

## CAN I DO ANYTHING TO SPEED UP THIS COMPUTER?

My main computer has been running particularly slow lately, sometimes temporarily freezing up. In the task manager, I can see that the CPU usage sometimes spikes very high. The computer is about 5 years old.

I've taken some steps, such as defragmenting, deleting temp files and making sure I don't have unnecessary processes running.

Based on the results from a Belarc System Advisor scan I just ran (below), can I potentially increase performance by adding more memory? Or does the fact that I have an older processor mean that it's time for a new computer?

Windows XP Professional Service Pack 2 (build 2600)

3.00 gigahertz Intel Pentium 4  
16 kilobyte primary memory cache  
1024 kilobyte secondary memory cache

80.02 Gigabytes Usable Hard Drive Capacity  
12.30 Gigabytes Hard Drive Free Space

Board: Intel Corporation D865GLC AAC28906-409  
Serial Number:  
Bus Clock: 200 megahertz  
BIOS: Intel Corp. BF86510A.86A.0063.P18.0406220349 06/22/2004

1280 Megabytes Installed Memory

Slot 'J6G1' has 256 MB  
Slot 'J6G2' has 1024 MB  
Slot 'J6H1' is Empty  
Slot 'J6H2' is Empty

\*Operating System\* \*System Model\*  
Intel Corporation \*Processor a\* \*Main Circuit Board b\*

\*Drives\* \*Memory Modules c,d\*  
ST380011A [Hard drive] (80.03 GB) -- drive 0, s/n 5JVH48XB, rev 8.01,  
SMART<<http://www.belarc.com/smart.html>>Status: Healthy

\*Local Drive Volumes\*

c: (NTFS on drive 0) 80.02 GB 12.30 GB free

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Those hardware specs should be able to handle XP just fine. I run XP with a 2GHz processor and 512M ram, that's less than half of your memory. I'd say upgrading your hardware likely won't help you much. It's time to look deeper into your system, but you have taken the first basic steps. I assume that you've checked for malware/adware, but if you haven't, that would be another thing to do. If not, then you could run some free tools to help clean up more stuff, things like CCleaner, which you may have heard of. Other sezzers will undoubtedly recommend others. I've never had much luck with these kinds of things in terms of enhancing performance, but I do run CCleaner regularly to keep the clutter down. It's hard to tell you what the problem is with your system without more detailed information. The troubleshooter in me likes to 1) look at system event logs to see what is causing the freeze up; and 2) run baseline tests using Windows Performance Logs. The latter can at least tell you if something is eating up your RAM, or if you have a runaway process that is eating up CPU cycles, or if you have excessive disc I/O. If the problem is that a necessary process is using up your RAM or if you have excessive disc I/O, tweaking the virtual memory can sometimes help. Running the performance monitor isn't difficult, but you would have to do some reading up on how to run it. Then you may need help interpreting the results. I'm always glad to help with either one.

Christopher Bumgarner

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A quick thought is that you're running close to the bare minimum on RAM. You've got 2 slots open. If I were you, I'd buy 3 1 gig ram sticks. 1 gig = 1024 megs. Now, depending on the type of RAM, that could be pretty cheap or pretty pricey. If you go to Crucial.com, they have an online applet that scans your computer to see how much ram it can support, what type of ram, and then makes recommendations.

Also, you have a very small HD, and it's pretty full. Much larger HDs are cheap these days. Like 1 TB drives for less than \$100.

However, if you're going to buy more RAM and a HD, you might want to just upgrade to a new system. Reasonably spec'd out systems these days are in the \$500 range. For that you get more RAM, bigger HD, etc.

Other's will likely chime in on this.

Tom Simchak, Texas

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Your computer is the same speed as my FASTEST computer. If it is fine tuned, it will serve the majority of business needs.

Have you run MalwareBytes? If not, do so.

If you were to wipe the hard drive and reinstall Windows from scratch, you may

be surprised at the speed. If you do that, get a new hard drive. Don't reuse the old one. The performance of a drive can deteriorate with time, if the drive is bad. You can measure the speed (HDTach is a free utility), but why not save the old drive as a permanent backup?

I just rebuilt an HP P4 laptop this morning with less memory than your computer has. it's very fast, for its intended purpose.

Mike Phillips, North Carolina

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You could overclock the processor and chill it in liquid nitrogen

Steve O'Donnell, Pennsylvania

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XP Pro will use up to ~ 3.5 gigs of memory. You only have 1.25 gigs.

One cheap and easy tactic is to replace your 256M chip with another 1-gig memory chip. If you have a tech friend you may get one for free. If not, it's only \$25 or less.

You may also want to upgrade to XP Pro service pack 3.

That's about all i would do. I wouldn't spend much money. That computer is so old and so relatively slow, there's no point in spending a whole lot of time on it. You've gotten 5 years out of it; perhaps it's time to move on.

As a rough example of what' available on HP refurbs, taking into account their current specials but NOT taking into account the "extra" discount you can usually get with a phone rep:

Spend \$440 (\$500 w/ extended warranty and shipping included) gets you HP dc5800 XPV Duo2 E8400 3.0GHz 250GB SATA 2GB DDR2 800 DVDRW(LS) Rmkt MT PC

Spend \$480 (\$540 w/ extended warranty and free shipping) and you get an AMD quad core, and RAID: HP dc5850 XPV PhenomX4 9850B 2.5GHz 2-250GB SATA RAID 4GB DDR2 800 DVDRW(LS) Parallel Rmkt MT PC

You can also get machines with Win7, though they cost a tad more.

Erik Hammarlund, Massachusetts

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How is 1280 MiB of RAM close to the bare minimum on an XP system? The "bare minimum" is 64 Megabytes, she has 20 times that. I wouldn't recommend 64 Meg, but 512 Meg is plenty unless you are doing stuff like editing videos or producing music. She didn't mention that she does anything like that, so I assume she isn't running intensive software like that. I had 512 Meg in my system and I upgraded it to 2.5 Gigs of RAM. My system didn't run any faster (I upgraded so I could run virtualbox). I realize that is anecdotal, but throwing hardware at the computer without some basic checking could be a waste of time and money. Of course, you could get lucky. And she has 12 GiB of free hard disc space. That's plenty of room--more than enough to defrag. I don't think adding hardware to her setup is going to help (unless she is running sophisticated software like video production or virtualization). It's possible that adding a second hard drive and moving the paging file to that drive might help, but without some basic performance monitoring, it's impossible to tell. So the way I see it, either spend a little time tweaking or buy a new computer.

Christopher Bumgarner

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As I recall, a machine I used to maintain of that vintage had issues with mismatched memory sticks (they were just getting into dual channel memory at the time if I recall and that works best with two sticks of equal size). Getting some additional memory should definitely help although be warned that even if you install 4x 1GB sticks Windows may not be able to fully utilize the last GB (software issues outside of scope). That and a larger hard disk should keep your system from paging memory to disk as often (slow) and when it does, not take as long to put paged memory back into RAM.

Regards,

Vincent Kan, Illinois

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I suspect that Lisa, being the research maven that she is, may keep many IE/Firefox/Chrome tabs open which consumes memory very quickly. The bare minimum is fine if all you're doing is running XP and say a single instance of Word. Browser tabs + running Flash + having Acrobat open to view a PDF + etc will quickly have a system paging memory to disk and thus feeling sluggish because disk access is orders of magnitude slower than memory.

Regards,

Vincent Kan

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We all use our computers for different things. I've probably asked you this before, but what on earth are you running when you eat up 3.5 gigs? I run Virtualbox (which takes

up one Gig by itself), Firefox, video player, and a few other things and I'm nowhere near my 2.5 Gig capacity.

Christopher Bumgarner

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Download and run System Explorer. It will tell you what's taking up your CPU resources. I had a similar problem a couple of months ago, and System Explorer revealed that Windows Search was using a tremendous amount of resources. Once I uninstalled Windows Search, my computer went back to normal.

Here's the link: <http://tinyurl.com/c5afh4>

Scott I. Barer, California

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It's not uncommon that i have 8-10 acrobat windows (with large files), 7-8 Word documents of varying size, outlook 2007, pc law, 10-20 Firefox tabs, ~10 chrome tabs, and whatever else I happen to be running (at the moment I'm importing ~3G of pictures into Adobe Photoshop Lightroom, in the background.) And that's not even getting into the occasional video edit.

I I rarely cross 2G used, though that's partly a result of XP Pro's atrocious page file handling; it is paging now even though there's a solid gig of ram available. But I tend to buy fast well specced computers, because at my level of use i can easily see the difference.

Most XP Pro users will be fine with 2g in theory. But it's a cost/benefit analysis. If the difference between 2G and 4G were more than a few dollars, it wouldn't be worth it. OTOH, if you can get 4G for an extra \$40, spend the dough.

Not incidentally, that is especially relevant if you're running Win7, which uses more memory than does Xp Pro, and even more so if you ever intend to use xp mode in win7. And it's also relevant if you want to future proof your computer against future OS upgrades.

Erik Hammarlund

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Wow, what great responses so far!

Since sending my first e-mail, I ran ccCleaner and deleted 256 megs of junk.

I usually have to following programs running on my computer at any given time:

Chaos Intellect ([www.Chaossoftware.com](http://www.Chaossoftware.com)) - e-mail, calendaring, tasks

Firefox (I do try not to keep too many tabs open at once)

Tweetdeck (desktop twitter client): yes, I know this is a memory hog.

However, I run it on my laptop as well, and it doesn't slow down that system.

WordPerfect 12

Other programs as necessary (e.g., Foxit Reader for viewing pdfs; MS Word)

I already have a 500gb external drive. However, I use that only for tertiary backup and to house home videos (which I don't keep on my main drive at all). My primary (local) backup is achieved by synching files between my desktop and laptop computers using Second Copy. My secondary (offsite) backup is through Carbonite. Last I checked, Carbonite will not back up files on an external drive. Therefore, most of my files (except for some really old ones) are on my hard drive.

I'm going to download and run Process Explorer and MalwareBytes.

I recently won a \$25 Best Buy gift card. While Best Buy might not be the best/cheapest place to get a memory upgrade, I frankly don't know what else I might want to buy there . . . .

Lisa Solomon, New York

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try hitting the Ctrl Alt and Delete keys at the same time. this will bring up the task manager which will tell you what applications you have running, and you can stop those you don't need running, the next tab is the process list that tells you all the processes running and how much cpu memory they are running.

A program call The Ultimate Troubleshooter lets you set up once, and restricting other programs to manual run.

pablo uesti, Texas

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First I agree with all of the above particularly more RAM. I make a couple of other suggestions: what AV program do you use and has it upgraded/updated itself lately? I use AVG which recently was upgraded and now my WinXP 'puter is noticeably slower esp. when AVG is running scans. Also I highly recommend something called Advanced System Care by IOBit - freeware <http://www.iobit.com/> or you can purchase the "pro" version for \$20. It is quite simple and user-friendly and especially good at reg cleaning and

editing, something that I am not comfortable doing with most such utilities. The defrag utility also seems to run faster and easier than the MS WinXP accessory defrag program.

Michael Boli, California

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Quick tuning tips in order of price/benefit (sort of):

(1) Disable any startup items that are not essential. Background processes eat up a lot of resources.

(2) "Defrag" and cleanup the registry. It gets bloated and is a real bottleneck. Michael recommends a program he likes below. [Do this after removing programs, stopping startup programs, and cleaning up the hard drive].

(3) Tune your anti-virus. Pick an efficient AV program and set it up to meet your needs. You can probably get away without heuristic scans of everything. You probably don't need to "scan all files" too often. Set more comprehensive scans for after hours.

(4) Buy more RAM. It's usually cheap (as others have mentioned) and is more often than not a real bottleneck. Also, as mentioned by others, pairing memory may allow your computer to better utilize the memory. Make sure the sticks are identical. 1G + 256MB just sounds horrible.

(5) Clean up your drive. Defrag. Remove unused programs. Transfer data files (as opposed to applications) to another drive (like an external drive). That can cut down on the input/output bottleneck on your drives.

(6) Get a better video card. If you are running a lot of graphics (I'm not sure if that includes PDF files), a slow on-board video card might be a bottleneck.

All said, the cost of a new computer is probably worth it. Think of your increased productivity, lost time tuning the current system, etc.

Even better, get a Mac. Unless you use "must have" PC software, it more than makes up for the initial sticker shock. No AV overhead, great programs at low cost, everything "just works" (more or less), and I'm far more productive in the Mac interface than I ever was on a PC (love Spaces). Also, the UNIX base doesn't suffer from amount of bloat that all Windows systems do.

Jonathan Tam

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- > Hi Lisa, SS lurker, (very near-future) BL refugee, and former tech-head
  - > here, posting off-list.
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  - > The symptoms you describe sound to me like a memory issue. It could be the
  - > case that your RAM is failing, in which case, replacing it would speed
  - > things up dramatically. (Yes, RAM can fail. It happens more often than you
  - > think and is one of the main reasons people replace their computers).
  - >
  - > Here is a free piece of software that can check your RAM, called Memtest86.
  - > To use it, follow these steps:
  - >
  - > (1) download it
  - > (2) unzip the file
  - > (3) burn it to a CD (you'll need to use a program that handles .iso files
  - > correctly like Nero or the free BurnAware Free (links below))
  - > (4) at the end of your day, put the CD in your computer, reboot the
  - > computer (the test takes several hours and you can't use the PC in the
  - > meantime).
  - > (5) run the test. By morning, it will tell you whether your RAM is
  - > failing.
  - >

Let me just add that, if a RAM failure is the issue, adding more RAM won't speed it up until you've removed the dying stick.

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- > Hopefully this helps!
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- > P.S. Feel free to repost this as anonymous advice; this is a common issue
- > that few people know about.
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- > MemTest86:
- > Website: [www.memtest86.com](http://www.memtest86.com)
- > Direct Download: [www.memtest86.com/memtest86-3.5.iso.zip](http://www.memtest86.com/memtest86-3.5.iso.zip)
- >
- > BurnAware Free:
- > Website: [http://www.burnaware.com/burnaware\\_free.html](http://www.burnaware.com/burnaware_free.html)
- > Downloads: <http://www.burnaware.com/downloads.html>
- >

Follow-up questions from me: if the memory is bad, I'm starting from scratch. In that case, which of the items listed here <http://www.crucial.com/store/listparts.aspx?model=D865GLC&pl=intel&cat=#should> I get? And even if my current memory is fine, should I buy a paired



set of 1 GBs? (By way of comparison, here's what BestBuy says is compatible with my system <http://bestbuy.upgradebase.com/results.asp?kIo0qH00h00AED>. The prices are MUCH higher.) Since I have Verizon FIOS internet service, if I can tune this computer to maximize speed, it should improve my productivity for anything I do online. (In other words, I suspect that my slow computer has been standing in the way of my taking full advantage of my connection speed.)

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Quick correction from the helpful lurker: he meant to recommend Memtest86+:  
<http://www.memtest.org/>

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Given you only have 12GB of HD space left, it might be a good time to upgrade hard drives. Preferably a sata drive that is at least 7200rpm. At least that is what I would do.

Lesley Hoenig, Michigan

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It seems like you've done all the right things. The hard drive space might be a slight issue, but I think the bigger issue is the amount of memory you have. Initially when folks purchased Windows XP, 1GB or more of RAM was more than enough memory to run it. These days, your antivirus software could be taking up at least half of that, if not more. 2GB is now the bare minimum I would recommend on an XP PC. 3GB is even better. I would also organize your RAM so that the biggest memory sticks are in the lower numbered slots. Also, check your paging file and see if it is set optimally and run CCleaner - both on your files and your registry. Finally, use the pagedfrg utility provided in Microsoft's Sysinternals <http://technet.microsoft.com/en-us/sysinternals/bb897426.aspx>.

Susan H. Borgos

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Thanks for these tips, Susan. I have a few follow-up questions:

1. How do I know if my paging file is set optimally? What is the optimal setting?
2. The website for the pagedfrg utility says:

When you run \*PageDefrag\* (pagedfrg.exe) you will be presented a listbox that tells you how many clusters make up your paging files, event log files, and Registry hives (SAM, SYSTEM, SYSTEM.ALT, SECURITY, SOFTWARE, .DEFAULT), as well as how many fragments those files are in. If you feel that these files are fragmented enough to warrant a shot at defragmenting them, or if

you want to defragment them at every boot, select the appropriate radio button choice and click OK.

How do I know if the files are "fragmented enough to warrant a shot at defragmenting them"?

3. On my computer, would the lowest numbered slot be J6H2 and the highest numbered slot be J6G1?

>> Slot 'J6G1' has 256 MB  
>> Slot 'J6G2' has 1024 MB  
>> Slot 'J6H1' is Empty  
>> Slot 'J6H2' is Empty

Thanks-

Lisa Solomon

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Well, it looks like SS lurker was right: Memtest86+ has only been running for an hour and a half, and it's already found six failing addresses. Are a certain number of failing addresses ok, or does the presence of even a single failing address mean that I should replace the memory? Also, how can I tell which of the two memory sticks I have installed contain the failing addresses?

Assuming that I have to get rid of all my current memory, of these two memory kits recommended at crucial.com, which one is better:

<http://www.crucial.com/store/mpartspecs.aspx?mtbpoid=575C60AEA5CA7304>

<http://www.crucial.com/store/mpartspecs.aspx?mtbpoid=2C747D5EA5CA7304>

Also, if I discover that the computer is running a 32-bit OS, I'll get a paired 1 GB kit and another GB. How can I tell if my system requires a paired set of 512s or if it will take a single 1 GB?

Any tips for the actual memory replacement process? Of course, I'll make sure all my backups are current and set a system restore point. Anything else?

Lisa Solomon

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Lisa, please do not get rid of your memory, current or otherwise. What would life be without memories?

Say three times, "my computer's memory is not my memory, my computer's memory is not my memory, my computer's memory is not my memory."

James S. Tyre, California

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A single failure by itself is not a big problem - what starts getting problematic is if it repeatedly fails or intermittently fails. To isolate which stick has the issue:

1. Pull one of your two sticks.
2. Rerun Memtest86+
3. If Memtest86 comes back clean, remove remaining stick and replace with stick pulled in 1.
4. Rerun Memtest86+
5. Now you should know whether one or both sticks have memory issues.

If you have a motherboard model # or a system model # you'll be looking for whether the memory is listed as "dual-channel" to determine whether you should insert memory in pairs. What may be a physical indication is that on your motherboard, you see your memory banks with two of them in black plastic sockets and two in blue (or some other color) plastic sockets. You'll want to insert your pair with one into each color (1 black, 1 blue, usually same side of the pair).

As for actual memory replacement:

[http://www.helpwithpcs.com/upgrading/installing\\_dimm\\_memory\\_ram.htm](http://www.helpwithpcs.com/upgrading/installing_dimm_memory_ram.htm)

should give you some visuals to show you how to remove/install the new memory sticks.

I'm under the impression that you do want to keep this computer up and running although after 5 years the memory might not be the only part that may be physically wearing out. My former computer I built in 2002 and it lasted until 2008 when the power supply finally gave out (several other parts had been exchanged at this point, and the way I used my computer may or may not be considered torture). It may be more cost effective for you to buy a new computer than to keep this one alive.

Regards,

Vincent Kan

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I don't know about the memtest part - it seems like at least one of your sticks may be bad. I would test them one at a time.

With regard to the options from Crucial, one set of RAM is PC2700 and the other is PC3200. If you keep your existing 1GB stick, you need to make sure

that the ones you are adding are the same speed as the existing stick. If you are going to start from scratch, then it doesn't make much difference either way. The PC3200 is slightly faster. Since your motherboard can accommodate the PC3200, that would make some sense.

Your system will take GB sticks based on what Crucial is offering you - that is, if you did your search based on the correct hardware. Crucial would only offer 512s if that's what you needed. They do say on the listing for the 2700 that while your slots do not require matched pairs, their recommendation is to do matched pairs. However, that could be matched 1GB pairs.

Susan H. Borgos, Colorado

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Honestly -- I just upgraded to a newer faster and better computer top of the line model -- it was the best money I ever spent - I dreaded the cost -- but it saved me time.

I really really try to be very cheap and try not to buy anything I don't need with fancy gadgets -- but the fact of the matter is the computer is my practice -- so I bit the bullet as soon as I could afford it. I highly recommend as much as I do on this thing and as many projects as I have -- do it before it dies -- I was working on 3 year old laptop when I started my practice and I was too cheap to buy another one-- it died and it took me 3 days to replace it -- I was dead in the water.

So I upgraded about six months as a result of NEED in to a faster newer model -- well as my practice grew it could not handle the volume and was processing too slow. Two years in I have just upgraded my laptop again to the most powerful one I could afford. I am hoping to go at least three years with this.

My other one I passed off to my assistant. So -- as much as you may hate to do it -- it may be time.

Oh -- and I have found a great computer guy to help me. He always tries to get me to spend less - but if your like me and don't ike upgrading because you lose all your fast short cuts -- it is worth finding a GOOD computer guy to help you.

Rinky S. Parwani, Florida

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I agree with Rinky as your machine config is starting to look dated and it's worth investing in a solid business machine.

I went the cheap route with a lower end business Dell machine and have been pretty disappointed with the performance. It does browsing and word processing OK but not setting any speed records. I probably won't keep it more than 18 months. I had a top of the line Micron years ago that I paid good money for and it lasted me 5 years with no problems and great performance.

Another option for you is to try a fresh install of XP. There's loads of sites out there talking about a noticeable slow down over time on XP due to a myriad of factors.

go ahead and splurge on a new machine...it's almost as exciting as getting a new pair of sneakers.

Bob Bell, France

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#### UPDATE

I ordered three new 1 GB RAM modules from crucial.com. They arrived today and I installed them. My desktop computer is booting up as I type this (on my laptop).

Thanks, all, for taking the time to respond to my question.

Lisa Solomon

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Yeah those should help, if you take out the 256 stick, and have all 1gb sticks. What Bob said about XP slowing down is very very true. Especially if you haven't had a new install in 5 years. I always take an image of my machine freshly installed with all my favorite/needed programs installed. I'm the de facto computer guy in my company, since I build machines as a hobby for over a decade now. If the memory doesn't help, I chalk it up to the old install of XP.

The P4 3.0ghz is fast enough to run XP. It isn't the greatest, but it's good enough. Keeping in mind XP is a 10 year old OS just about, so requirements are low to run it.

Joseph D. Dang, California

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Yes, I got rid of all of the old sticks. Machine's humming along quite nicely now.

Lisa Solomon,

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