



## Real World Scenario

### Lesson 1 Case

Local area networks are used by just about every organization, and today many homes have them as well. This lesson refers to a fictitious company named Proseware, Inc., that wants to implement a new LAN in a brand-new office, which will serve approximately 20 users. The company requires an extremely quick network that can transfer many different types of data. They want the most cost-effective layout without losing speed or efficiency! The network engineer's job responsibilities include selecting the right equipment, making sure it is all compatible, and getting it installed on time. The network engineer should have a thorough understanding of technologies, such as Ethernet and switching, because she will be critical in designing and implementing the network. This lesson covers all of the concepts necessary so you can be confident installing the network that this company desires. As we progress through this book, we will build on this scenario and add lots more networking technologies to the infrastructure.

# Examining Local Area Networks, Devices, and Data Transfer

Simply stated, a *network* is two or more computers that exchange data. A *local area network (LAN)* is a group of these computers that are confined to a small geographic area, usually one building. Setting up a LAN requires computers with network adapters, central connecting devices to connect those computers together, and a numbering scheme (such as IP addresses) to differentiate one computer from the next. It can also include servers, some type of protective device such as a firewall, and connections to perimeter networks that are adjacent to the LAN.

## Defining the LAN

As mentioned, a LAN requires computers with network adapters, central connecting devices, and some type of medium to tie it altogether, be it cabled or wireless connections. These must be connected together in some way to facilitate the transfer of data. It is important to define how they are connected together, as well as how they actually transmit data.

### Certification Ready

What is a local area network (LAN)? Objective 1.2