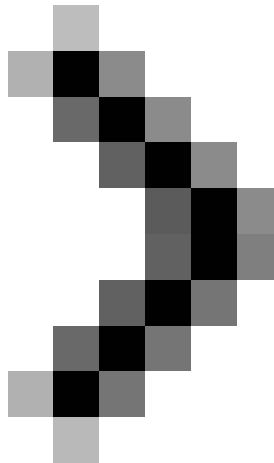


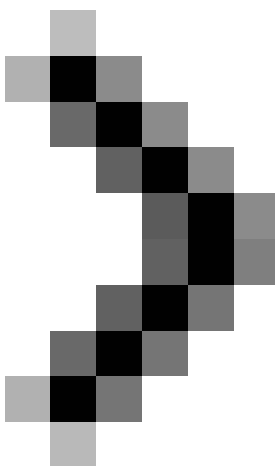
## Select network device hardware (Part 3)

Small home or office networks make it easier to print and share files and Internet phone calls.

**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)



## Select network device hardware (Part 2)

### Speed ??test

All networks are fast enough for sharing Internet access and printers. However, if you want to transfer large amounts of data to backup to a network-connected hard drive or file server, consider one of the faster wireless or wired technologies. Wi-Fi Draft-n networks and pre-n networks can transfer data at speeds between 30 and 50mbps, or even faster if near, but it will drop dramatically when the distance between the network device and the router increases, especially if there are obstacles such as the barrier walls.

The latest power-line devices can transmit data at a speed comparable to the fastest Wi-Fi networks, they maintain those speeds at a distance. In the test to test when these power-line products first appeared, simple file transfers achieved the fastest speeds of 42 mbps — with Netgear products based on DS2 technology, nearly the same speed. actually ethernet is 52 mbps. However, HomePlug AV has allowed significantly better with high-resolution video streams, especially on circuits with other electronic devices. Newer power-line products are released later this year, we will give information about changes in test results because the basic standards have been changed, so there are absolutely no predictions. together.

### Estimated speed

Estimated speed is the largest theoretical speed of the network under ideal conditions. It can be useful in comparing the performance-related capabilities of other network technologies, and the speed tested will much better indicate the net performance of the network.

### Security

Ethernet is the safest method of network connection. Because offices and families can have pre-installed power systems, it is still possible to have someone on the network access your HomePlug network especially if you do not change the default settings. designation of the device. With HomePlug AV, new products are expected to make setup adjustments easier, by eliminating the need to implement through workstation software.

Wi-Fi networks have the most vulnerabilities because they do not require a physical connection when accessing. Basic WEP encryption in all Wi-Fi devices can be easily penetrated. However, if all of your network devices can support WPA2 or WPA security more efficiently and more recently, your network is also more secure.

### **Cost of network adapter**

For about \$ 25-60, ethernet adapters are generally cheaper than Wi-Fi adapters (\$ 25 to \$ 70 for 802.11b, \$ 40 to \$ 100 for 802.11g, \$ 70 to \$ 120 for pre-n and draft-n). . However, the ethernet network also requires you to connect the cable to all devices. If your home or office has not run the cable before, it is necessary to pay attention to the costs of installing the cable, which is also costly.

### **Bridge cost and access point / router**

Routers transmit traffic directly between networks - for example, between devices on your home network and the Internet. Routers used in your home network typically have a wide area network port that can connect to a DSL cable or modem, and an ethernet switch with some LAN ports to connect ethernet to computers and printers. or other network devices. You can buy one of the routers that cost about \$ 30 to \$ 70.

Wi-Fi routers often include wireless access points so that Wi-Fi devices can connect to the LAN. You can buy an 802.11n router for about \$ 70 (these are two-antenna routers and don't support gigabit ethernet), or it can cost between \$ 200 and \$ 220 to get dual-band routers. No company provides routers for newer power-line technologies; To set up a power-line network, simply plug the power-line adapter into the available LAN port on the standard router. In fact you can use a Wi-Fi router with an ethernet switch to support Wi-Fi, ethernet and power-line connected devices.

### **Multimedia optimization features**

Almost everyone initially installs a home network to only share Internet access, printers, and files, and the latter applications require networking in multimedia capabilities. With the growing number of video recorders and living room computers that support network connectivity, you can access content within them on other network devices - like watching a recorded video on the DVR of the living room on the HDTV in the bedroom. However, to do that, your network needs to have a relatively good bandwidth to support streaming media; it also needs technologies to optimize data packets to ensure smooth playback capabilities.

There is indeed a Wi-Fi standard that can be done, which is known as 802.11e. However, not all Wi-Fi devices support it and Wi-Fi has its own problems with playback media if you live in a densely populated city with lots of Wi-Fi networks. Fi side by side. If multimedia playback is important to you, you should investigate network technology support for this feature and consider using wired networking technology if possible.

### **Tips for general networking**

***Plan your network on paper*** : Draw the number of computers and other devices you plan for your network, which room to put the device on, and how far the distance is. Estimate how to run the cable between devices. See

if rooms have an electrical outlet or ethernet port near the device. Consider some other rooms where you may want to add network connections later, such as a corporate meeting room or a living room at home. Planning this will help you decide which technology will best suit you now and in the future.

***Try with both networks*** : If the components of other networks appeal to you - for example, you like the speed and security of your wired network but prefer the flexibility with your laptop - consider a Hybrid methods have both wireless and wireless systems in them. Many wireless gateways (the general term for a router that connects your network to the outside world) include a wireless access point and one or more ethernet ports to connect to a wired network.

***Buying a network can meet the increase in number of rooms*** : Your network needs may increase as new applications (such as connecting to home entertainment devices) appear. Look for devices that allow you to add devices or network types. If you decide to buy a gateway, choose a gateway with multiple LAN ethernet ports - plus a WAN port to connect to your broadband model. This will allow you to create a hybrid network that can connect computers or devices whether wired or wireless.

If you prefer to provide network access to the printer without connecting it to a computer, look for a gateway with a print server attached (you connect the printer to a USB or parallel port on the gateway, or to ethernet port if the printer has a network card). Some routers also support multi-function printers, allowing you to copy, scan and fax and print on the network. Some have ports that support USB drives.

### **Tips for wireless networks**

The inexpensive 802.11n draft device is now widely available in the market, so you have a good reason to replace the older device to improve the speed and range of the network. When you choose a product, check the information on its website to get software upgrades to optimize performance and (if it's not Wi-Fi Alliance). received) guaranteed to be appropriate with the standard.

If you are missing some services, invest in a dual-mode router and adapters that support draft-n operations on the 5-GHz band, in this band, the overlay will be reduced. compared to the 2.4-GHz band of 802.11b and g standards.

Finally you should consider the necessary distance. The transmission of wireless networks is limited to about 40m, in addition to restrictions on doors and other obstructions such as walls . however, you will get improved distance if you switch from an 802.11b or g network. to network based on faster and newer wireless technologies. Wireless range extenders can also double the range of networks you are using; Their price is about \$ 70.

### **Tips for wired networks**

If you don't mind running wires, use ethernet. It's fast and safe and also cheap. Run the cable according to the wall and make people least visible. If you are building a new home network, the relatively low cost of the parts and the ease of installation in an incomplete wall will also be the components that you should consider for ethernet networks.

If you don't want to run new wires, use the power-line network; With this network you will not have to install cables and install new network ports on your wall. However, make sure all devices are based on the same power-line technology.

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