM provides lightening fast data transfer, and does NOT have a limit to the number of times programmable blocks can be written to. It also requires an internal battery or capacitor or other power supply, and requires backup storage systems to ensure preserving data if power is lost. These are most frequently used as internal drives in netbooks and computers. Because nothing needs to spin during boot up or starting up applications, these drives respond rapidly. Their read times are far less than hard disc drives, again because there are no heads to search for the data. However, these drives do have certain drawbacks.

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For starters, solid state drives with DRAM are far more expensive, but the price is coming down. Because of this, there really are not many large capacity solid state drives available. Be wary that there are some of these drives are using a combination of NAND and DRAM. Another consideration is the write speed. Less expensive models may not be providing much faster write performance than hard disc drives, but will be impacted significantly by the number of free programmable blocks. Solid state drives are really not the best choice for operating systems that continually rewrite to the drives while in use, such as Windows. While solid state drives CAN provide greater performance, be aware that you can only push the information through as fast as your connection can handle. Having a USB3 device will not increase the speed of data transfer if your computer's connection is USB1. Write performance is greatly reduced when using a SATA connection. Performance of DRAM drives will deteriorate in time when there are no free programmable blocks left. Also, as previously mentioned, DRAM requires constant power. So even though your computer is turned off, the DRAM drive still requires power.

Please always remember to make educated decisions about the products you select, and set realistic expectations on any hardware you use.

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**To all the members a nice and wonderful**

**Thanksgiving**



Some of the material appearing in this Issue was sent to the editor by other members of the GTBPCUG. Thank you.

## Officer Candidates for 2013

Below is a list of the members who have volunteered to help run our group during 2013:

President:	Bob Rooke
Vice President:	Blanchard Brock
Secretary:	Patrick Courtney
Treasurer:	Nestor Bonilla
Program Co-chairs:	Sherry Foecking and Skip Brugger
Newsletter Editor:	Gary Staley
Membership:	

### Non-elective positions:

Webmaster:	Parker Monroe
Internet SIG:	Jerry Harris
Windows SIG:	Darrell Manns

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