Almost all networks are now built with twisted-pair cable. In this type of cable, pairs of wires are twisted around each other to reduce electrical interference. (You almost need a PhD in physics to understand why twisting the wires helps to reduce interference, so don't feel bad if this concept doesn't make sense.)

Although unlikely, you might encounter older types of cable on ancient networks. Before twisted-pair cable became the standard, *coaxial* cable (also known as *coax*, pronounced "COE-ax") was used. The most common type of coax cable, called RG-58, resembled television cable. The second, even older type, was called 10base5, also known as *thicknet* because of its unwieldy thickness.

You may also encounter fiber optic cables that span long distances at high speeds or thick twisted-pair bundles that carry multiple sets of twisted-pair cable between wiring closets in a large building. Most networks, however, use simple twisted-pair cable.

Twisted-pair cable is sometimes called *UTP.* (The *U* stands for *u*nshielded, but "twisted-pair" is the standard name.) Figure 7-1 shows a twisted-pair cable.

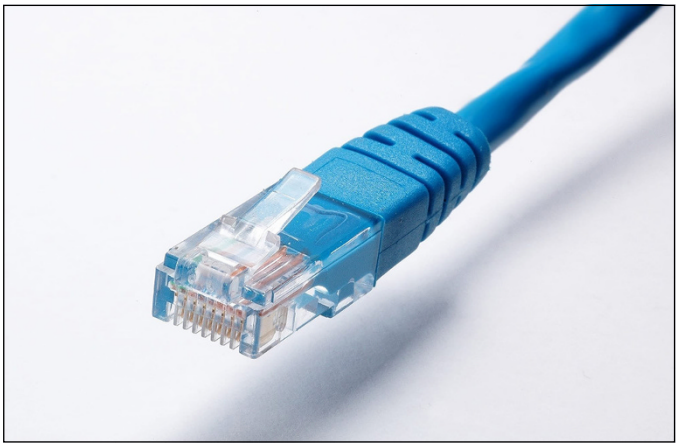

FIGURE 7-1: Twisted-pair cable.

When you use UTP cable to construct an Ethernet network, you connect the computers in a star arrangement, as Figure 7-2 illustrates. In the center of this star is a *switch.* Depending on the model, Ethernet switches enable you to connect 4 to 48 computers (or more) by using twisted-pair cable.

TIP

In the UTP star arrangement, if one cable goes bad, only the computer attached to that cable is affected. The rest of the network continues to chug along.