A default gateway is set as follows:

```
# route add default gw IP_ADDRESS INTERFACE_NAME
```

For example:

```
# route add default gw 192.168.0.1 wlan0
```

See also

- The *Playing with variables and environment variables* recipe of *Chapter 1*, *Shell Something Out*, explains the `PATH` variable
- The *Searching and mining text inside a file with grep* recipe of *Chapter 4*, *Texting and Driving*, explains the `grep` command

Let us ping!

`ping` is the most basic network command every user should first know and is available on all major Operating Systems. It is also a diagnostic tool used for verifying the connectivity between two hosts on a network. It can be used to find out which machines are alive on a network. Let us see how to use `ping`.

How to do it...

In order to check the connectivity of two hosts on a network, the ping command uses **Internet Control Message Protocol** (**ICMP**) echo packets. When these echo packets are sent towards a host, the host responds back with a reply if it is reachable or alive.

Check whether a host is reachable as follows:

```
$ ping ADDRESS
```

The `ADDRESS` can be a hostname, domain name, or an IP address itself.

`ping` will continuously send packets and the reply information is printed on the terminal. Stop the pinging process by pressing *Ctrl* + *C*.

For example:

- When a host is reachable, the output will be similar to the following:

```
$ ping 192.168.0.1
PING 192.168.0.1 (192.168.0.1) 56(84) bytes of data.
64 bytes from 192.168.0.1: icmp_seq=1 ttl=64 time=1.44 ms
^C
```

```
--- 192.168.0.1 ping statistics ---
1 packets transmitted, 1 received, 0% packet loss, time 0ms
rtt min/avg/max/mdev = 1.440/1.440/1.440/0.000 ms

$ ping google.com
PING google.com (209.85.153.104) 56(84) bytes of data.
64 bytes from bom01s01-in-f104.1e100.net (209.85.153.104): icmp_
seq=1 ttl=53 time=123 ms
^C
--- google.com ping statistics ---
1 packets transmitted, 1 received, 0% packet loss, time 0ms
rtt min/avg/max/mdev = 123.388/123.388/123.388/0.000 ms
```

- When a host is unreachable, the output will be similar to:

```
$ ping 192.168.0.99
PING 192.168.0.99 (192.168.0.99) 56(84) bytes of data.
From 192.168.0.82 icmp_seq=1 Destination Host Unreachable
From 192.168.0.82 icmp_seq=2 Destination Host Unreachable
```

Once the host is not reachable, the ping returns with the `Destination Host Unreachable` error message.

Network administrators generally configure devices such as routers not to respond to `ping`. This is done to lower security risks, as `ping` can be used by attackers (using brute-force) to find out IP addresses of machines.

There's more

In addition to checking the connectivity between two points in a network, the `ping` command can be used with additional options to get useful information. Let us go through the additional options of `ping`.