A LAWYER'S GUIDE FOR BUYING A DESKTOP

If you've shopped for a computer lately, you already know that it can be confusing, particularly if you're looking for a Windows machine (where the options are nearly unlimited). This article explains what to look for, what to avoid, and how to make an informed decision. This article should be helpful regardless of which operating system you prefer. Further, the term "PC," as used herein, refers to both Windows and Mac computers. PC stands for personal computer, meaning a computer designed for use by one person at a time. Although Apple's advertisements seem to declare that its computers are something other than PCs, they are not (all MacBooks and iMacs are PCs).

This article won't help you find the cheapest computer possible. However, if your PC is the primary tool you use to produce work product, then it's probably the last thing you should cut corners on. If that's what you're looking for, there are many compilations of the best "budget" desktop PCs.[1] The following recommendations prioritize power and reliability.

PC configurations and models change constantly, so there's little point identifying a particular model, and less so a configuration, to buy. Instead, here's what to look for in a new desktop, component-by-component, with an explanation of each PC part, so you'll understand what you're buying.

TYPE OF DESKTOP COMPUTERS SUITABLE FOR A LAWYER

You can still buy towers of every size, but many law offices now purchase desktop All-In-Ones ("AIO"). An AIO simply integrates the computer's case (everything that is usually inside a tower) into the monitor. As a result, it takes up a lot less space. For example, all iMacs are AIOs.

The desktop PC you buy should be designed for business users, not "gamers"[2] or home users. For example, Lenovo sells multiple lines of desktop computers. ThinkCentre and ThinkStation machines target business users. On the other hand, IdeaCentre's market is home users, and the Legion line is for gamers.

WHY BUY A DESKTOP INSTEAD OF A LAPTOP

Laptops outsell desktops by a wide margin, but that doesn't mean there's no reason to buy a desktop. They're generally less expensive than comparably-equipped laptops, they're cheaper to repair, you can upgrade them yourself, they have more ports, you can get an optical drive included, and they can be pre-configured to support two or more monitors. Generally, a desktop is the way to go if the person using the PC does not need to use it outside the office.

WHAT TO KNOW ABOUT PROCESSORS

3/5/7/9 DESIGNATION

In a nutshell, an Intel i9 processor is more powerful than an i7; an i7 is more powerful than an i5; and an i5 is more powerful than an i3. With desktops, there are also less powerful Celeron and Pentium processors, although they're underpowered. Finally, there are Xeon processors (aka "X"), which are faster than i3/i5/i7/i9 processors. However, they cost a lot more and are overkill for 95% of legal applications, especially as more work occurs in cloud-based applications.

GENERATIONS

Intel has released 13 "generations" of the 3/5/7/9 processors, so the current release is creatively called "13th gen." If you're buying something new and it doesn't indicate that the processor is 13th generation, make sure you ask.

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[1] See *The 7 Best Budget Desktop PCs in 2023*, by Alan Bradley, February 23, 2023, or *The Best Mini Desktop PCs*, by David Gershgorn, February 1, 2023.
[2] See http://www.dictionary.com/browse/gamer.

You can also tell a processor's generation by looking at the first number following the 3/5/7/9 designation. For example, a configuration that includes an i7-13700 processor is 13th generation. The 13 that begins the five-digit number following the i7 indicates that it's a 13th-generation processor. If that number were 12, it would be 12th generation. Every generation of processors gets a little faster and adds various other benefits. Laptop and desktop processors are developed and released on different schedules. While Intel has released a 13th generation of processors for desktops, on the laptop side, the 12th generation remains top of the line. For the full rundown on what the 13th generation processors provide, see the [Intel press release](#).

If you only use your PC for e-mail, Internet browsing, and light applications like word processing, an i3 would probably be fine. If you're using more demanding applications (such as desktop/server-based case management systems, document management systems, or legal accounting programs), consider at least a 10th-generation i5 or i7. If you have more demanding applications like photo/video editing or speech recognition, you may want to consider moving up to an i9.

GRAPHICS OR DISPLAY ADAPTER

The graphics adapter is the part of a computer that processes the images to be displayed on the screen or monitor. Two basic architectural approaches for a graphics adapter are integrated and discrete. Integrated means "locating a computer's display circuitry in the chipset on the motherboard rather than on a separate plug-in card." Discrete graphics adapters are typically a separate circuit board inside the computer and are more powerful than integrated adapters. Integrated graphics adapters are generally sufficient for legal users since the applications are not demanding from a graphics/video perspective. However, you may want to consider a discrete graphics adapter if any of the following apply to you:

- You want to connect a large external monitor (greater than 27");
- You want to connect to a high-resolution monitor (4K of 3840 x 2160 pixels or 5K of 5120 x 2880 pixels);
- You want to connect to 2 or 3 monitors simultaneously;
- You need to engage in video editing; or
- You run graphics-intensive applications on your computer, like computer-aided-design ("CAD") programs or games.[3]

You can do all the foregoing with integrated video, but the computer's performance may suffer, or the computer's fan may run fast and loud.

Having said all of that, the model of computer you choose may offer you no choice in display adapters. If it's a business computer, it may only provide integrated video. But, as you can see, there's not a huge price jump to get a much more powerful display adapter.

The following is an image of the discrete graphics card option for a Lenovo ThinkCentre:

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[3] Graphics-intensive programs may be required in some practice areas, such as construction, patents, or scientific work. However, as a rule, legal professionals should avoid installing games on work computers. Games, and most personal-oriented software, are less likely to be securely programmed and timely patched. Therefore, they serve as a more likely vector for malware and hacking (see this [LastPass story](#) as an example). For games and personal activities, buy a separate computer.
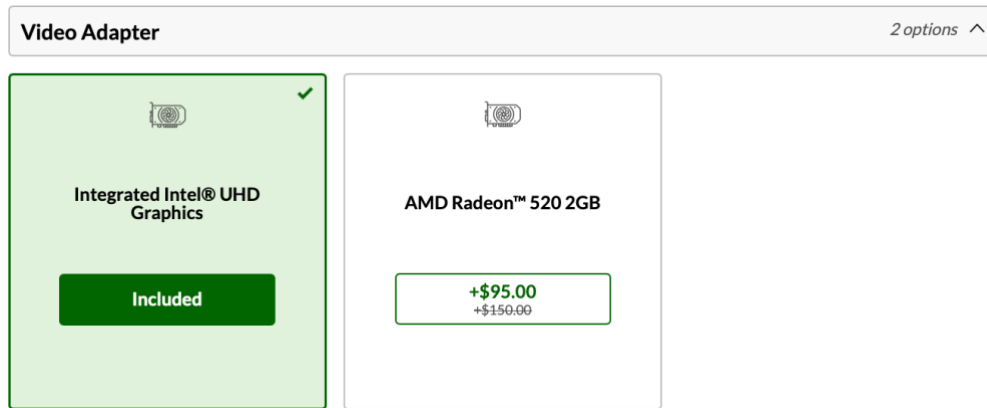
On the Apple Mac side, almost no computers offer discrete graphics. Over the last couple of years, Apple transitioned Macs away from Intel processors and to its own, homemade Apple Silicon processors. All Apple Silicon chips have integrated graphics, although some are even more powerful than discrete graphics availabe on the Intel side. Naturally, the more expensive Mac desktops get better graphics.

MEMORY OR RAM

Get at least 16 GB of RAM for everyday business usage. If possible, get the memory on one memory chip. Most desktops have 2 or 4 memory sockets on board, so if you get all your memory on one chip, you can easily add another later as an upgrade. This ability to add RAM or other components later is a nice feature of desktops that is rapidly disappearing with laptops, particularly as buyers demand thinner and lighter models.

If you're wavering on the amount of RAM to buy now, remember that it's usually an easy DIY project to upgrade your RAM later. Companies like Crucial make it easy to upgrade RAM because their website allows you to determine what type of memory your computer requires, and their prices are very competitive.

HARD DRIVE OPTIONS
TYPES OF DRIVES
There are three kinds of hard drives, mechanical (HDD - Hard Disk Drive), solid-state (SSD - Solid State Drive), and hybrid (SSHD). We strongly recommend SSDs in laptops, but they're not completely necessary in desktops. Here's a good explanation of the differences between HDD and SSD:

> "The traditional spinning hard drive is the basic non-volatile storage on a computer. That is, information on it doesn't "go away" when you turn off the system, unlike data stored in RAM. A hard drive is essentially a metal platter with a magnetic coating that stores your data, whether weather reports from the last century, a high-definition copy of the original Star Wars trilogy, or your digital music collection. A read/write head on an arm (or a set of them) accesses the data while the platters are spinning.
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> An SSD performs the same basic function as a hard drive, but data is instead stored on interconnected flash-memory chips that retain the data even when there's no power flowing through them. These flash chips (often dubbed "NAND") are of a different type than the kind used in USB thumb drives, and are typically faster and more reliable. SSDs are consequently more expensive than USB thumb drives of the same capacities."[4]

Note also that HDDs have a speed rating in terms of RPM. This refers to the speed at which the drive's magnetic platters rotate. The faster they rotate, the faster your computer can access information. Avoid 5,400 rpm drives because they're too slow. Instead, look for a 7,200 rpm drive or faster.

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[4] See *SSD vs. HDD: What's the Difference?*, by Tom Brant, August 26, 2022, *PCMag*.

A hybrid drive combines a tiny SSD with an HDD in the same device. They're far less expensive than SSDs and offer modest performance improvements. Having said that, SSD is the way to go if you want maximum performance. They cost more but can be worth it if you need speed.

SIZE
We recommend a 256 GB or 512 GB SSD for most legal users. The smaller size should be fine if you store almost everything on a server or the cloud. However, larger storage needs might force you to choose an HDD rather than an SSD. Finding high-capacity SSDs used to be more difficult, but higher-end manufacturers, like Lenovo and Apple, offer 1TD or more. Indeed, Apple's 24" iMac can be equipped with an SSD up to 2TB, at a $600 price premium.

SCREEN OPTIONS
MONITOR SIZE
We recommend dual 24" monitors because they're a good deal and can reasonably fit on most desks. My favorite monitor is the Dell P2422HE because it's high quality and will rotate to portrait. I also like a 16:9 aspect ratio. Anything wider than 4:3 is considered widescreen.

RESOLUTION
For most business applications, a monitor resolution of 1920 x 1080 is acceptable (and high definition). But, of course, you can get higher resolutions than that. The 4K TVs you have heard of are 3840 x 2160, and they make monitors supporting that resolution. 5K monitors are also available, although rarer and pricier than either HD or 4k models.

TOUCH
You can buy stand-alone touch monitors, and many AIOs offer it as an option. Even if you don't think you'll use it, there's no reason to avoid one of these. It's handy when reading a document or scrolling down a web page, primarily because we're accustomed to it from phones and tablets. No Apple desktops offer a touch screen, but many Windows competitors do.

OPERATING SYSTEM CONSIDERATIONS
WINDOWS PC
If all your software is certified to work with Windows 11, you should go with Windows 11 Pro (not Home), 64-bit.

MAC
There are no operating system choices to make.

KEYBOARDS AND MICE
The standard options included with a new desktop are usually cheap. However, it's worth spending money on a good keyboard and mouse. Logitech makes some great options. Our favorite keyboard is Logitech MX Mechanical keyboard. Our favorite mouse is the Logitech MX Master Wireless Mouse. If you just want a good keyboard and mouse combo (it's cheaper to buy them together), the Logitech MX Keys S Combo wireless keyboard and mouse combo is hard to beat.

WEBCAMS
Most desktop PCs don't include webcams, although they are becoming standard on AIOs. If you want one, our favorite is the Logitech C930s, which is high-def and works on Windows and Mac.

WARRANTY OPTIONS
RECOMMENDED SYSTEM WARRANTY
Ideally, you want a three-year, next-business day, onsite warranty with 24x7 technical support. If you think you'll use your computer longer, most manufacturers allow you to extend your warranty to 4 or 5 years. However, we recommend cycling out computers every three years, so we don't get a warranty beyond that. Mail-in or carry-in warranties will extend your downtime and likely cause you some waiting and frustration. In our opinion, warranties that require shipping the computer somewhere or taking it to a store are unacceptable.

For example, if you buy a Dell desktop from Amazon.com, they don't offer Dell factory warranties. Instead, they offer third-party warranties, which are, in our experience, vastly inferior to those purchased directly from Dell (like Dell's ProSupport warranties).

TECHNICAL SUPPORT

Seek North American-based support from representatives for whom English is their first language. Nothing is more frustrating than trying to explain a problem to someone you can't understand. It's worth asking the question before you buy the computer - where is the support based? If technical support is offshore and you can't upgrade to something better, you might want to keep looking.

SECURITY ISSUES

ANTIMALWARE AND FIREWALL SOFTWARE

At a minimum, you need antivirus software and a firewall. Broadly, antivirus software keeps malware off your computer and a firewall keeps hackers out. Windows 11 computers have both things built in, but the built-in options (like Windows Defender) typically rank low in antivirus reviews. Macs include a firewall but not an antivirus program, so you should buy one. Some big players for Windows or Mac include Bitdefender (a favorite), McAfee, Kaspersky, Webroot, and Symantec.

FINGERPRINT READER

Fingerprint (biometric) readers allow you to block unauthorized computer users and log in quickly without entering a password. Many manufacturers include free encryption software with your system when selecting this option. This lets you encrypt your computer so it is unusable without a valid fingerprint swipe. This added level of security is well worth the added cost.

HARD DRIVE ENCRYPTION

If you're going to have confidential client information on your desktop PC, then in my professional opinion, you need to encrypt the hard drive. This can be accomplished in several ways. If you have a MacBook, it comes with an encryption program called FileVault.[5] If you have Windows 11 Pro, you have an included encryption program called BitLocker.[6] You can also buy encryption programs for your PC, like SecuriKey Pro for Windows or Mac.[7] Finally, when configuring a new desktop, you may have the option to choose a self-encrypting hard drive.

BUNDLED OFFICE SUITE

If you get Microsoft Office preinstalled on your new computer, the software license typically restricts it to be installed only once and only on the computer it came with. Therefore, more lawyers are choosing to get Microsoft Office as part of a Microsoft 365 bundle. You can transfer those installations of Office from one computer to another, get both the Windows and Mac versions, and install it on up to five PCs and Macs you use.

OPTICAL DRIVE/DVD

If you need one of these, many desktop PCs can be configured to include one. The same cannot be said for laptops.

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[5] See https://support.apple.com/en-us/HT204837 for more information.
[6] See *A Beginner's Guide To BitLocker, Windows' Built-In Encryption Tool*, by Ian Paul, August 1, 2016, *PCWorld*.
[7] See https://shop.securikey.com/Default.asp.