2008 PC Buying Guide

The ultimate guide to buying the system of your dreams in the new year.

By Matthew Murray

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If you've been putting off buying a new computer, 2008 is your year. Hardware prices on almost all fronts have dropped dramatically, helping you get more power for your dollar now than at any time in recent memory. Plus, Windows Vista has made many everyday (and not-so-everyday) tasks simpler than ever.

If you're unsure what to look for, we'll help you weed through the confusion and find the system that's just right for you, your family, and your bank balance. This guide will give you a quick rundown of the hardware, software, and peripherals you'll need to help make 2008 a computing year to remember. We'll even give you some quick tips for setting up your system once it arrives, and take a look at what's happening in the laptop and Apple realms.

OPERATING SYSTEM

Windows Vista was released in January 2007 and dominated the PC landscape last year. But it got off to a rocky start with driver and compatibility issues that left some users grumbling well into the summer. While Vista still won't satisfy every die-hard Windows XP fan, the perseverance of software companies and Microsoft's diligence in tweaking Vista and releasing Service Pack 1 (SP1)—which should be available soon—mean that Vista is much more stable now than when it first appeared. So while you still may be able to pick up XP systems from certain vendors for a few months more, for the most part Vista is what you'll get.

You will, however, need to decide which of the four consumer versions you want. For most users, we recommend Vista Home Premium. With Windows Media Center (for watching and recording television), Windows DVD Maker, and the high-definition version of Windows Movie Maker, it has the best balance of features for the price, and it will help you get the most out of your new system. If you're buying a computer strictly for work, you might want Vista Business, which forgoes those fun features for more-practical tools such as a complete backup-and-restore package and Remote Desktop Connection, for accessing your computer anywhere you have an Internet connection. Vista Ultimate combines both packages and adds BitLocker Drive Encryption for additional security, but it will also add the most to your bill. If you're not a true completist, go with one of the other packages.

Steer clear of Vista Home Basic, though. It's little more than a souped-up version of Windows XP, with few of the enhancements that distinguish Vista from XP (such as the snazzy-looking Aero interface). Consider it only if you neither need nor expect your operating system to do much more than, well, operate your system.

PROCESSOR

No doubt about it: 2007 was the year of quad-core. We're not currently seeing anything on the horizon that will supplant its position at the top of the processor-power heap, but we're expecting quad-core's refinements in both technology and price to define 2008 just as its introduction did in 2007. Both Intel and AMD have quad-core processors to meet most budgets, and they'll help you net the most efficient system possible.

If you can find a spare grand in your sofa cushions, go for Intel's top-tier Core 2 Extreme QX9650. This processor is based on the latest 45-nanometer (nm) technology (code-named "Penryn" during its development), and it works with the new Bearlake chipset to increase front-side-bus speeds to 1,333MHz and support newer DDR3 RAM (more on that in a moment). The top end of AMD's Phenom platform is currently occupied by the 2.2GHz quad-core Phenom 9 CPU, with faster quad-core chips and even three-core models due in the first half of 2008.

Either way, both platforms help launch most applications' speed straight into the stratosphere, which die-hard gamers will appreciate (especially with boundary-pushing games such as World in Conflict or Supreme Commander). But near the end of 2007, we also started seeing lower-end quad-core processors—especially Intel's $280 Core 2 Quad Q6600—in midrange systems. These lower-cost options can really crank up performance without being ruinously expensive—just don't expect all the bells and whistles of their more powerful siblings.

If you want to spend even less, Intel and AMD still offer lots of dual-core CPUs, which provide plenty of punch at even more pleasing prices. Look for AMD's Phenom X2 or Athlon X2 series, and Intel's E6000 series. The best of these top out at around $250 or so, and are still strong enough to handle nearly anything you can throw at them. It might take another couple of hours to transcode that DVD, but most of the time you won't notice the performance you're missing.

RAM

From the consumer perspective, RAM technology doesn't evolve very quickly. You seldom hear much about it until the next iteration arrives. That's big news for a few months, but it's then forgotten until the next innovation a couple of years later.

DDR2 RAM is still the standard, but its status as the performance choice is fading fast. DDR3, introduced in the second half of 2007, is now the go-to technology for Intel users who need the fastest possible memory-processing speeds. (AMD hasn't implemented support for DDR3 yet, but it will soon.) Of course, in the grand computing tradition, you'll pay big: As of this writing, DDR3 costs more than twice what an equivalent amount of DDR2 does; expect it to take at least a few months for prices to level off. Still, if you demand the best perfor-m-ance and want your RAM to remain a top performer in a year or two, DDR3 is what you want. But if you need DDR2, don't worry that you're getting something inferior—it's still potent stuff.

Whichever type you choose, don't settle for less than 1GB—you might squeeze by with 512MB if all you do is word processing, but to manage most of today's applications, you need at least twice that. And for running Vista Home Premium or Vista Ultimate, insist on 2GB. It will help those versions' specialized media apps run better and give you the best basis for multitasking. After all, once you see all that these OSs have to offer (to say nothing of other software), you'll want as much RAM as possible.

STORAGE

There's an old adage in computing: "Data will always expand to fill available hard drive space." This first became readily apparent when digital music came into vogue, and if iTunes' standard ripping rate of 128Kbps doesn't satisfy your hankering for sound quality, your music library can grow really big really fast. Plus, now that mainstream apps (including the higher-end versions of Windows Vista) supply plenty of tools for editing audio and video, burning home movies to DVDs, and recording TV shows, hard drive space is more in demand than ever. And, of course, there's also the need to back up your data—which should always be on your mind.

Fortunately, storage capacities are skyrocketing. One-terabyte (1TB) internal hard drives made their first appearance in 2007, and as the year closed out we heard rumblings that we could expect capacities of three or four times that by as early as 2009. But right now, it's still cheaper to get multiple smaller-capacity drives than one large-capacity one: Two 500GB drives, for example, will cost you less than one 1TB drive. Still, if you plan to really give your computer a workout, the extra outlay might be worth it—there's nothing worse than coming home late on a Monday night to find that Media Center ran out of hard drive space and didn't record the latest episode of 24.

Regardless of your computing interests, don't skimp on your hard drive. If you're not a music buff or videophile, we recommend at least 250GB for plenty of room for the software out there now and to allow for space to grow. If you're into video editing or plan on using your computer as a digital video recorder, the sky's the limit—500GB is the absolute minimum, and more will only be better, especially if you want to capture high-definition content.

Hard drives come in different speeds, too: 7,200 revolutions per minute (rpm) is the most common, but you'll also see 10,000rpm and even 15,000rpm drives out there. Keep in mind, though, that the faster the drive, the higher the cost per gigabyte. Plus, the 10,000rpm-and-above models top out at much lower capacities. You can achieve a good speed/price balance by getting a small-capacity 10,000rpm hard drive to house Windows and your programs, and a large-capacity 7,200rpm drive for storing your data.

Something else to consider is RAID, or Redundant Array of Inexpensive Disks, which can provide improved reliability and performance. The two main types are RAID Level 0, which combines two identical drives into one large drive, and RAID Level 1, which mirrors two identical drives to greatly reduce the risks associated with disk failure. Level 0 gives you a slight performance boost, but if either hard drive fails, your data is toast. Go for Level 1 for that extra layer of security, but remember that you'll essentially get one drive for the price of two.

EXPANSION, INSIDE & OUT

If you're as unlikely to crack open your computer as you are to pop the hood on your car—or if you buy one of those handy all-in-one LCD/computer models such as the Apple iMac, Dell XPS One, or Gateway One—you'll never need to worry about expansion slots. But if you plan on connecting other devices to your computer, you'll want to know what kind of ports it has.

Most computers have six to eight USB ports spread between the rear of the system (for the things you seldom disconnect, such as your keyboard, mouse, and printer) and the front (for your iPod, flash drives, and anything else you connect and disconnect often). Typically, you get two front-mounted USB ports, with the rest on the back of the system. FireWire ports are also worth looking for, though they're used by fewer devices (primarily camcorders). Another good choice, found most often on top-end systems but gradually filtering down to lower-cost ones, is external Serial ATA (eSATA), which provides a speedy connection for external hard drives.

Tinkerers who want to make sure the PC has room to grow should pay attention to the number of drive bays, expansion slots, and RAM slots. Drive bays come in two different sizes: 5.25-inch and 3.5-inch. Knowing how many your system has of each size, whether they're internal or front-accessible, and whether they're already occupied can make a huge difference if you want to add a hard drive, optical drive, or card reader later.

Expansion slots, for adding graphics, sound, and networking capabilities, also may or may not be occupied. If you expect to make changes to your system after it arrives, look for at least five expansion slots—performance mavens who might want to augment their graphics should go for the max, seven, and look for the option to install two or more graphics cards.

Finally, if it turns out that the 2GB of RAM we recommended earlier isn't enough for most software a year from now (we doubt it, but you never know), you can just plug in another stick or two—if you know what kind, and have room. Many motherboards come with four RAM slots, but some (especially smaller ones) have only two. And pay attention to the speed rating of your RAM, such as PC2 6400 or PC3 10666—when you buy new RAM, you'll want the numbers to match.

GRAPHICS

Most mainstream PCs today come with some form of integrated graphics—just plug in your monitor, and you're ready to go. Integrated graphics will handle elementary chores without breaking a sweat—and it can even drive those eye-popping Aero effects in Vista. But anything beyond the basics, especially anything having to do with 3D, will be too taxing—and unlikely to satisfy your eyes.

Graphics cards, which these days usually plug into a PCI Express (PCIe) x16 or PCIe x16 2.0 slot on your motherboard, help relieve your computer of the picture-processing burden. But they come in lots of performance grades and price levels, and it can be hard to know if you need what you're getting—or if you're getting what you need.

Only hard-core gamers need to consider the highest end of the spectrum, where the cards usually have 512MB or more of their own RAM. Cards based on the top-end nVidia GeForce 8800 GTX graphics engine or AMD's Radeon HD 2900 XT engine can deliver lifelike visuals, but they'll also drain between $400 and $1,000 from your bank account and hundreds of watts of additional electricity from your computer's power supply. And that's if you want only one—for the ultimate in desktop graphics performance (and, of course, cost), you can link two, three, or even four graphics cards in a CrossFire multicard arrangement. The competing Scalable Link Interface (SLI) technology currently allows for two cards, with three-card configurations on the near horizon.

If you don't need all that, nVidia and AMD both offer lots of low-end and midrange cards that will send your graphics into the black without sending you into the red. Budget solutions include the nVidia GeForce 8500 and the ATI Radeon HD 2400 XT for less than $100, the Radeon HD 2600 XT for about $150, and the GeForce 8600 and Radeon HD 3850 and 3870 cards for under $250. These cheaper cards won't offer top-notch performance running the latest 3D games, but if your gaming needs are moderate, they're an improvement on integrated graphics.

All these cards, by the way, support DirectX 10 (DX10), Vista's advanced 3D instruction set, which delivers the most-detailed graphics effects out there. Vista SP1 introduces the next iteration, DX10.1—insist on a DX10.1-compatible card if you want to take advantage of DX10.1's additional effects. (At press time, Radeon HD 3800 cards were DX10.1-ready; nVidia's are likely to follow suit before long.) But according to Microsoft, the differences between DX10 and DX10.1 are slight, so don't worry about missing out on anything eye-popping.

REMOVABLE STORAGE

Only a few years ago, DVD burners were relatively rare on new computers; today, it's almost impossible to find a system that doesn't come with one. That's welcome news, because burning files, music, and video to disc is a great way to keep your desktop—both on and beneath your computer—tidy. Most drives today are zippy enough, so whether they write DVDs at 18x or 20x speed matters little; so long as you have one, you're good to go. And if you have two, even better—disc-to-disc copying is a great convenience.

But if you're really into high-definition video, you'll also want to consider a Blu-ray or HD DVD drive. While you can find drives that can read both formats, none write to both. Most of these next-generation drives are very expensive—a Blu-ray burner can cost more than 10 times as much as a regular DVD burner. Since prices will almost certainly drop as the high-definition formats proliferate (and the format war rages on) during 2008, your best bet is to splurge for the technology only if you know you'll make good use of it right away.

Some drives support technologies called LightScribe or LabelFlash, which let you retire your Sharpie marker in favor of printing labels directly onto the top of discs you record. These drives require special media, but if you burn a lot of discs, the convenience is worth it.

Other removable-storage options are available. Many manufacturers outfit their systems with multiformat memory-card readers, which accept data cards from a variety of cell phones, music players, and digital cameras, simplifying the process of transferring photos and music files onto your computer. (You'll frequently see these readers built into a single unit along with a 3.5-inch floppy drive; chances are you don't use floppies anymore, but if you do, be sure to check for a drive—they're no longer standard equipment.) Some companies even offer proprietary data-storage methods: On some of its models, HP includes Media and Pocket Media Bays that accept swappable hard drive cartridges that hold more than standard DVDs. If you want an easy way to expand your storage capacity without physically installing hard drives, they can be a good way to go.

AUDIO AND SPEAKERS

One of the biggest—and least heralded—advances in PC technology over the last decade has been the rise of integrated audio. You no longer need a discrete sound card to hear music and sounds in high quality on your computer, and many systems even have built-in jacks for six or eight speakers for the full surround-sound experience. Granted, few apps other than games and DVD programs take full advantage of that audio technology, but if you're a fan of them, there's no substitute. Find out what audio capabilities your computer has, then look for speakers that take full advantage of it—you can get a decent 7.1 speaker system for just $100 to $200.

Of course, for the ultimate experience, you'll want a separate sound card—these snap into a PCI slot on your computer's motherboard and offer even better audio quality. Creative has led the sound-card field for years, and it offers great models for under $100. The company recently licensed out its advanced X-Fi chipset to other companies, so expect the market to grow as other companies try to branch out from the path Creative has been blazing over the last 15 years.

DISPLAYS & EXTRAS

These days, just about every manufacturer offers the option to bundle a flat-panel LCD monitor with your desktop purchase—and that can lead to some great bargains. Better yet, most displays these days are wide-screen models, which deliver extra screen real estate. The usual starting points are 19- or 20-inch displays (though budget packages may still include 17-inchers), but if you want to go still bigger, 22-inch monitors are becoming more affordable and offer resolutions up to 1,680x1,050 pixels.

If you're buying an entertainment PC that will be the center of your home theater, or plan on viewing lots of high-definition content, go for a monitor at least 24 inches in size—that's when 1,920x1,200 resolution kicks in, allowing you to get the most out of your Blu-ray or HD DVD movies. For the real end-all, be-all of high-end gaming, a 30-inch monitor will let you max out your resolution at 2,560x1,600—just make sure your computer has a high-end graphics card with the capability to take advantage of it.

Whether you'll need or want anything else depends on what you plan to do with your computer. Planning on using it as an entertainment PC? Look for options for a wireless keyboard or mouse, and make sure you get a TV-tuner card and remote control, too. If you don't want to string Ethernet cable, an 802.11 Wi-Fi wireless card is worth insisting on. Also, a Bluetooth hub could let you use even more wireless devices on your computer—great if you're running out of USB ports, or if you're looking for an entertainment PC you can use from your couch with a wireless keyboard and mouse.

WARRANTY, SERVICE, & SUPPORT

We hope you never have a problem so severe that it can only be fixed by returning your PC to the manufacturer. But PC peace of mind is always welcome, knowing that in the event the unthinkable happens, you'll be covered.

Most computer companies include a year of warranty protection, though a few offer as much as three years out of the box. (You can, of course, always pay for more protection if you want it.) In most cases, you'll have to send the computer back to the company for repairs, but warranty options are available (usually at extra cost) for at-home service.

Some manufacturers offer more support options, ranging from online backup services (with the complimentary storage space usually limited to just a few gigabytes) to remote-support services where a technician accesses your computer from the company's tech-support offices. If you think you'll need the assistance, or if you just want to err on the side of caution, paying for extra protection is the way to go.

YOU'VE BOUGHT IT...NOW WHAT?

Once you've purchased and set up your PC, there's still the little matter of getting it up to speed. Here are the first five things you should do once you've hooked up everything:

1. Suppress surges. Power surges are among the most devastating things computers can experience—your components could all burn themselves out in a split second if you're extremely unlucky. (It's happened to us.) As insurance, hook everything up to a surge protector, preferably one with an uninterruptible power supply (UPS) that will provide battery backup and let you shut down your computer gracefully if there's a power failure.
2. Administer shots. Viruses, spyware, and other forms of malware can slow up your computer and even put your vital personal information at risk. Protect yourself by making sure you have up-to-date antivirus and other security software installed. Also, to thwart hacker attacks, make sure your firewall is turned on before you connect to the Internet for the first time.
3. Give unnecessary software the boot. Many systems, especially those from major manufactures, come with lots of software preinstalled. Some of this can be helpful, but it can also eat up hard drive space, slow down your computer at boot time, and suck away memory you could put to better use. (They don't call it "bloatware" for nothing.) Uninstall everything you don't need, including trial versions of software you don't plan to use.
4. Get up to date. Lots can happen between the time your computer is assembled at the factory and the time you get your hands on it, so make sure you have all the latest Windows updates and patches. Vista systems should automatically check for updates, but if you've purchased an XP system, run Windows Update (Start > Control Panel > System and Maintenance > Windows Update) before anything else. Reboots might be required.
5. Safeguard your data. The saying goes that there are two kinds of computer users: those who have lost data, and those who will. There's no better time than right at the beginning to take steps to ensure that your files will be safe from even the most catastrophic occurrences. Vista has a built-in backup program, located at Start > Accessories > System Tools > Backup Status and Configuration, that can get you started right away. Use it!

LAPTOP OF THE HEAP

Sales of laptops have been outpacing those of desktops for a while now, and it's easy to see why: In the last few years, notebooks have made great leaps in power and portability, with plenty of systems available to fit every need and budget.

But, as always, you pay extra for the convenience laptops provide, and even top-of-the-line notebooks don't quite match up to desktops in terms of value, features, or speed. (After all, just how hot do you want your lap to get on a long car trip?) Upgrading options are also limited: We've started seeing upgradable laptops, such as the Asus C90S, that let you change a number of components (including the hard drive, RAM, and processor), but you'll never have quite the same control you will over a full-size desktop.

When shopping for a laptop, as with a desktop, always remember to decide which capabilities you need first, then find the system to match. But unlike desktops, you'll also need to factor in size and weight. If you net yourself a desktop replacement with a huge 20-inch screen, you're not going to want to lug it to work every day. A 5-pound thin-and-light might be more suitable, but if you have a gaming habit, your regular doses of 3D titles such as Crysis or World in Conflict will need more than the integrated graphics that the most-totable portables usually offer.

That might not be an issue for long, however. Quad-core laptops are now on the market, and we keep hearing rumblings that nVidia's powerful 8000-series graphics cards will get laptop counterparts, possibly relatively soon. (We were unable to confirm a date at press time.) Even if laptops still won't have the full range of desktop power at their disposal, each passing month brings them closer in ability to their bigger stay-at-home brothers.

MAC TO THE FUTURE

Apple has long prided itself on its computers' usability, a trend that continues today with the newest Macs.

Even many die-hard PC fanatics will admit that Macs tend to be less labyrinthine than their PC counterparts, which can be great for first-time users or the easily frustrated. But many Macs are also considerably less upgradable than PCs: If you want one of those snazzy new iMacs or a compact Mac Mini, you're mostly out of luck moving beyond the configuration you select at checkout at the Apple Store. Other models, like the Mac Pro, offer more future flexibility.

If you decide to go the Mac route, keep a few things in mind:

1. More is more. You'll probably need to shell out a few hundred dollars extra to get a Mac with specs that match a roughly equivalent PC. Also, expect many upgrades, such as additional RAM or a RAID card, to be pricier than on a PC.
2. Less is more. A gigabyte of RAM on the Mac isn't quite the same as on the PC, thanks to the highly efficient Unix-based OS X. The latest version, Leopard, requires only 512MB, so anything above that is gravy. As always, more RAM is always better, but unless you're planning to do heavy-duty video editing, you can get along just fine with just 1GB.
3. Wireless is more. Many all-in-one and entertainment PCs, like the Gateway One and Dell XPS One, come with wireless keyboards and mice. Not on the Mac: You'll have to pay anywhere from $50 to $129 (depending on Mac model) if you want cord-free input.
4. Two isn't necessarily more. One big Mac plus is Boot Camp, an OS X utility that lets you install and run Windows Vista or XP. It adds a lot of software options to the Apple repertoire, but it presents three potential wrinkles. You can only run OS X or Windows at one time—as the software's name implies, you'll need to reboot your computer to change operating systems. Second, you'll have to buy a copy of Windows to install, which could add another $200 or so to your bill. Third, Apple doesn't support installing or using Boot Camp on the Windows side—if you go this route, you're on your own.