

New PC Specifications

Use these general specifications when shopping for a new PC. They apply equally to desktops and laptops.

Component		Notes
Processor	Intel	<ul style="list-style-type: none"> Look for Intel i-series processors. The i5 is the sweet spot for laptops where you get best performance without spending too much If you are looking at a processor outside the i-series, such as Dual-Core or Quad-Core, look for a processor number greater than 5000 (examples: a 2200 will be too slow, a 7600 will be fast) Avoid Celeron *Notes on processor naming are on 2nd page
	AMD	<ul style="list-style-type: none"> AMD markets their products based on price/performance so most will be fast Avoid Sempron
Operating System		<ul style="list-style-type: none"> Windows 10/11 or Windows 10/11 Pro 64 bit Pro is needed if the computer will be part of a domain or will be running Media Center *Important* Read notes about Windows 10 on 2nd page
Memory		<ul style="list-style-type: none"> 8GB minimum (more is better) Memory refers to system memory and the more you have the faster your system will run (to a point anyway)
Hard Drive		<ul style="list-style-type: none"> Solid State Drives - 500GB minimum (more is better) Conventional Drives – 1TB minimum (more is better) Consider RAID configurations for business or gaming computers *Important* Read notes about hard drives on 2nd page
DVD Drive		<ul style="list-style-type: none"> DVD/RW (single drive) Blu-ray is unnecessary (unless you use Blu-ray discs) Many laptops no longer come with DVD drives. You can buy an external USB drive (they cost around \$30) if you need to play or burn discs.
Graphics		<ul style="list-style-type: none"> Dedicated is better than Integrated Windows 7 and above features a 3D graphical interface. Therefore you need powerful graphics processing to get good performance. It is no longer the case that only gamers need powerful 3D performance. Dedicated graphics boost performance because all graphics functions are handled by a separate graphics processor PCs with dedicated graphics cards or chips will mention Nvidia or ATI graphics
Screen		<ul style="list-style-type: none"> Touch screens are best Look for screens that have glass all the way to the edge. Raised plastic bezels are used on cheaper laptops and affect the ease of use of swiping in from the edges.

New PC Specifications - Notes

Windows 10/11

Windows 10/11 is recommended for all computers whether touch screen or not. Speed and security make Windows 11 preferable to Windows 10. Upgrading from Windows 10 to Windows 11 is free. Make sure software you plan to use is compatible with Windows 11. Touch screen devices are strongly recommended.

Processor Naming Schemes

Each Intel processor has a family name (Core i3, i5, or i7), which denote the processing prowess of each family (i.e. i7 is more powerful and capable of complex work compared with i5 and i3), and a model number that further denotes that CPU's power and placement. Together they let you know that, for example, an Intel Core i7-4770K is more powerful than a Core i5-4570. If a letter follows the model number, that lets you know for which segment a particular processor is designed. Letters used include K (for unlocked enthusiast desktops), S or T (low-powered desktops; think S for "power Saving" and T for "thin chassis" like in all-in-ones), H (quad-core mobile with Iris Pro graphics), M (quad-core mobile with dual-core 2-chip), U (Ultrabook with Iris graphics), and Y (low-power Ultrabook system on chip for detachable hybrids).

Source PC Magazine

Desktop processors are faster than equivalent laptop processors. If comparing specific processors check a benchmarking site such as <http://www.futuremark.com/hardware/cpu>.

Hard Drives

There are 3 types of hard drives being used in PCs now.

1. **Solid State Drives (SSDs)**

SSDs are up to ten times faster than conventional drives, use less power, and have no moving parts. The disadvantage is that they are expensive and therefore don't have the same capacity of a conventional hard drive. Typical capacities range from 128GB to 500GB. Be sure to back up files regularly – when SSDs fail there is little chance of recovery.

2. **Conventional Drives**

Conventional drives are ideal for applications that require lots of storage such as photos, music, and video. They are inexpensive and typically come in capacities from 1TB to 2 TB.

3. **Hybrid and Dual Drives**

Hybrids combine the best features of SSDs and conventional drives. A small SSD is used to store the operating system while a conventional drive is used to store programs and data. Dual drives have a smaller SSD and a large traditional drive. System folders like Documents, Pictures, etc. should be located on the larger drive.

Consider RAID hard drive configurations for business or gaming computers

- RAID 0 uses 2 hard drives to boost performance usually for gaming or video editing. If either drive fails, you lose everything.
- RAID 1 uses 2 drives as mirror images and protects against a single drive failure. If one drive fails the other kicks in.

New PC Specifications – PC vs Mac

The choice of PC versus Mac is a personal one and can involve religious-like devotion. Both are good machines. There are many factors to consider that can make the decision easier.

Compatibility

PCs account for close to 85% of the computers in the world. That means there are more choices of manufacturers, more software, more hardware accessories, they are cheaper, come to market faster, and are easier to have serviced. With a Windows PC you don't have to worry about compatibility issues with Office, Flash or Active X.

What Will the Computer Be Used For?

Think about what you use the computer for. Most people will say

- Internet
- Email
- Office Applications (Word, Excel, etc.)
- Finance (Quicken or Quickbooks)
- Social Networks (Facebook, etc.)

These are not just similar on PC and Mac they are identical on both PC and Mac. This accounts for about 95% of what most people will use the computer for.

Security

Macs have fewer problems with viruses and malware. It is not that Macs are more secure but rather it is a matter of opportunity. As mentioned above PCs have a much larger market share than Macs so crooks target the larger potential market. With the right security software PCs are protected against malicious software. Macs should also be protected with good security software.

Hardware

Macs and PCs share the same internal parts – Intel processors, Western Digital hard drives, etc. Macs do not last longer than PCs, nor have fewer hardware problems. The genius of Apple marketing is that they get people to pay a premium price and encourage them to purchase new computers every 2 years.

Touch Screen

Apple pioneered touch screen computing with the iPad and iPhone but have shown no interest in adding that capability to their computers. Windows 10 was designed for touch screens and has some of the most advanced features for multi-window and multitasking ever. If you want a touchscreen computer, a PC is your only choice.

Market Share

Talk to an Apple owner and you might get the idea that everyone is switching to Macs. Actually Apple is now more of a phone and tablet company. Though their computer market share is growing it remains a small fraction of the PC market.

Cost

Macs are available from one source – Apple. Because of the lack of competition they are not competitive pricewise. You can typically buy a more powerful PC for significantly less money. Does the 5% difference in features justify the higher price?