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About WiFi



WiFi Basics

For some reason, most companies like to overly complicate technology and WiFi is no different. The alphabet soup of acronyms, combined with the ever-increasing avalanche of wireless jargon and gadgets, is quite overwhelming. Maybe it makes them feel smart. If you're just looking to use WiFi and aren't looking to become a certified engineer, WiTopia is here to help you. Here's the short and sweet:



Background : How it all began.

In June 1993, the [IEEE](#), the world's preeminent information technology standards organization, with over 360,000 members in 175 countries, ratified the **802.11** standard. This is why the types of WiFi are known as 802.11b, 802.11g, and so on. We know this technology more commonly as Wireless Fidelity or "WiFi."

Nobody really seemed to notice or care until Apple released their AirPort™ WiFi products in 1999 which integrated 802.11 technology with a computer operating system. Soon thereafter, many other vendors such as Linksys, Belkin, and D-Link, to name just a few, began churning out consumer WiFi gear at an incredible rate.

As people started using WiFi at home, and wireless hotspots began to sprout here and there, it was clear we were all becoming hooked. By 2003, the proliferation was out of control and growing exponentially. Today, millions of wireless access points (APs) are sold annually and hundreds of thousands of wireless hotspots have emerged worldwide. We're all learning fast there's a tremendous amount of freedom, convenience, and productivity packaged up in that little wireless access point.

How it Works : If you use a cordless phone you already understand WiFi.

WiFi is radio technology and is quite analogous to a cordless telephone in function. Your wireless access point (AP) is the base station

and your laptop is the handset. WiFi even uses the same slice of the electromagnetic spectrum (2.4-5.8Ghz) as most modern cordless telephones. This is why you may experience interference between your cordless phones and your wireless network depending on the type of AP and phones you use. All you really need to know is that this spectrum is unlicensed which, in radio terms, means it's free—a very good thing.

The Flavors : Making sense of the standards.

802.11a -- Not widely in use. Data speeds up to 54Mbps with practical indoor ranges of 25-75 feet. Uses less crowded 5Ghz band with more available channels so it's good for eliminating interference with high user density or for media streaming.

802.11b - Most popular but quickly becoming obsolete. Data speeds up to 11Mbps with practical indoor ranges of 75-100 feet. Uses potentially crowded 2.4Ghz band so it's susceptible to interference from microwave ovens, cordless phones, and neighboring wireless networks.

802.11g – Rapidly growing in popularity. Increased data speed of 54Mbps versus 11Mbps of 802.11b with practical indoor ranges of 75-100 feet. Backwards compatible with 802.11b devices at 11Mbps. Uses potentially crowded 2.4Ghz band so it's susceptible to interference from microwave ovens, cordless phones, and neighboring wireless networks.

Note: The existence of an 802.11b device within an 802.11g network typically defaults the entire network to a much lower data speed.

802.11n – Not standardized yet by IEEE but a number of “Pre-N” APs are available. Uses new MIMO (Multiple Input Multiple Output) technology to achieve vastly improved and consistent data speeds of 108Mbps with practical indoor ranges of several hundred feet. Backwards compatible with 802.11b and 802.11g. MIMO technology eliminates most interference issues.

Why it's Cool : The future is knocking on your door.

Other than the obvious benefits of being wireless at home, at work, or at a wireless hotspot, WiFi can add some 21st century panache to your life. Stream your music and media collection throughout your home, set up the ultimate gaming environment, build out a camera network, or even implement a home automation system to monitor and control your home from any room or over the Internet. With WiFi, all this, and more, is now possible.

Security Concerns : With love comes sacrifice.

Chances are, your home wireless network is quite insecure. That wireless hot spot probably is too. In a perfect world that wouldn't matter, but the world isn't perfect is it?

The overwhelming majority of consumers and small businesses are using WiFi with absolutely no security enabled. Even those technical enough to set up the built in security features are reading everyday that they're still easily susceptible to hackers and many other unsavory things.

A wireless access point is, after all, a miniature radio station broadcasting an open invitation to all who care to snoop your data, or worse. The practice of detecting and cataloging unprotected wireless networks on the Internet is called “Wardriving” and it's become a virtual sport easily performed by anyone with a wireless laptop, some downloadable tools, and seemingly, a lot of free time. Amusing as this may be, it's more popular than you'd ever imagine...which ain't a good thing any way you look at it.

WiTopia can fix all that for you. With our products, [services](#) and knowledgeable staff, you can build your own “wireless utopia” where you can enjoy all the benefits of WiFi with none of the worry.

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