

Cutting the cord

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If you own more than one computer, odds are at one time or another you've wanted to hook them together to facilitate file transfer and generally make them cooperate. But the prospect of tearing out walls and snaking cable hither and yon has stopped many a budding network guru in her tracks. Wireless technology removed the need for tangled webs of wires, but was a cost-prohibitive option for years.

But as home wireless (or Wi-Fi) networks have gotten cheaper and easier to set up, quite naturally, they've gotten more popular. As a result of that downward price pressure, more than a third of households with more than one computer have them networked, and more than half of those have gone wireless.

Primitive wireless networks were being kicked around as long ago as World War II (trivia: A rudimentary network was patented by actress Hedy Lamarr), but it's only very recently that they've found their way to the consumer level. When the IEEE's 802.11b (wireless-B) standard was ratified in 1999, just a base station and a wireless client card would have set you back almost \$1,500. Now, those same two items can be had for less than \$100.

"Anyone who owns a laptop and has an always-on Internet connection should make the switch to wireless," maintains Charlie Melidosian, head of the IT department for Chicago-based residential real estate brokerage Baird & Warner. "Even a homeowner who wants the convenience of locating their desktop computer in a remote location should switch to wireless. Today's wireless equipment prices no longer make it a luxury."

More and more homes have always-on Internet service (such as cable or DSL), and this type of service is necessary for a wireless network if you want to share your Internet connection. With that level of Internet service as a given, you may find that with a few hundred dollars and part of a free afternoon, you've gone wireless before you know it.

"Basically, for the price of one expensive dinner, you can set up a wireless router and buy a couple of wireless network cards," says Jon C. Piot of Dallas-based Impact Innovations Group. "I've done this multiple times and it takes about four hours including shopping, unpacking, installing, and configuring."

Learn the route

The first thing you'll need is a wireless router, a device that distributes data packets from PC to PC in a wireless local-area network (WLAN). Most network routers currently available include an integrated wireless access point (WAP). These combo units are often called base stations. If you already have a wired network, you can get a dedicated WAP device to add to your existing network; just use an Ethernet cable to plug in the device to one of the LAN ports on your router. Most WAPs are plug-and-play, and most up-to-date operating systems (such as Windows XP and Mac OS X) will recognize the hardware you're installing and walk you through the installation process. If not, a base station is the place to start.

Once your router is configured, the next job is to secure the network. Many home wireless networks are unsecured, leaving their owners' PCs open to the curious and the malicious. (Hackers with wireless "sniffers" can access a home network from the street by using a

wireless-equipped notebook computer.) The former wireless-B security standard, Wired Equivalent Protocol, has gotten mixed reviews over the years, but it's still difficult to hack, and it's better than nothing. But seeing as how a good 802.11g (wireless-G) broadband router can be had for less than \$150, it doesn't make sense to avoid the more secure standard unless you're on a skin-tight budget (wireless-B routers usually run closer to \$50).

A revised security standard, Wi-Fi Protected Access (WPA), is included with most wireless-G products, and is included with more and more wireless-B gear as well. WPA is a preferable security standard because it automatically changes its encryption keys at frequent intervals, preventing hackers from breaking the encryption and hacking your network. Also, WPA uses pass phrases (passwords that can also include spaces and special characters) of up to 63 characters.

For further protection, you can use a hardware firewall, which is included with most wireless network equipment. These firewalls can be set up to block traffic coming in and out of your home network. Also, Windows XP and Mac OS X both include software firewalls that can protect your computers whether your router's firewalls are activated or not.

"The most important thing about installing a wireless network is making three important changes to the default settings to secure your network from outsiders," says Melidosian. "Turn off the broadcast feature, change the default IDs, and set encryption on your wireless network."

What a card

The second--and really, the last--thing you'll need is a wireless card for your computer. You will need one for each machine, and your needs will vary depending on whether you're using a desktop or notebook model. Many new computers already come with a wireless network card; if yours didn't, you can buy one for around \$60.

(That's the last thing you'll need for your wireless network. It's also worth mentioning things you might want, and at the top of that list for most people is a digital media hub. For less than \$300, you can stream music files wirelessly from your PC to your home stereo; many media hubs can also stream digital photos and video to your TV.)

In the meantime, now is as good a time to set up a wireless network as there's ever been. New innovations (such as soft access point technology, which can turn your PC into its own router) are trickling in more slowly, and prices can't drop much lower.

A few judiciously spent dollars can even make old hardware new again. "I purchased a Microsoft wireless-G notebook PC card for \$79 for an old notebook," says Brian Solis, president of San Jose-based FutureWorks Inc. "I spent \$79 on a Linksys-G PC card for the kids' PC. I got an Xbox wireless-G adapter and spent \$99 each for two internal PCI G cards for the desktops." As a result, Solis has five networked PCs, plus an Xbox, running off one wireless-G access point.

"We're not streaming videos, but file sharing, surfing and even online gaming is more than sufficient," he says. "I may at one point install another access point just to strengthen the signal in the house. Until then, I actually can take the notebook outside and enjoy a cup of coffee on a nice day while getting some work done."