Understanding Switches

When you use twisted-pair cable to wire a network, you don't plug the computers into each other. Instead, each computer plugs into a separate device called a *switch.*

You need to know only a few details when working with switches. Here they are:

- Installing a switch is usually very simple. Just plug in the power cord and then plug in patch cables to connect the network.
- Each port on the switch has an RJ-45 jack and a single LED indicator, labeled *Link,* that lights up when a connection is made on the port.

  If you plug one end of a cable into the port and the other end into a computer or other network device, the Link light should come on. If it doesn't, something is wrong with the cable, the hub or switch port, or the device on the other end of the cable.

TIP

- Each port may have an LED indicator that flashes to indicate network activity.

  If you stare at a switch for a while, you can find out who uses the network most by noting which activity indicators flash the most.

TIP

- The ports may also have a collision indicator that flashes whenever a packet collision occurs on the port.

  It's perfectly acceptable for the collision indicator to flash now and then, but if it flashes a lot, you may have a problem with the network:

  - Usually, the flashing means that the network is overloaded and should be segmented with a switch to improve performance.
  - In some cases, the flashing may be caused by a faulty network node that clogs the network with bad packets.

WARNING

Comparing managed and unmanaged switches

Not all switches are created equal. Some switches are designed for very small networks in homes or single-office businesses. Small networks are so simple to manage that the switch itself doesn't require any management or configuration of its own. You simply plug all the computers into the switch, and the network takes care of itself.