

ETHERNET NON-WIRELESS

We Love Copper!

When I say “non-wireless” I mean, of course, WIRED.

As use of the World-Wide-Web becomes more voracious these days, there are factors that are persistently whittling at our signaling data, especially the audio and video of our teleconferences. Our voices may get intermittent or get out of synch with our video, which itself may “pixelate,” stutter or stop altogether.

Many of you are using a wireless connection between your computer and your “access point” (AP), the device sending that precious signal to and from your internet provider. There are factors affecting the wireless signal, such as distance from the AP, transmitted signal strengths, layers of walls and materials that distort or block the signal, etc. There is also the issue of data “overhead.” A wireless signal will have extra encoding for security, which can also reduce throughput.

Enter the Original Path: Using actual cables that go directly into your computer from that AP device.

Let’s mention this first: While an “access point” ultimately refers to the transmitting-receiving antenna of the wireless system, an access point device is usually part of a modem/router that has the necessary Ethernet sockets to make our physical cable connections. (These are the square holes in the back with the proverbial “RJ-45” cable connections. An RJ-45 is a standard connector at the ends of an Ethernet cable.)

For me, Ethernet house wiring was easy. In 1977 I wired houses and buildings for a security company, and in 2009, when I did my house renovation, I had someone else do the intricate, detailed work that put the wiring in.

You want to go wired?

The Ethernet Standard allows 100 meters (about 300 feet) between active connections, so you should not have to worry about signal loss going from one end of the house to the other. (How do you get from Point A to Point B is “an exercise left for the student.”)

Along the way or at your endpoint, you can have Ethernet switches that can take the original cable and fan additional wires out to other machines/destinations.

For Ethernet cables, I recommend Category 6 (Cat6) cables, which can handle the throughput of modern signal activity. The old Cat5 and Cat5E cables may work, but nowhere near as well as Cat6.

Pricing for Cat6 is reasonable. We have been using products from monoprice.com, and they have been reliable and quite inexpensive. They are mail order, so cables are not instantly available, but if you want to go local there is Microcenter in the Pan Am shopping Center.

The Monoprice cable connectors are “snagless” which means the ends have an overlay which protects the latching tab from being snapped off. Whatever cables you get, choosing YELLOW would make it starkly visible and less of a trip hazard. (Yes, route those cables so they are not underfoot!)

Also, don't forget those couplers if you have to link one Ethernet cable to another, such as to make a “sacrificial” pigtail. (Ask us.) The Monoprice version of the commonplace RJ-45 coupler (#8P8C) is only \$0.41 each.

NOW FOR SOMETHING REALLY DIFFERENT!!

If finding a cable pathway from Point A to Point B seems intimidating, there is another alternative that can really make things simple, but has additional considerations.

It is called Powerline Ethernet, and the way it works is a physical Ethernet cable goes from the AP origination point to a module which plugs into your electrical wall outlet. You plug another module at your destination(s) and run its Ethernet cable to your equipment.

That's it...but there are those considerations.

Most houses have two electric “arteries” (formally known as phases) and you MAY need the Powerline modules to be on the same phase. My readings on this indicate the problems may be reduced because the Powerline module signals get into the other wiring phase by induction.

Also, make sure the module is not plugged into a surge protected outlet, like on a power strip or part of a UPS surge-protection outlet. Surge-protection will reduce the Ethernet signals, making them unreliable. It is best to plug the Powerline modules directly into the wall, or at least a non-surge-protected power strip.

Pricing for Powerline Ethernet modules is fairly competitive between Monoprice and Microcenter. Talk to a salesman at Microcenter about the modules, with an eye towards module throughput that meets or exceeds what your system can produce.

Remember, you initially need TWO modules for things to work. After that, add modules as needed for the endpoints around the house. (I am not sure if there is a limit, though!)

I have always had good luck with Powerline Ethernet, but because a number of factors can make a house-wiring solution unworkable, please be sure to keep those receipts!

Regards,

-Bill Walsh