Instructions for buying tabletop machines: Explain technical details

In this article, I will show you how to identify the technical details and key components before proceeding to purchase a desktop computer.

In this article we will show you how to identify the technical details and key components before proceeding to purchase a desktop computer.

Once you have identified the type of desktop computer you want to buy - can be compact (compact), budget (economic), mainstream (mainstream computer) or high-performance computers - you need to know what components you need need to search. The processor, the graphics chip you choose will determine the power of your computer, and the system memory and hard drive will also contribute a lot. Understanding these components will help you get the performance you need without spending money on things that aren't worth it. In addition, you also need to know the details of the case (or layout) of the case, which are also quite necessary things that you need to know before purchasing.

Processor (CPU)

CPU is one of the most important components of a computer. The processor will determine the size and shape of the computer as well as decide on its cost. In general, the higher the CPU clock rate, the greater the performance - and of course the high cost. The 3.46GHz Core i5-670 system defeats the 2.93GHz Core i3-530 system, but needs to pay almost twice the cost to get that speed. Another technical detail to consider here is the size of the cache: It can be said ' *as much as possible* ', where Core i3 and Core i5 all have 4MB of cache, of which high-performance Core i7 chips have 6MB or 8MB cache.

Compact computers and some all-in-one computers use fairly weak processors specifically for netbooks or notebooks. However, even with a low level of performance compared to other desktop processors, these computers have the advantage of generating less heat, a feature that makes this computer different from others. Others. A computer packed with an Atom processor will work better with tasks related to word processing or web surfing, but it still has some limitations for entertainment (media playback).

The new Clarkdale line for Intel's Core i3 and Core i5 desktop processors often appears in budget and mainstream systems. Most users will be satisfied with these processors because they provide dual-core performance levels and affordable prices. The remaining Core i3 chips are cheaper, the models also consume less power, so their prices are also lower.

Quad-core Core i7 chips (quad-core) target users who want a really powerful processor. If you are a player with games that require high graphics or video, audio, you will surely have a lot of advantages from Core i7. The lowest-level Core i3 CPU can also easily handle basic computing tasks and be within acceptable price ranges. The dual-core Pentium and Celeron processors are the lowest cost processors. These chips appear in budget computers, starting at $ 400.

Desktop computers often use Intel or AMD processors. In which Intel demonstrates superior performance compared to AMD, AMD also has quite flexible rates for dual-core and quad-core chips. If you're looking for a budget computer with a quad-core chip, then AMD's choices are worth your attention.

Graphics card

The GPU (graphics processing unit) is responsible for everything you see on the screen, whether playing games, watching videos or watching anything on the screen you see.

If you're not interested in playing computer games, you can choose for yourself a computer with an integrated graphics chip on the motherboard - or in the CPU itself like the Clarkdale Core i3 and Core i5 series chips. The integrated graphics chip was created to reduce the cost of the system, but they still allow the machine to have enough power to run simple games or watch high-definition Flash videos. Intel's integrated graphics chips are

the most widely used, but some computers using nVidia Ion graphics chips still have good graphics performance. If you plan to render high-definition video content or play games like BioShock 2, then you need a discrete graphics card. Discrete graphics cards are usually plugged in the PCIe x16 slot on the motherboard and provide significantly higher performance than integrated graphics chips. Both ATI and nVidia offer plenty of options for users. There is quite a lot of information, but the basic rule is that the higher the number, the higher the performance and the higher the cost. Variables like power consumption, size and type of motherboard (which can limit which graphics card you can use) will help you decide which GPU is right for you.

Professional gamers can choose multiple graphics card systems using nVidia's ATI or SLI CrossFire technology. Both of these options offer quite a large level of performance. However, you have to pay extra to get that performance: The price for these advanced graphics cards usually ranges from $ 200 to $ 400.

Memory

If using a computer for web browsing or email (with Windows XP or Windows 7 operating system), 2GB of RAM is enough for your needs now. And one thing is certain, the more RAM you have, the more programs you can run simultaneously and improve the speed and performance of your computer. Today's systems often have at least 4GB of RAM, though some small computers or some budget systems are sometimes limited to 2GB or 3GB of RAM.

If you want to run multiple tasks simultaneously or play games, then choose for yourself a system with at least 4GB of RAM. In case you need to edit photos or create high-resolution video, you need high-performance systems with lots of RAM capacity up to 8GB or 16GB.
When you go to the store to buy RAM, you need to consider two types of RAM: DDR2 and DDR3. In these two types, DDR3 has a faster access speed and is therefore more expensive. In addition to the clock rate, like

microprocessors, clock speeds are expressed in MHz. And of course, the higher the number of MHz, the better.

If you want to buy more than 4GB of RAM, your system needs to have Microsoft Windows 7 64-bit operating system installed; The reason is that the 32-bit operating system only receives less than 3GB of RAM (regardless of RAM type).

If you want to upgrade your computer yourself, see if the system's motherboard supports RAM modules. Check the computer's specifications to see how many DIMM connectors; This information can be found in the system's technical details page.

Case

A good case can make your everyday work easy and can simplify tasks such as upgrading and maintaining components at work. Well-designed computer case will allow easy access inside without using auxiliary tools, hard drives are mounted on the sliding in / out easily, USB ports are available. Wait to facilitate easy access, in addition to RAM slots, color-coded cables for internal and external components, etc.

The most common for the case is the minitower and tower designs using ATX. ATX specifications will determine where to locate the connectors on the back of the motherboard (holes are pre-opaque in the case) as well as other details such as power supply section.
Smaller systems can use the Micro-ATX case, which still has ATX specifications but has fewer expansion slots. The Mini-ITX case is smaller in size; Mini-ITX boards often appear in small computers, which are quite static and low performance computers (great choice for computers located in the family music room).

If you want to buy a minitower or tower system, you have the flexibility to configure it, you can use it all or leave some slots to spare for the future. A minimum of two hard drive slots and an empty PCI slot should be reserved. And one more thing is that the motherboard has many different sizes and shapes so the case design also has many different types, so you need to choose the best fit.

Operating system

Already 10 years old, Windows XP is still very useful - even on some new systems. However, most systems in the day-to-day market use Windows 7. This latest Microsoft operating system has received very positive reviews and has a lot of improvements compared to its predecessor Windows Vista.

Microsoft sold six different versions of Windows 7, but only three - Windows 7 Home Premium, Windows 7 Professional and Windows 7 Ultimate - are pre-installed for most people who buy desktops. Windows 7 Home Premium, the Aero Glass user interface, adds some Windows Media Center improvements. The Advanced user group can use Windows 7 Professional version, which costs about $ 75 to $ 100 for each installation; Windows 7 Professional offers a number of improved security and printing features that are suitable for many business users. Windows 7 Ultimate - costing about $ 150 - is a good choice for users who really have advanced requirements or in businesses. In this version, users will have rich networking and encryption tools. You can consult the list of operating system features before choosing which operating system is right for you here.

Edition comparison

Cost & Features / Availability	Starter	Home Basic	Home Premium	Professional	Enterprise	Ultimate
	OEM licensing	Emerging markets	Retail and OEM licensing		Volume licensing	Retail and OEM licensing
32-bit and 64-bit versions	32-bit only	Both	Both	Both	Both	Both
Maximum physical memory (64-bit mode)[22]	N/A	8 GB	16 GB	192 GB	192 GB	192 GB
Home Group (create and join)	Join only	Join only	Yes	Yes	Yes	Yes
Multiple monitors	No	Yes	Yes	Yes	Yes	Yes
Fast user switching	No	Yes	Yes	Yes	Yes	Yes
Desktop Wallpaper Changeable	No	Yes	Yes	Yes	Yes	Yes
Desktop Window Manager	No	Yes	Yes	Yes	Yes	Yes
Windows Mobility Center	No	Yes	Yes	Yes	Yes	Yes
Windows Aero	No	Partial	Yes	Yes	Yes	Yes
Multi-Touch	No	No	Yes	Yes	Yes	Yes
Premium Games Included	No	No	Yes	Yes	Yes	Yes
Windows Media Center	No	No	Yes	Yes	Yes	Yes
Windows Media Player Remote Media Experience[23]	No	No	Yes	Yes	Yes	Yes
Backup and Restore Center[24]	Manual to local HDD or DVD only	Manual to local HDD or DVD only	Manual to local HDD or DVD only	Yes	Yes	Yes
Encrypting File System	No	No	No	Yes	Yes	Yes
Location Aware Printing	No	No	No	Yes	Yes	Yes
Remote Desktop Host	No	No	No	Yes	Yes	Yes
Presentation Mode	No	No	No	Yes	Yes	Yes
Windows Server domain	No	No	No	Yes	Yes	Yes
Windows XP Mode[25]	No	No	No	Yes	Yes	Yes
AppLocker	No	No	No	No	Yes	Yes
BitLocker Drive Encryption	No	No	No	No	Yes	Yes
BranchCache Distributed Cache	No	No	No	No	Yes	Yes
DirectAccess	No	No	No	No	Yes	Yes
Subsystem for Unix-based Applications	No	No	No	No	Yes	Yes
Multilingual User Interface Pack	No	No	No	No	Yes	Yes
Virtual Hard Disk Booting	No	No	No	No	Yes	Yes

Next, if you are going to use a 32-bit operating system, remember that at this time your computer can only use up to 3GB of RAM, no matter how advanced your system components are. well. In this case, you need to choose for yourself a 64-bit operating system, at which point you will feel completely comfortable upgrading the machine later.

Hard Drive

To get a reasonable capacity, you should choose a hard drive of about 320GB (however, it still depends on your purpose and budget). Small computers often have a hard drive capacity of about 160GB. For performance computers, the state-of-the-art configuration of this model can give you up to 2TB of hard drive capacity, along with RAID options for data storage (RAID 1) or optimization. Speed ??(RAID 0), or optionally combine SSD with an HD.

When buying a computer, you need to check its technical details to see how many 2.5-inch hard drive slots your system has inside the case. Many small computers and all-in-one computers limit you to one slot. When adding internal hard drives, you can store additional data, create RAID arrays to secure data during times of hardware failure.
Most hard drives today come with Serial ATA-300 models, with rotation speeds of up to 7200 rpm (rpm). When buying, you need to consider this number: Small computers usually use 2.5-inch hard drives at 5400 rpm. Although with these hard drives you can save a little bit of cost but on the contrary have to bear the performance when doing a lot of tasks on the hard disk. For those who really care about hard drive speeds rather than capacity, Western Digital's VelociRaptor line of drives can provide hard drives with speeds up to 10,000 rpm, but the maximum capacity is only about 300GB.

Another option for buyers who prefer speed drives is SSD (solid state drive). The price for these hard drives is quite high compared to traditional hard drives, but you will definitely get the performance you want. Some computer manufacturers use SSD as a boot drive and the back is the usual hard stock. The SSD is then used to store applications and operating systems, and the HDD is used to store data and installation files.

Network connections

The timing of dial-up connections is over, instead high-speed broadband connections provided by network service providers. However, you can still maximize your computer connection by choosing the right connection options. These options are quite obvious: running wired or wireless.

Systems with wired Ethernet connections often have larger bandwidth than systems that use wireless connectivity. But wireless connectivity is an attractive option for small computers, all-in-one systems and some tower and minitower systems. If you don't like to tie the cord to your computer with an ethernet network cable, you can choose a wireless solution and use the 802.11n standard; This is the latest wireless standard and offers better performance than older 802.11b / g standards.

However, at any point, the performance of wireless systems still has certain limitations. So if you plan to use computers to download high-definition Internet content from sites like Hulu and Netflix, use wired connections to get the best performance.

Keyboard and mouse

Keyboards and mice are quite important devices, so choose which devices are suitable for your work and preferences. If you buy a computer online, consider what the company suggests: You can choose the device that suits you better by going to the computer stores nearby, then ordering one. sure way.

Most of the physical properties of the keyboard and mouse depend entirely on the feeling of each person, so you need to pay attention to where and how you use the computer. Each system has at least one set of keyboards and mice, but you can make your own alternatives for replacement or addition.
If you need to use a small computer to stream media, you can choose a wireless, lightweight keyboard and mouse, or a wireless keyboard set with a mouse, which can help you work from private companies. that's not comfortable.

When shopping, consider the media keys on the keyboard. The keyboards have function keys that help to listen to music or watch videos and will be very convenient to use.

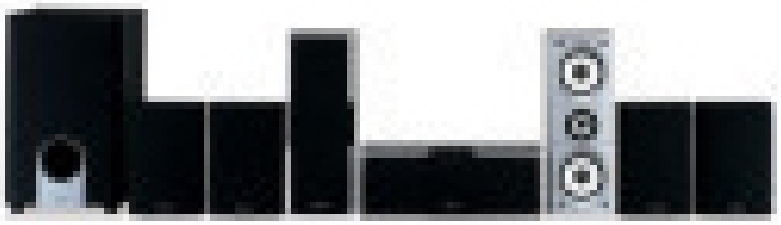
If you plan to buy tower computers, now you definitely need to prepare yourself a fairly spacious space to be able to place the mouse and keyboard. If you're a fan of games, then choose the keyboard and mouse of companies like Razer and Logitech. These are the companies that provide quite a lot of features that can help you improve gaming performance.

External drive

Today, there are a lot of choices about external drive technology. The original CD ROM drives in the past seem to be out of date, instead you need to have devices that can read and add DVD or Blu-ray recording. These are devices that allow you to burn your data on high-capacity discs and watch movies from DVDs and Blu-ray discs. HP and other companies have launched many portable media drives, ranging from $ 100 to $ 250. These hard drive models can use a USB cable connection, but are designed to fit into the slot of the CD-ROM drive in desktop models. These portable hard drives are very suitable for those who want to protect data, avoid losses from hard drive errors and can accommodate a lot of content.

Sound

The built-in audio system on today's motherboards supports standard 5.1. This system can meet the requirements of those who do not want to spend a lot of money on sound systems for computers. However, a dedicated sound card will greatly improve the sound quality, add rich environmental effects to the game, allowing improved performance when recording and mixing audio.



Most computers on budget level have integrated 7.1 audio system motherboard. If you want to buy a computer

with an integrated graphics card, look for models with graphics processors, which also offer an HD 7.1 audio system.

Sound cards can increase the starting price of a computer from $ 40 to $ 80, depending on the technology it uses. Advanced cards can cost up to $ 200, but these cards are usually targeted at gamers and audio experts, who need 3D effects to increase avoidance. for their games and programs.

If you want to choose a sound card, make sure your motherboard has a PCI slot or PCI-Express slot, depending on the requirements of the card you have chosen. The manufacturer's specifications for the machine or motherboard you purchase will list the slots it provides.

As with all upgrade options, compare stores before you park in a sound card or speaker set. You can find better options somewhere. In addition, if you buy a sound card yourself, you need to open your system and install the card.

The speaker is completely personal and depends on the physical size of your room. These problems can cause certain limitations. Ordinary computers have similar audio outputs, but there are also some models with optical connections and allow to reduce the number of cables to connect.

Many all-in-one computers have speaker mounts attached to the screen. The sound emitted from the speakers placed here depends on the model, the quality is generally akin to the sound on laptops, but you can get more depth and richness from expensive models. more money. If not important about sound quality, this system can satisfy you, these included speakers have the card to meet the sound quality of the HDTV system. However, if you plan to use your all-in-one as a dedicated music player, you can choose dedicated speaker systems that support subwoofer.