

# What Makes a Network Tick?

To use a network, you don't really have to know much about how it works. Still, you may feel a little bit better about using the network if you realize that it doesn't work by voodoo. A network may seem like magic, but it isn't. The following list describes the inner workings of a typical network:

» **Network interface:** Inside any computer attached to a network is a special electronic circuit called the *network interface*. The network interface has either an external jack into which you can plug a network cable — or, in the case of a wireless network interface, an antenna.

» **Network cable:** The network cable physically connects the computers. It plugs into the network interface card (NIC) on the back of your computer.

The type of network cable most commonly used is twisted-pair cable, so named because it consists of several pairs of wires twisted together in a certain way. Twisted-pair cable superficially resembles telephone cable. However, appearances can be deceiving. Most phone systems are wired using a lower grade of cable that doesn't work for networks.

For the complete lowdown on networking cables, see Chapter 7.

Network cable isn't necessary when wireless networking is used. For more information about wireless networking, see Chapter 8.

» **Network switch:** Networks built with twisted-pair cabling require one or more switches. A *switch* is a box with a bunch of cable connectors. Each computer on the network is connected by cable to the switch. The switch, in turn, connects all the computers to each other. For more information about network switches, see Chapter 7.

In the early days of twisted-pair networking, devices known as hubs were used rather than switches. The term hub is sometimes used to refer to switches, but true hubs went out of style sometime around the turn of the century.

In networks with just a few computers, the network switch is often combined with another networking device called a router. A router is used to connect two networks. Typically, a router is used to connect your network to the Internet. By combining a router and a switch in a single box, you can easily connect several computers to the Internet and to each other.

» **Network software:** Of course, the software makes the network work. To make any network work, a whole bunch of software has to be set up just right. For peer-to-peer networking with Windows, you have to play with the Control Panel to get networking to work. And a network operating system such as Windows Server 2019 requires a substantial amount of tweaking to get it to work just right.



TIP



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