EXERCISE 3-3: WORKING WITH CIDR

In this exercise, you will examine a CIDR address and determine the subnet mask and the network ID.

1. You have been given the IP address 192.168.2.101/25.

In the first empty row in the box below, write the binary equivalent for the IP address and indicate how many bits are used for the Network ID and how many bits are used for the Host ID. You may use an online conversion tool, such as the one on the Math Is Fun Web site: http://www.mathsisfun.com/binary-decimal-hexadecimal-converter.html.

192	168	2	101	CIDR network 192.168.2.101/25
				___ bits for Network ID, ___ bits for Host ID
				Binary subnet mask for /25 network
				Subnet mask converted to decimal

2. In the second empty row in the box, write the binary subnet mask for a /25 network.

3. In the last row of in the box, write the subnet mask in dotted decimal notation.

4. Use the IP address and the subnet mask to find the CIDR network ID.

IP address		(192.168.2.101/25)
subnet mask	_____ __	( )
CIDR network		= _____

5. When you are finished, you can check your work using an online subnet calculator, such as the one at: http://www.subnet-calculator.com/cidr.php.

In this exercise, you worked with a CIDR address.

Configuring IP Addresses

Systems can be configured to use IP addresses in the following ways:

• Static address assignment—the system administrator manually enters the IP address (and subnet mask and default gateway) for the system.

• Automatic address assignment—the system is configured to obtain an IP address automatically from a server on the network through a protocol called *Dynamic Host Configuration Protocol (DHCP)*. You will learn more about DHCP later in this lesson.

In almost every modern LAN, systems obtain their IP addresses automatically from a server. Even in small home networks DHCP generally handles address configuration, as most broadband routers perform the DHCP function.

Required configuration parameters

At least three pieces of configuration information are required to enable a system to participate on the network. These are the IP address, the local subnet mask, and the IP address of the default gateway. Optional (but common) configuration information includes the address(es) of primary and or secondary DNS servers, which will be discussed later.