Linux can function as a router, which means it can link two or more networks together,  
directing traffic between them on the basis of its routing table. This task is handled, in  
part, by the route command. This command can be used to do much more than specify a

single gateway system, though, as described earlier. A simplified version of the route syntax is as follows:  
route {add | del} [-net | -host] target [netmask nm] [gw gw]  
[reject] [[dev] interface]  
You specify add or del along with a target parameter (a computer or network address)  
and optionally other parameters. The -net and -host options force route to interpret the  
target as a network or computer address, respectively. The netmask option lets you set a  
netmask as you desire, and gw lets you specify a router through which packets to the specified target parameter should go. (Some versions of route use gateway rather than gw.) The  
reject keyword installs a blocking route, which refuses all traffic destined for the specified  
network. (This is *not* a firewall, though.) Finally, although route can usually figure out the  
interface device (for instance, eth0) on its own, you can force the issue with the dev option.  
As an example, consider a network in which packets destined for the 172.20.0.0/16 subnet should be passed through the 172.21.1.1 router, which isn’t the default gateway system.  
You can set up this route with the following command:  
# **route add -net 172.20.0.0 netmask 255.255.0.0 gw 172.21.1.1**

One more thing you may need to do if you’re setting up a router is to enable routing.  
Ordinarily, a Linux system won’t forward packets it receives from one system that are  
directed to another system. If Linux is to act as a router, though, it must accept these packets and send them on to the destination network (or at least to an appropriate gateway). To  
enable this feature, you must modify a key file in the /proc filesystem:  
**# echo "1" > /proc/sys/net/ipv4/ip\_forward**  
This command enables IP forwarding. Permanently setting this option requires  
modifying a configuration file. Some distributions set it in /etc/sysctl.conf:  
net.ipv4.ip\_forward = 1  
Other distributions use other configuration files and options, such as /etc/sysconfig/  
sysctl and its IP\_FORWARD line. If you can’t find it, try using grep to search for ip\_forward  
or IP\_FORWARD, or modify a local startup script to add the command to perform the change.