One of the benefits of NAT is that it helps slow down the rate at which the IP address space is assigned because a NAT device can use a single public IP address for more than one host. It does this by keeping track of outgoing packets so that it can match up incoming packets with the correct host. To understand how this process works, consider this sequence of steps:

1. A host whose private address is `192.168.1.100` sends a request to `216.58.192.4`, which happens to be `www.google.com`. The NAT device changes the source IP address of the packet to `208.23.110.22`, the IP address of the firewall. That way, Google will send its reply back to the firewall router. The NAT records that `192.168.1.100` sent a request to `216.58.192.4`.
2. Now another host, at address `192.168.1.107`, sends a request to `17.172.224.47`, which happens to be `www.apple.com`. The NAT device changes the source of this request to `208.23.110.22` so that Microsoft will reply to the firewall router. The NAT records that `192.168.1.107` sent a request to `17.172.224.47`.
3. A few seconds later, the firewall receives a reply from `216.58.192.4`. The destination address in the reply is `208.23.110.22`, the address of the firewall. To determine to whom to forward the reply, the firewall checks its records to see who's waiting for a reply from `216.58.192.4`. It discovers that `192.168.1.100` is waiting for that reply, so it changes the destination address to `192.168.1.100` and sends the packet on.

Actually, the process is a little more complicated than that because it's very likely that two or more users may have pending requests from the same public IP. In that case, the NAT device uses other techniques to figure out to which user each incoming packet should be delivered.

Configuring Your Network for DHCP

Every host on a TCP/IP network must have a unique IP address. Each host must be properly configured so that it knows its IP address. When a new host comes online, it must be assigned an IP address within the correct range of addresses for the subnet — one that's not already in use. Although you can manually assign IP addresses to each computer on your network, that task quickly becomes overwhelming if the network has more than a few computers.

That's where Dynamic Host Configuration Protocol (DHCP) comes into play. DHCP automatically configures the IP address for every host on a network, thus ensuring that each host has a valid, unique IP address. DHCP even automatically