

STAR Watch

Statewide Technology Assistance Resources Project

A publication of the Western New York Law Center, Inc.



Volume 14 Issue 1

Jan-Feb 2010



Solid State Drives: Not Ready for Prime Time

A solid-state drive ("SSD") can perform all of the functions of a hard drive, but it can do it significantly faster. Instead of multiple disks rotating under a read/write head, they are totally solid-state devices. In many ways, an SSD is functionally similar to a USB thumb drive, except that it is permanently installed in the computer, has much greater capacity than a thumb drive, and reads and writes data substantially faster. Since it was designed to replace the hard drive on a computer, its external shape is almost identical to that of a hard drive.

But, for most computer users, is it a good idea to install SSDs in place of traditional hard drives?

SSDs consume less power

The power consumption numbers are impressive. Compared to traditional hard drives, SSDs use 10% of the power at standby, 20% of the power at idle, and 35% of the power at full operation. In a laptop where battery life is a big issue, that could be a big deal. We read through

several reviews posted by individuals who purchased SSDs. Many claim that the battery life of their laptops doubled after replacing the hard drive with an SSD.

SSDs are Quieter

Because SSDs consume less power, they run much cooler than other computer components. Consequently, almost all SSDs do not have or need a cooling fan. There is nothing in it to make noise. SSDs are not just quieter, they are dead silent.



In this issue...

- Solid State Drives: Not Ready for Prime Time
- Operating Systems a la Carte
- Improve Your Vista and Windows 7 Experience
- January, 2010 Web Statistics
- Who We Are





SSDs access data faster

Today's hard drive can sustain data transfer rates just slightly above 100 Megabytes per second (MBps). SSDs that we surveyed can sustain a read speed of 185 to 250 MBps. That is much faster than a traditional hard drive. But many purchasers claim disappointment when it comes to the write speed of SSDs. Users are complaining that the write speeds of SSDs are as much as 20% slower than those of hard drives.

SSDs are more reliable(?)

Since there are no moving parts in an SSD, there should be greater reliability and it should last forever, shouldn't it? By eliminating all moving parts, reliability is considerably better. But the type of memory used to store data in the SSD can eventually wear out. SSDs use the same type of memory found in Compact-Flash or SD cards: Flash memory has a finite number of read/write cycles. It can wear out in as little as 1,000,000 write cycles. In an effort to maximize the useful life of the drives, manufacturers have programmed the controllers to spread the allocation of the data evenly throughout the drive's memory so that no area is overused and consequently "worn out".

In our opinion, this is a major issue. For a trained individual, replacing a drive in a computer is not an extremely complicated task, but neither is it a quick simple task. Besides the issue of physically swapping drives (easy), all of the applications, operating system components, and data must be moved to the new drive (the not-so-easy part). And what if some critical

data was stored in an area of the drive that failed? We hope you have a good back up because you will need it.

SSDs cost more than hard drives

Today, a 1 Terabyte (1,000 Gigabytes) hard drive can be purchased for around \$99 from most computer parts vendors. A 1 Terabyte SSD can set you back \$1,200. Many organizations don't spend that amount of money for an entire computer.

The bottom line: Not now

While solid-state drives certainly have some significant performance advantages over traditional hard drives in the areas of noise, power consumption and speed, their cost and finite lifespan negate all of their advantages. Even though it has not happened yet, we are confident that new memory technologies will replace flash memory in SSDs with something longer lasting.

But the price of an SSD is a show-stopper. Right now, these drives simply cost too much. It is not unusual to pay a premium for the latest technology, but the prices on these drives put them completely out of reach for almost every potential purchaser.

The SSD is a product that, when perfected, could totally replace the traditional hard drive. But right now, it has problems that prevent it from consideration. When these issues are solved, it could revolutionize storage technology for computers. Stay tuned.





Operating Systems A la Carte: I'd Like One from Column A, One from Column B,...

Recently, we came across an article that proclaimed that Windows 7 might be the end of the line for the way that Microsoft markets operating systems. Instead of packaging two or three variations of the operating system for customers to purchase, the entire operating system would be unbundled. After purchasing the operating system core, users would choose the additional features that they desire, such as varying levels of security, networking options, or accessories and utilities. Each of those additional features would have an additional charge associated with it.

Initially, our reaction to purchasing operating systems *a la carte* was rather emotional. Was this going to be another attempt by Microsoft to wring more money out of its clientele without providing any added value? After we calmed down, we decided that it is possible that some good could come from this.

Will it cost more?

Currently, there are a lot of people who are very unhappy about the cost of the various versions of Microsoft Windows 7

operating system. Many industry analysts predict that, unless something drastically changes, future operating system products from Microsoft will become even more expensive. Win7 is a large, complex operating system. It has the capability to do a lot of things, but do most users need to have all of that functionality? Probably not.

It is almost a sure bet that a user who wants all of the bells and whistles that come with an unbundled operating system will shell out a lot more cash than Win7 demands. But users who only pay for operating system features they actually need could end up paying significantly less than they would for Windows 7. Why pay for what you don't use?

Could it result in better operating system products from Microsoft?

After any computer product has been around for a reasonable amount of time, changes will be requested. With change comes one of the biggest headaches for developers. As more features are added or improved, many existing features may become less useful or may even conflict



with the new features. From the developer's point of view, the ideal solution would be to remove the unused or superseded features, but users have a different opinion: Continue to add functionality, but don't remove anything. This results in more and more work for the developer as they maintain (and try to improve) a product that is growing in size and complexity.

Microsoft faces that same issue on a colossal scale. They have millions of users demanding that they constantly improve their products, but never remove any marginally-used or obsolete features.

By making many components of the operating system optional, life gets simpler for Microsoft: If users want a certain set of features, they pay for them. Users will spend the money on the features they need and skip the non-essentials. User computers are not bloated with code for unused features. Microsoft could allocate resources to work on the stuff that sells, and pull resources from things that nobody really wants. Eventually, they might even be able to get rid of some features that have been on life support for more than a decade. The operating system footprint could actually be reduced and Microsoft might have the resources to fully implement more user-desired features.

Another possibility: Other software vendors could supply alternatives to the Microsoft-supplied components. If Microsoft cannot or will not provide components that end-users are satisfied with, other vendors might be able to market a competitive product that would be more reliable, more capable, or even cheaper than Microsoft's. Competition might be a good thing.

Is it even remotely possible for Microsoft to do this?

Yes. The current architecture of Microsoft operating systems could support an a la carte marketing approach today. Starting with Windows Vista and continuing with Windows 7, Microsoft made fundamental changes to the way operating system components interact with one another. Prior to Vista, all of the components that made up the operating system were one big happy family. Each component implicitly trusted the others and never expected that any of the others would intentionally try to harm them. But that approach caused problems. If a component became infected by a virus and had a problem, it could bring the entire operating system down since there was no means to isolate an individual component from the rest.

With the release of Vista, that changed. Operating system components now work in a "protected environment": The component was "protected" from the negative actions of other components and other components were protected from its negative actions. In many situations, the operating system can shut down and restart a failing component without restarting the whole operating system. It is no longer "one big happy family" inside of Vista and Windows 7. Components of the operating system are treated more like user applications.

Now that the change in relationship among operating system components has been completed, it is much less difficult for Microsoft to make them optional.

So far, Microsoft has not responded to questions about the possibility of unbundling its operating system products. We expect that there will be no statements on this subject until the successor to Windows 7 is ready to be released. That could take several years.



Improve Your Vista and Windows 7 Experience: 3 Tech Tips That Can Help

Tip# 1: Make it run a little faster: Turn off the cutesy visual effects. Some of those cute little bells and whistles can take their toll on computer performance:

- Open the Control Panel.
- In the Search field, type **visual**. (This will not work if the Control Panel is running in Classic mode).
- Click on **Adjust the appearance and performance of Windows**.
- Click on **Adjust for best performance**.
- Click **Apply**.

Tip# 2: Make it a little safer: Security Essentials is a free download from Microsoft that is simple to install, easy to use, and always kept up to date so you can be assured your PC is protected by the latest technology. It's easy to tell if your PC is secure — when you're green, you're good. It's that simple.

Microsoft Security Essentials runs in the background so that you are free to use your Windows-based PC the way you want—without interruptions or long computer wait times.

For more information about Security Essentials, go to http://www.microsoft.com/Security_Essentials/

Tip# 3: Prevent it from slowing down: Adjust the power management settings. The power management system monitors system usage and turns off unused devices after a specified time interval, thus saving power. As soon as the device is needed, the computer powers it up — but there is a delay. While this could have a profound effect on the battery life of a laptop, most users have desktop computers that are not relying on batteries. Any delay in the computer's response becomes an annoyance.

By default, both Vista and Windows are configured for “Balanced” performance, but unless the computer is a laptop, there is almost no benefit.

To remove the performance delays caused by the power management system:

- Open up the Control Panel
- In the Search field, type **power**, then select **Power Options**.
- Choose the **High Performance** plan (If that choice is not visible, click on **Show additional plans**).



WNYLC Web Statistics For January 2010

Total Hits.....	528,594
Number of Pages Viewed.....	168,448
Total Visitors.....	65,470
Average Hits/Day.....	17,051
Average Pages /Day.....	5,433
Top Web Browsers Used:	
Internet Explorer 8.x.....	17%
Internet Explorer 7.x.....	31%
Internet Explorer 6.x.....	18%
Firefox.....	7%
Safari.....	2%

Top 5 Operating Systems Used:	
Windows 7.....	3%
Windows Vista.....	16%
Windows XP.....	54%
Windows 2000.....	5%
Mac OS.....	2%



WHO WE ARE

- Joe Kelemen - Attorney
- Kathleen Lynch - Attorney
- Denetra Williams - Attorney
- Marisa Villeda - Attorney
- Tom Karkau - Programmer
- Sherry Soules - Administrator
- Holly Lindstrom - Data Analyst
- Joy McDuffie - Foreclosure Prevention Specialist



Wnylc@wnylc.com



716-855-0203



www.wnylc.net

Want to know when StarWatch is available?

If you wish to receive an email telling you when the next edition of StarWatch is available, please email us at starwatch@wnylc.com. In the subject area, simply enter the word "Subscribe". When the next edition of StarWatch is available, we will send you an email that contains a link to the newsletter.

If don't wish to receive email notifications, send us an email to at starwatch@wnylc.com with the word "Unsubscribe" in the subject area. We will stop sending email notifications to you.

WNYLC values your privacy. If you provide us with your email address, Western New York Law Center will not give the information to any other organization.