



Inclined To Put Your PC Out To Pasture?

An Inexpensive Way To Improve Performance

Recently, after upgrading the hard drive in my computer at home with a significantly larger one, I found myself with a perfectly good, surplus 40GB hard drive. I put the word out to relatives and friends that the drive was available and free to a good home. It took a while, but eventually someone told me of a kind and loving computer that wished to increase its storage capacity and offered to adopt the homeless hard drive—if I would install it. I was told that the computer was beginning to slow down; that maybe it was nearing retirement age. I was asked if there was any chance that swapping hard drives might revitalize the computer and allow it to be responsive and productive again. I promised to do my best.

Shortly after the receptive but slightly aging computer (Gateway G6-333c Pentium II) arrived, it occurred to me that it might be interesting to find out exactly how much, if any, difference a hard drive upgrade could make. The technical specs for the new hard drive (Western Digital WDC4000BB 40GB, 7200rpm,

2MB cache) showed it to be far superior to the original hard drive (Quantum Fireball EX AT 6.4GB, 5400rpm, 512KB cache):

- The replacement drive had more than 6 times the capacity of the original drive. It had plenty of room for growth.
- The drive rotated at a higher rpm than the original. This meant that it took less time for the targeted piece of data to arrive under the read/write head of the drive. The original drive rotated at 5400 rpm. The replacement rotated at 7200 rpm. The time it took for a single rotation of the replacement drive was 75% of the time for the original drive.
- The onboard cache buffer on the replacement was 4 times larger than the cache buffer on the original drive. This allowed the newer drive to “read ahead” farther in anticipation of the next request for data.





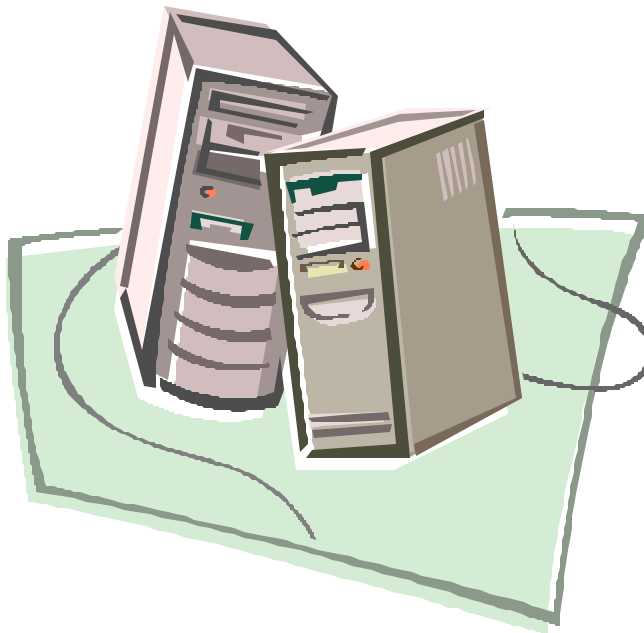
Two tests were set up. The first simply measured the time it took to boot the machine. The second test measured the time it took to copy a large number of files and folders from one place on the hard drive to another. Both hard drives were defragmented before the tests were conducted.

compute-bound will not run faster. But most things that computers do are not computation-intensive. Any time the computer is trying to load a program module or read/write data to disk, it will get done faster. Up to 25% faster in this case.

The Results

When booted from the original hard drive, Windows 98 Second Edition took 1 minute 15 seconds to fully start up. When the machine was booted from the replacement drive, it took only 59 seconds. That's almost a 25% improvement.

The folder-to-folder copy (3,622 files; 450MB data in multiple subfolders) took 5 minutes 21 seconds using the original drive and 4 minutes 15 seconds using the replacement drive. Again, that's a 25% improvement.



Why is this important?

Almost every legal services office has machines that are running Windows 98 Second Edition that probably cannot be updated to Windows 2000 or Windows XP because the peripherals are not supported or the processors are not fast enough to handle the new operating systems. Even though the machines are mechanically sound, but it would not be cost-effective to upgrade the hardware to run Win2000 or WinXP.

Upgrading the hard drive to a higher capacity, faster one might be a good choice—When the price is right. Recently, several local stores have begun selling 40GB hard drives (Western Digital and Maxtor) for \$29.95 after rebate(s). For a person or organization that was able to perform this upgrade themselves, they could get a 25% real-world performance increase for \$29.95 (plus tax).

Conclusions

A faster hard drive can make a measurable improvement in a computer's overall performance. Does this mean that everything that the upgraded computer does is 25% faster? Absolutely not. The processor is no faster than it was previously. Applications that are



7 Steps to Improve Wireless Network Security

Creating a secure network is not an impossible task, but it does require a certain amount of information about the specific risks involved. Listed below, are 7 steps that can be taken to improve your network security. While implementing all of the items listed would result in an extremely secure system, implementing any of them would improve your security. The first three items apply to hard-wired networks also.

1. **Change the router login ID password.**

When the router was built at the factory, the manufacturer installed a default login ID and password to allow the purchaser to have access to the configuration settings. Every router built by that manufacturer has that very same login ID and password. Every self-respecting hacker prides themselves in knowing those default login IDs and passwords. If you do not change it, the degree of difficulty to break into your network is about as close to zero

as you could possibly make it.

- ## 2. **Disable remote router access.**
- Remote access allows you to modify the settings in the router from anywhere that you can get an Internet connection. It may seem like a harmless convenience, but it also allows every hacker on the Internet an opportunity to break into the router and alter the settings to their advantage. Routers typically need little or no maintenance after proper configuration—

Remote router access is an unnecessary and potentially dangerous convenience. Enabling remote access and failing to change the login ID and password on the router (item #1 above) totally negates any possibility for security.

- ## 3. **Turn on the firewall.**
- You do not need or want any uninvited snoopers to get into your local area network from the Internet. Make sure that the firewall feature





is enabled. Most routers have this feature turned on, but check to be sure.

4. **Change the SSID.** The SSID (Service Set Identifier) is the name that you have given to your wireless network. Again, any reasonably smart hacker knows the default names that were installed at the factory and can use them to break into your network. Change the SSID to make it more difficult for hackers to get into your network.



5. **Disable SSID broadcasting.** Airports, coffee shops, etc. want to advertise the availability of wireless networking service to their customers. You already know that it exists and where it is. It does not make sense to tell potential strangers about the existence of your wireless network if you do not want them to use it. SSID broadcasting should be disabled.
6. **Enable data encryption.** Unless it is encrypted, data could theoretically be “sniffed” out of the air if someone had the right equipment. If you are transmitting

or receiving sensitive information over a wireless network, data encryption should be enabled. Data encryption also keeps unwanted guests from jumping onto your wireless network since they do not know your site’s encryption keys.

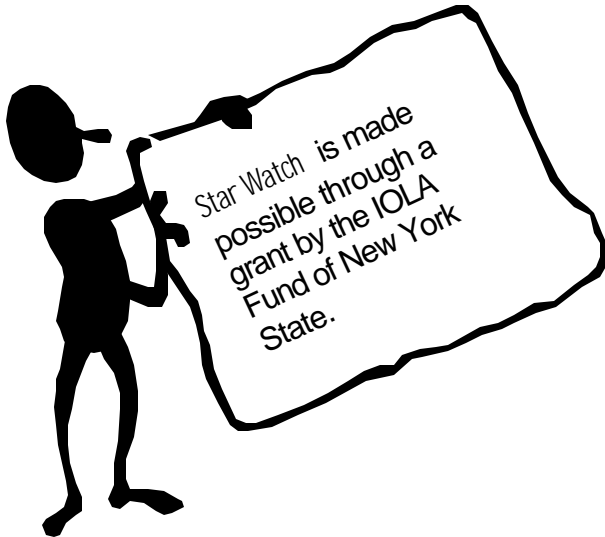
7. **Enable MAC filtering.** The MAC address (Media Access Control) is a unique identifier that is built into every wired and wireless network adapter. When computers attempt to connect to a network, they send the MAC address to the router and the router responds by assigning an IP address to the computer. By enabling MAC filtering and entering the MAC addresses of computers that you wish to allow into the network, any computer whose MAC address is not in the list will not be allowed into the network. To find the MAC address of a PC, open an MS-DOS window and type in WINIPCFG (Windows 95/98/Me), IPCONFIG/ALL (Windows 2000) or GETMAC (Windows XP). When you purchase a new network adapter, the MAC address can usually be found on the label of the box.



WNYLC Web Statistics For April 2004

Total Hits 314,595
 Total User Sessions 45,045
 Average Hits/Day
 (Monday—Friday) 13,239
 Average User Sessions/Weekday . . .
 1,735
 Number of Pages Viewed 99,680
 Average Number Of Pages
 Viewed Per Day 3,322
 Number of Documents Viewed . . 67,656

Accessed Using Internet Explorer . . .
 92%
 Accessed Using Netscape 4.5%
 Operating Systems Used:
 Windows 98 30%
 Windows 2000 28%
 Windows XP 29%
 Windows 95 <1%
 Windows ME <2%
 Windows NT <2%
 Macintosh <2%
 Linux/Unix <1%



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