

Network Overview

Wired is faster than WiFi. Fiber is better than copper. 10/100/1000 means a network device is capable of 1000 Mbps. This is also called “1g” or “1gbe.” 10g(be) is 10x faster than 1g, but it’s not something you encounter very often. I had 6 years of glorious 1g squared fiber and now I’m back to copper and it is... a bummer. If you have fiber in your neighborhood/building, it is the same price as a mediocre high-end cable line. Get the fiber.

In addition to the 1g and 10g flavors, there is also 2.5g, and 5g. You can probably assume what those numbers mean.

5ghz is faster than 2.4ghz, but 2.4ghz has better range. In other words: put all your smart home bullshit on 2.4ghz and all your computers and media devices on the 5ghz (or wired).

Some things you can do when your internet is bad or not working properly

- Unplug your Gateway and Router(s), wait 5 minutes, plug everything back in
- Don’t use your iSP’s provided wireless router, it is usually complete shit. Just google “best wifi wirecutter” and buy whatever they say to buy.
- For WiFi - check your congestion using a tool like WiFi Explorer.
 - Adjust the channels
 - Adjust the 2.4 vs 5
 - Move it away from other electronic devices
 - Move it to a higher spot
 - Get a better router
 - Get a mesh system
- Run a speedtest to evaluate tx/rx and ping. I use speedtest.net. Not the best, but at least it’s consistent.
- Call your iSP to make sure they are allowing you to use your own network equipment
- Renew your DHCP Lease
- Change your DNS servers to Google’s: 8.8.8.8 and 8.8.4.4 (this is a new one I can’t believe I didn’t know, thanks to Cuttlefish)
- Turn off your VPN

When you’re troubleshooting networks that aren’t yours, you can almost always get into their admin panel and make some fixes (or cause some chaos). Navigate to your computer network settings, find the router address, copy and paste that into a browser. This is the admin panel for the network. The chances that the router’s login is “admin” and the password is “password” is surprisingly high. Also: once you know the router’s iP, you can figure out who the manufacturer is, and then you can google “default admin login x manufacturer. Have fun with that. For the lazy: you can usually type 10.0.0.1 or 192.168.1.1 and that’s the router iP.

I can also recommend buying a compact WAP and keeping it in your kit. I go through phases of doing this, then I sell it to a job and don't replace it. A WAP of your own means that you can connect to an existing network and use your own settings so you don't need to think about it much. Sometimes you need to coordinate with venue IT, but more often than not, you can get away with this and no one needs to know.

A good network hack is using Powerline devices. These are fairly affordable network devices that allow you to run LAN over power cables. A good use case is: you need to get a hard line to a different room in a hurry and the two rooms don't have a clear cable path, but they do share a circuit. Plug the Powerline TX in one room and the RX in another. These are always slower than the real thing and other devices on the same power circuit can cause interference. Never put these on a switchable outlet because the interference at the switch is aggressive. A 1-gig line with a high-end Powerline on a circuit with moderate interference cuts your speeds to ~200 Tx/Rx.

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