reconfigures IP addresses as hosts come and go. As you can imagine, DHCP can save a network administrator many hours of tedious configuration work.

In this section, you discover the ins and outs of DHCP: what it is, how it works, and how to set it up.

Understanding DHCP

DHCP allows individual computers on a TCP/IP network to obtain their configuration information — in particular, their IP addresses — from a server. The DHCP server keeps track of which IP addresses have already been assigned so that when a computer requests an IP address, the DHCP servers offer it an IP address that isn't already in use.

The alternative to DHCP is to assign each computer on your network a static IP address, which can be good or problematic:

>> Static IP addresses are okay for networks with a handful of computers.

>> For networks with more than a few computers, using static IP addresses is a huge mistake. Eventually, some poor, harried administrator (guess who?) will make the mistake of assigning two computers the same IP address. Then you have to manually check each computer's IP address to find the conflict. DHCP is a must for any but the smallest networks.

Although the primary job of DHCP is to assign IP addresses, DHCP provides more configuration information than just the IP address to its clients. The additional configuration information is referred to as *DHCP options.* The following list describes some common DHCP options that can be configured by the server:

>> Router address, also known as the default gateway address

>> Expiration time for the configuration information

>> Domain name

>> DNS server address

>> Windows Internet Name Service (WINS) server address

DHCP servers

A DHCP server can be a server computer located on the TCP/IP network. Fortunately, all modern server operating systems have a built-in DHCP server capability. To set up DHCP on a network server, all you have to do is enable the server's