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Hooking up with Wi-Fi: 6 things to know

By Kim Komando

Whether you're out of town on business or pleasure, there's usually stuff to deal with back at the office



You can't totally escape, so you bring along a laptop. In between the beach or meetings, you can get some work done.

When you have a broadband connection at work, it's hard for many of us to stomach a dial-up line on the road. That's why my laptop is Wi-Fi-enabled. I used my wireless connection on a recent vacation to Maui. I was cruising the Internet and checking e-mail at blazing broadband speeds free of charge (more about that in a moment).

There's a lot of confusion about Wi-Fi. Here are six points to set the record straight.

1. Wi-Fi is simply a network without wires.

It stands for "wireless fidelity." Many business and home PC users use it to network computers known formally as 802.11. Isn't that catchy? There are actually three standards, denoted by letters appended to the numbers: 802.11a, 802.11b and 802.11g.



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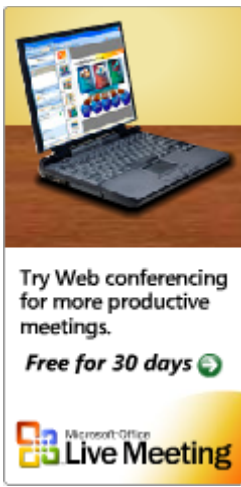
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The three differ in speed. But most people have 802.11b, although 802.11g is fast becoming an alternative. If you have a Wi-Fi-enabled laptop, you probably still have 802.11b. And that's where you'll encounter the road.

802.11b runs at 11 megabits per second (Mbps), and 802.11g and 802.11a at up to 54 Mbps — the advertised rates, anyway. But they can be affected by interior walls, distance from the signal, the moon and so on. Many laptops have a built-in Wi-Fi antenna, so they are ready to network. An easily attached if your laptop doesn't have one.

Once enabled, the laptop simply grabs a Wi-Fi signal when it is within range. Recently, I experienced this while in Hawaii. My computer locked onto a signal from the condominium next door. Apparently, they had a wireless network set up and did not bother to lock it down. I didn't hack the network or change network settings. I powered up my laptop and I was online using their connection. Just like magic, I did slip a note under their door when I left, advising them that their network was not secure.

It also glommed onto a signal at my Phoenix office from a business next door. Should you receive one signal, that's not a problem: You simply select the signal you want.



2. **Wi-Fi is not the same thing as 2.5G or 3G.**

The latter two are telephone standards, which, among other things, offer easy Web access. They are widely available. Several companies -- Sprint, AT&T Wireless and Verizon, to name a few -- service. If your provider has service where you travel, you can access the Internet.

So what's the big difference? Speed! The telephone standards allow you to download data at 40 Kbps per second (Kbps). Wi-Fi can download at the speed of a cable modem or T1 line. So, if the fact providing Wi-Fi service uses a T1 line, the download will probably run 1.5 Mbps. Look at it this difference between a 56K modem and really fast broadband.

Advertising sometimes implies that Wi-Fi downloads data from the Internet at 11 Mbps. It does not download any faster than the modem or T1 line to which it is attached. Still, 1.5 Mbps is a real download.

3. **Wi-Fi networks are sprouting up everywhere.**

There are thousands of Wi-Fi installations around the country, and the number continues to balloon. Some are free, run by altruistic individuals. Many others are run by businesses such as hotels, restaurants, coffee shops, to attract business. Most charge for access.

There are several networks of Wi-Fi installations. T-Mobile (www.tmobile.com), for example, operates more than 2,000 locations, known as hotspots. Each hotspot accesses the Internet through a T1 line.

According to its Web site, T-Mobile has several plans and is aiming specifically at the business market. Its hotspots in Starbucks coffeehouses, airport lounges and Borders Books & Music stores.

Another large network is Boingo Wireless (www.boingo.com). It doesn't own its hotspots. Rather, it partners with people who already have them. Boingo has arranged for more than 5,000 hotspots, about 2,000 are live, most located in hotels and restaurants. They range from DSL hookups at 385 Kbps to 11 Mbps.

4. **Nevertheless, Wi-Fi isn't always easy to find.**

So why doesn't everyone use Wi-Fi? Despite the growth of the networks, access can still be a pain.

Once you get outside airports, restaurants, coffee shops and hotel lobbies, there isn't much service. Telephone-based systems are much more widely available. So, if you're at the airport, you probably have access to Wi-Fi. But if you're moseying through Stuck, Wash., or Scratch Ankle, Ala., you'll most likely find a telephone system.

That could change. Cometa Networks, a consortium of AT&T, IBM and Intel, promises to build 20,000 hotspots by the end of 2004. Cometa is a wholesaler; it plans to sell the hotspots to retailers. It has partnerships with McDonald's restaurants, Barnes & Noble Booksellers, Tully's Coffee, and others across the country. In at least one of its pilot programs with McDonald's in 2003, users got an Internet access with an Extra Value Meal.

Other companies also have announced big plans for Wi-Fi. Boosters talk of wall-to-wall Wi-Fi service. "Someday" is the operative word; hotspots still can be few and far between today.

5. **You cannot secure Wi-Fi connections.**

802.11a and 802.11b have been using a security standard known as Wired Equivalent Privacy (WEP), which is considered by some to be a hacker's delight. WEP encrypts data, but the key, which is used to decrypt, is relatively easy to break. An expert hacker snooping on you 10 feet away could break the encryption.

802.11g, however, employs a newer encryption standard, Wi-Fi Protected Access (WPA), which is considered to be much more secure than WEP. Microsoft already has updated Windows XP to support WPA. Many Wi-Fi providers still must implement WPA (which, in turn, is considered an interim standard). The new 802.11i network security standard is ratified in 2004 or later.

T-Mobile is frank about warning that its data signal is broadcast in the open and clear. Passwords and usernames are encrypted. Other than that, you're on your own. T-Mobile encourages customer virtual private networks (VPNs).

VPNs are software programs that use the Internet. But they are password-protected and use 128-bit encryption, which is virtually unbreakable. Corporations usually set up VPNs, which provide a secure connection to the Internet.

into a company server. The data still could be intercepted, but it would be unreadable without the key.

Boingo Wireless encourages customers to use a VPN. And it provides a VPN for users who do not have one, greatly enhancing security. The Boingo VPN sends the encrypted data to a Boingo server, decrypts it and sends it to its destination over the Internet.

Small firms can buy VPN software to set up their own security. There are a number of manufacturers which are Watchguard Technologies and SonicWall. You could also use a product such as GoToMyPC which does not require software. Once set up, you have complete access to your office computer from any computer with Internet access. You can check e-mail and work on files, just like you were in the office. *(Disclosure: GoToMyPC is a sponsor of my weekly radio show. But I use GoToMyPC at home to access my office computer and I like it very much.)*

6. Wi-Fi is geared for more adept computer users.

Wi-Fi is not for the uninitiated. For example, Boingo customers cannot access T-Mobile's network everywhere. That means when you travel, you must carefully plan your Web jaunts. It's as if you had to switch with different telephone companies to be sure of having a connection. Boingo and T-Mobile have been working together. They plan to make mutual access available someday.

But that inconvenience is nothing compared to the possibility of being hacked. If you want to surf the Internet at an airport, you should be OK. But someone nearby using specialized software could intercept your transmissions, unless you are using a VPN. Even using a password to enter your business or personal e-mail mailbox could be dangerous.

Only you can decide if Wi-Fi is safe enough for your situation. A huge criminal business has been built on stolen identities. If you are transmitting data in the clear, someone could be watching.



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Kim Komando writes about workplace technology and security issues. She's the host of the largest talk-radio show about computers and the Internet, and writes a syndicated column for more than 100 Gannett newspapers and for USA Today. Find [Kim's show](#) on the radio station near you and [send an e-mail](#) to subscribe to her free weekly e-mail newsletter.

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