- » A **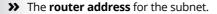subnet mask** for the scope. You can specify the subnet mask with dotted decimal notation or with Classless Inter Domain Routing (CIDR) notation.

- » **One or more ranges of excluded addresses.** These addresses aren't assigned to clients. (For more information, see the next section, "Feeling excluded?")

- » **One or more reserved addresses.** These addresses are always assigned to particular host devices. (For more information, see the section "Reservations suggested," later in this chapter.)

- » The **lease duration,** which indicates how long the host is allowed to use the IP address. The client attempts to renew the lease when half of the lease duration has elapsed. For example, if you specify a lease duration of eight days, the client attempts to renew the lease after four days have passed. The host then has plenty of time to renew the lease before the address is reassigned to some other host.

- » The **router address** for the subnet.

  This value is also known as the *default gateway address.*

- » The **domain name and the IP address** of the network's DNS servers and WINS servers.

Feeling excluded?

Everyone feels excluded once in a while. With a wife and three daughters, I know how that feels. Sometimes, however, being excluded is a good thing. In the case of DHCP scopes, exclusions can help you prevent IP address conflicts and can enable you to divide the DHCP workload for a single subnet among two or more DHCP servers.

An *exclusion* is a range of addresses not included in a scope but falling within the range of the scope's starting and ending addresses. In effect, an exclusion range lets you punch a hole in a scope: The IP addresses that fall within the hole aren't assigned.

Here are a couple of reasons to exclude IP addresses from a scope:

- » **The computer that runs the DHCP service itself must usually have a static IP address assignment.** As a result, the address of the DHCP server should be listed as an exclusion.

- » **You may want to assign static IP addresses to your other servers.** In that case, each server IP address should be listed as an exclusion.