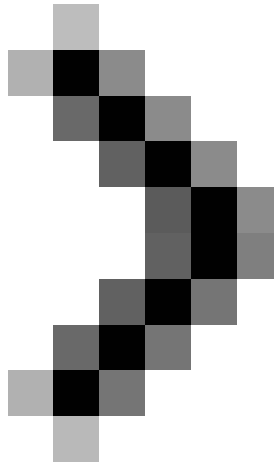


Select network device hardware (Part 2)

For businesses and families with computer enthusiasts, networking is a very common thing.

Small home or office networks make it easier to print and share files and Internet phone calls. However, choosing the right products is an issue to consider. In this article we will introduce you to the best choice for your budget.

For businesses and families with computer enthusiasts, networking is a very common thing. Computers are not unique in every home and small office they need to be connected to: Today, printers, Voice-over-IP (VoIP) phones, game consoles, media centers and other devices require an Internet connection. So why not make them shared by a broadband connection?



Select network device hardware (Part 1)

Network components

Regardless of the type of network you use, you only need one network adapter or client for each device; Most laptops today have both ethernet and Wi-Fi adapters, but desktop systems may not have Wi-Fi adapters. However, if you want a power-line network, buy an adapter that can plug into the ethernet port of the system and plug the other end into a wall outlet.



You also need a router so they can route data streams between computers on the network and between networks and Internet connections.

If you have a wireless network installed, you need to have a router that supports a wireless access point, or if you already have a router, you need to connect it to your own wireless access point. Wireless access points connect networks with wired access points (like your Internet connection). The access point communicates with the Wi-Fi adapter, sends and receives data by radio signals to and from the wired network, and then the Internet. All wireless networks have an adapter that connects to an access point, most wireless home gateways have access points attached.

Power-line networks also require a router. Typically, the initial power-line network will have two power-line-to-ethernet adapters: one to plug in the ethernet port on your router and one to plug in the ethernet port on the client device.

main function

Network type : Wireless networks won't make you messy and they're especially convenient for notebook users who don't want to be confined in a physical location. Most laptops today support at least 802.11b Wi-Fi adapters and g. Some have support for 802.11a and some design schemes for 802.11n, at least on the 2.4-GHz band. (Some laptops now integrate broadband wireless adapters, which allow you to connect to the Internet through the cellular network's broadband network.

However, bandwidth restrictions can make wireless networks impractical in many areas of space that are too large, in a building with many obstructions such as doors and walls. Plus, wireless networks have inherent security disadvantages.

If these problems do not meet your requirements, choose a wired network solution. Ethernet maintains the most secure networking technology, but you must connect all network components with a cable and install cables in difficult locations.

What if you want to connect multiple devices - for example, a wirelessly supported laptop and can media center benefit from a wireless connection? Creating a hybrid network is not too difficult. You can buy an 802.11n router to connect wirelessly to a notebook, and plug your adapters into your router and media center to get better multi-threaded communication capabilities.

Speed ??and scope : If you plan to use your network primarily for sharing broadband Internet access, then the speed limit of your network connection technology will not be so important: Even mediocre 802.11b releases also exceed the peak speed (1 to 6 mbps) of cable or DSL service in most regions. However, if you plan to use multimedia streaming or transferring large files between computers and other connected devices, you need to appreciate the difference between fast and slow networks.

Today's 10/100-mbps ethernet networks are the fastest, widely used networks, but gigabit ethernet networks are becoming more popular. Power-line products based on HomePlug AV, Digital Home Standard or HD PLC technology are not as fast as ethernet, but they are reliable and generally maintain better speeds on a much wider range than What wireless networks can support.

The fastest wireless products are all based on the design scheme of the upcoming 802.11n standard - ensuring compatibility with Wi-Fi Alliance compatibility. Prices for devices of design scheme 2 are going down last year, though some 802.11b and g products are still available. With the best and fastest coverage, you should look for 802.11n products with up to 3 antennas to receive and transmit; they will cost more than other models with 2 antennas because they will give you better coverage.

If money is a problem for you then the speed and range will have limitations (in a smaller studio for example), you can choose to buy some older 802.11g products with lower prices. There are also 802.11b Wi-Fi (11 mbps maximum) and HomePlug 1.0 (14 mbps maximum) products; Remember that for any of these devices, you only get about half the actual throughput of the theoretical maximum. Anyway, most companies don't create products based on this original technology.

You need to be mindful of the speed with wireless networks because it will drop quite quickly when the distance from the access point increases or is obscured by doors, walls or metal materials and ceiling interference. home. Although many Wi-Fi carriers claim the range in their product can be up to 100m, you should not calculate the range of connectivity beyond 30 to 40m for Wi-Fi 802.11b or g in an office. certain, and sometimes even worse, at home, which depends on the arrangement (potential obstacles) in the environment. The range of pre-n and draft-n networks will give you a wider range of ways to tell.

You can use range extenders to improve the signal strength of the wireless access point and increase the distance you can connect to the wireless network. Expansion kits cost approximately \$ 60 and some products cost more, they appear to your wireless adapter as a separate network.

Security : Since intruders don't have to plug in a network cable into a physical port and still have direct access to the wireless network, such networks generally have vulnerabilities to attack. The designers have designed encryption algorithms built according to the 802.11x specifications and called Wired Equivalent Privacy (WEP) to provide an equivalent level of protection as a physical shield in one. wired network. However, encryption experts have shown that WEP still has vulnerabilities to attack.

Most of the Wi-Fi products introduced in recent years support improved encryption schemes, called Wi-Fi Protected Access, or WPA, all 802.11 products. n all support the IEEE 802.11i standard more rigorously (more effectively, because it is hardware based) and is known as WPA2. However, the security of Wi-Fi networks is only as strong as the weakest mechanism that all network devices support, so if you use older products that only support WEP, then all Online components will have vulnerabilities to attack through WEP's weaknesses.

If you're stuck with a device that only supports WEP security, you can improve your weaknesses by purchasing network adapters that support 128-bit encryption (for 40-bit encryption with cards) basic wire). However, if your security is critical, consider some additional issues such as using a virtual private network (VPN) and a solid firewall whether your network is wired or not. cord. In addition, you should also pay attention to upgrading to get newer and faster devices that support WPA2.

Hardware support : Not all network component types are available for each network technology. For example, if you want to share a broadband connection account on a wireless network, you can find some Wi-Fi routers that incorporate the components you need - basically an access point. for wireless connections and a router to manage network traffic. (Most wireless routers provide some wired ethernet ports.)

Wi-Fi devices require more sophistication in finding the format you want. Locate PC Card adapters for laptops in all sympathetic Wi-Fi products that are easily used; however, for many notebooks that are currently running Wi-Fi attached, some manufacturers are ignoring sympathetic cards for USB adapters. Some carriers also offer PCI Wi-Fi adapters for desktop computers.

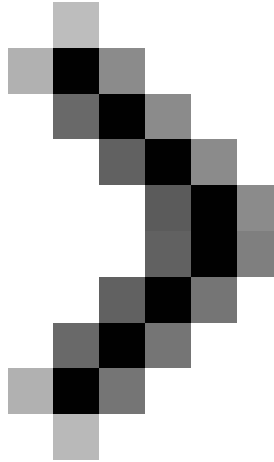
Firewall feature : If you use a router or gateway to connect to your network with the Internet, an attached firewall is required to avoid unauthorized intruders. However, the ability to configure such firewalls varies widely. Some make it easy for authorized applications to be able to connect directly to computers on your network, which is useful for some online mail and video applications. If you have a static IP address, some gateways will help you set up a Web server. Some provide 'father' controls, allowing you to block access to some websites by URL or even by certain keywords. In addition to turning on the router's hardware firewall, you need to install a software firewall so that it can protect you against Trojan horses and other malicious software.

Explain the specifications

Some types of network technologies primarily compete for your money and time investments. They are divided into two main categories: they are for wired networks and for wireless.

The ranking of wired networks is the first to mention network technology: reliable ethernet. Such connections will create the fastest, safest and cheapest network (at least for independent components). But installing this technology requires the use of special cables, so the cost is expensive - and can cause aesthetics.

For wireless networks, the majority of buyers will choose draft 2-based devices of the fast 802.11n standard. The router has a wide range of features and prices. The main difference is the support of gigabit ethernet, some receiving and transmitting antennas, and supporting radio band (mostly 2.4 GHz, also can be both 2.4GHz and 5 GHz supported).



Select network device hardware (Part 3)

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