



Feeling a bit in over your head on your next desktop purchase? We offer up basic tips for buying a desktop PC that's right for your needs in 2010.

Whether you're looking for a high-performance gaming rig or a humble business machine to type up expense reports, buying a new desktop PC can be one of the most confusing purchases you'll have to make. Between processors, hard drives, memory, and video cards – not to mention choosing what it should look like – computing buying can often seem like an endless set of compromises. In some ways, it is, but finding the middle ground that's right for you and your wallet isn't as tough as you would think. Here's a quick rundown on the basics of every component you'll look for in a new PC, and what you should look for.



Size

Most desktop buyers don't find the physical size of a desktop nearly as important as they do when buying a laptop, but you'll still need to give it some thought. Your most basic choices can be broken down into towers, small-form-factor PCs, net tops, and all-in-ones. Towers vary widely in size and can be considered the most basic choice for most buyers. Although they take up more room, they're also cheap, easy to work on, and have plenty of room for expansion. Dropping down to a small-form-factor PC may be preferable if you want a PC for the living room or somewhere else it will be on display, but you'll sacrifice all of the above factors to some degree, too. Net tops can practically fit in the palm of the hand, but they typically use laptop hardware, limiting expandability to solely what you can plug into external ports. An all-in-one PC looks a bit like an oversized monitor, packing everything into one easily movable unit. Although they're typically clean and easy to set up, they also lack expandability, and since the monitor is tied to the PC, you'll have to buy a new one if you ever upgrade.



Processor

The most important part of your computer can also be one of the most difficult to choose. Between Intel and AMD, models lines including Pentium, Core 2 Duo, Athlon, Sempron, and more, GHz ratings that aren't comparable between companies, things start to look pretty complicated. PCWorld offers one of the most comprehensive guides on the subject, but let's look at just the basics.

For most users, two is the magic number for cores. Two cores will offer excellent multitasking capability, and because they've become a de facto standard for new PCs, they're reasonably affordable, too. Three or four cores will obviously offer more performance – especially for processor-intense applications like video editing – but most users simply won't take advantage of all the extra horsepower.

Clock speeds (ex. 3.2GHz) are still an important indicator of CPU performance, but can only really be compared within similar lines. A 2.0GHz Intel Atom processor is faster than 1.6GHz Intel Atom processor, but not necessarily faster than a 1.8GHz Intel Core 2 Duo. Other factors include front-side bus speed, onboard cache, whether it's a 32- or 64-bit processor, and many more. Check out PCWorld's guide if you really want to understand how they all interact to make up performance.

As with many aspects of PC buying, you generally get what you pay for, so let price be a rough guide to processors when the tangle of naming schemes and specs proves to be a little bit too much, and do research on the individual processor you're considering buying to get a better idea how it will perform with what you intend to use it for.



Memory

With operating systems and software gobbling up more and more memory as time wears on (Outlook alone is gobbling up 125MB on the PC we're writing this on), this is not an area where you want to skimp. The 32-bit version of Windows (whether XP, Vista or Windows 7) can only make use of up to 4GB of RAM, and that's the amount we recommend you look for, considering how inexpensive it typically is.

That said, remember that RAM is easy to install yourself, so you can buy less to begin with and add more if you find performance lacking. Just be sure the configuration your PC comes in will allow you to add more (ordering 2GB on a motherboard with two DIMM slots might get you two 1GB sticks, meaning you'll have to toss one of the old sticks to add more). For a desktop running Windows 7 or Windows Vista, consider 1GB the bare minimum.



Video Card

If you plan to do any gaming outside of five-year-old titles and casual titles like *Plants vs. Zombies*, you're going to need a video card. ATI and Nvidia are the two major players in this space, but dozens of smaller manufacturers (with names like eVGA, Sapphire, XFX, etc.) actually make the cards that use the common ATI and Nvidia reference designs.

The world of video cards changes so rapidly that it's hard to recommend a single card that would still be a relevant choice in six months, but in general, let price be your guide. At the high end, the most expensive cards can easily stack on hundreds of dollars for a sliver of extra performance, while at the bottom end, another \$20 can often make all the difference, making the pricier card a wise investment. In other words, gravitate towards the middle for the best bang to buck. Cards in the \$100 to \$200 price range will typically handle most modern games at reasonable settings, provided you pair them with other appropriate hardware. See our guide to choosing a video card for more details.



Optical Drive

DVD burners have become more or less standard on modern desktops, but Blu-ray drives remain a luxury, and typically, an expensive upgrade. Before opting for one, ask yourself whether you can really take advantage of Blu-ray on the PC. If the display will be anything less than 1080p (1920 x 1080), we consider it a bit excessive, since you won't even be able to appreciate full Blu-ray quality. Also make sure the rest of the hardware will be able to handle decoding Blu-ray (integrated graphics are a no go) and whether you'll really want to watch full-length Blu-ray movies seated at a desktop computer. If you plan to burn Blu-ray discs, make sure you'll actually be able to afford the media, which can still run up to \$5 apiece in small quantities and don't get much cheaper than \$2 a disc in bulk.



Hard Drive

Hard drives boil down to two simple factors: size and speed.

How much space do you need? Consider your current computing habits. If you install every free program you run across on the Web, use your computer as a repository for home videos and pictures, and download lots of music and movies, we would recommend 500GB or more. On the other hand, if you're mostly content with the software that comes on a computer and rarely tread outside streaming Internet content from the likes of YouTube and Hulu (which is the case for many people these days) you can probably get away with much less. We recently used a laptop with an 80GB drive for years without bumping into space issues, but you would be hard pressed to find much less than 160GB on a new computer these days.

Speed is another matter. Traditional hard drives typically spin at speeds between 5400 and 10,000 RPM, with the faster models obviously granting faster access to data. A quick hard drive can improve the time it takes to open a program or boot into Windows, but only marginally. Even most 5400RPM drives typically perform fine for most users, but we recommend 7200RPM if at all possible, and performance users should look into 10,000RPM drives, or solid-state drives, which, while expensive, can go even faster. Check out our guide to solid state drives to find out whether you should consider the investment.



Monitor

Unless you decide to go with a trendy all-in-one PC, you'll need to grab a monitor to use your PC. The most important factors here are size, resolution refresh rate and brightness.

Size should be a no brainer: Bigger is better for most situations, but if you have a limited amount of desktop room, you'll want to think twice and measure dimensions. As size goes up, the same amount of pixels will also look grainier, so you'll need to step up to correspondingly higher resolutions as you go, if you don't want the monitor to look blurry. Pixel density a – measures of pixels per square inch – can be a useful measurement tool here. Wikipedia offers a chart of pixel density for common devices and display sizes.

Refresh rates (measured in milliseconds) will affect how well your monitor deals with fast motion, like you might experience when watching action movies or playing games. Although most modern LCDs will deal with motion just fine, we recommend at least 5ms response time for these applications – the lower the better.

Brightness will play a role in how well you're able to read see a monitor when it's competing with other light sources like the sun and overhead lighting. In general, 250 cd/m² should be considered adequate.

Viewing angle and contrast ratio are also important, but companies have found ways to dramatically distort both specifications, rendering them less useful for comparison.