

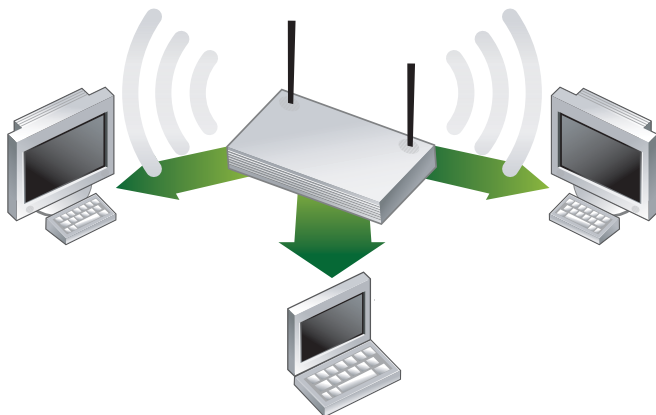
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# Choosing a Home Network Configuration

**Tech Tip 97** - By Chris Capelle

Not that many years ago, the idea of having more than one [computer](#) in the home seemed absurd. But now, with much of our daily life dependant on them, it's commonplace for households to have multiple computers. One day you wake up, and there's a computer for each member of the family, the one in the basement stores old graphics and MP3 files, and then Dad brings home his [laptop](#) from work... Suddenly there are seven computers in the house, but only one printer and one Internet connection - how do you keep everybody happy and productive?

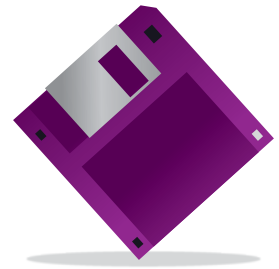
**Answer: Set up a network!**



A network is a group of computer components connected together with a [hub](#), [switch](#), or [router](#), giving the users the ability to [share resources](#) and data. These resources (most importantly Internet connectivity and printing)

are integral parts of computer use today. Networking them together just makes more sense. The difference between the three is that a router will take communications from a computer or multiple computers, and route the data through a gateway to or from the internet via a broadband connection. A hub or switch only handles local network traffic like two computers on a LAN (Local Area Network) communicating with each other.

Gone are the days when users swap data on floppy discs. In fact, many of today's computers no longer include a [floppy disc drive](#)! But even if files don't need to be shared, a home network will pay for itself quickly by sharing one Internet connection, and buying one common printer instead of one for every computer user (or carting the printer around the house, depending on who needs it).



For the SOHO (Small Office / Home Office) crowd, there are two different types of networks; each serves a purpose, and each has its pros and cons.

- Hard-wired (also called Ethernet)
- Wireless (also called WiFi)

Ethernet is the industry standard for, wired networks. Virtually every computer of the past decade has an integrated Ethernet port (or the ability to accept a third-party card).

#### **Ethernet Pros:**

- Inexpensive
- Easy to configure
- Fast

#### **Ethernet Cons:**

- Requires each computer to be physically connected to the router
- Hiding the wires is difficult, if not impossible
- Limited computer portability

Ethernet networks are generally plug-and-play, hard-wiring each computer and printer to a hub. Ethernet networks are best used in a one- or two-room situation, where wires can easily be hidden behind furniture, or the underside of worktables.

But wired networks have some limitations. For starters, most houses aren't equipped to easily conceal wires. Aesthetics come into play here, and the difficulty of keeping the home neat and free of clutter is the biggest drawback of a wired network. For example, if the kids have a computer upstairs, one in the basement, and the cable modem is in the kitchen, it means physically running a wire between these devices, which isn't practical.

One solution is to hire a cabling pro to run the wiring through the walls and install wall jacks, but that generally isn't cheap. Since most people are reluctant to drill through walls, a



kinder, gentler solution is needed when computers are spread throughout the house. That alternative would be a wireless network (aka WiFi).

#### **Wireless Networking, the Kinder Gentler Solution**



WiFi is short for Wireless Fidelity and applies to devices that comply with the 802.11 family of standards - it is commonly interchangeable with the term "wireless network".

WiFi works on the same principle as wired networks, only without the wires (hence the clever name!). Wireless networks have some pretty cool perks including the ability to sit on the deck on nice days with a laptop, or keeping an eye on the kids while working downstairs. They also establish an environment free of clutter and unsightly wires. Like Ethernet, virtually every computer today has built-in wireless, or the ability to accept a wireless card.

#### **Wireless Pros:**

- Neat and clean
- Flexibility around the house
- Scalable

#### **Wireless Cons:**

- Slower than Ethernet
- Not always intuitive to configure
- More expensive

## Privacy Tip

To ensure privacy, no matter which brand of router that is used, it is a good policy to enable the wireless security feature. About 50% of wireless residential networks are set up without a password. Don't believe it? Venture to a densely populated residential area with a laptop, and see how many networks can be accessed that have not been secured.



## Wireless Network Disadvantages

Wireless networks do have a few drawbacks. They are less intuitive to configure, slower than their hard-wired counterparts, and large houses often have problems with physical items diminishing the signal. Plaster walls, large appliances and chimneys tend to be the main culprits, but there are work-arounds for these obstacles. Wireless networks also have security issues, which will be covered in greater detail in the second part of this series on wireless networks.

Be aware that there are additional home networking options available, including routers that can network through a home's existing electrical wiring. These are up-and-coming products, and though early reviews have been favorable, they haven't hit the mainstream yet and remain cutting-edge solutions for now.

## In Conclusion

Wireless networks have come a long way. When set up properly, they can enhance one's computing experience. The next tip will cover the specifics of setting up a wireless network

at home, how to maximize signal strength and range, and the importance of password-protecting a network.

## Geeks Humor

### The Eight Networking Truths

- It always has to work.
- It is always possible to add another level of indirection.
- It is always something.
- Good, Fast, Cheap: Pick any two (you can't have all three).
- It is always more complicated than you think.
- For all resources, whatever it is, you always need more.
- Every networking problem always takes longer to solve than it seems like it should.
- One size never fits all

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