Parameter	Description
`%P`	Percentage of the CPU that this job got. This is just user + system times divided by the total running time. It also prints a percentage sign.
`%K`	Average total (data + stack + text) memory usage of the process, in Kilobytes.
`%w`	Number of times that the program was context-switched voluntarily, for instance while waiting for an I/O operation to complete.
`%c`	Number of times the process was context-switched involuntarily (because the time slice expired).

Collecting information about logged in users, boot logs, and boot failures

Collecting information about the operating environment, logged in users, the time for which the computer has been powered on, and boot failures are very helpful. This recipe will go through a few commands used to gather information about a live machine.

Getting ready

This recipe will introduce commands `who`, `w`, `users`, `uptime`, `last`, and `lastb`.

How to do it...

1. To obtain information about users currently logged into the machine use:

```
$ who
slynux   pts/0   2010-09-29 05:24 (slynuxs-macbook-pro.local)
slynux   tty7    2010-09-29 07:08 (:0)
```

   This output lists the login name, the TTY used by the users, login time, and remote hostname (or X display information) about logged in users.

TTY (the term comes from **TeleTYpewriter**) is the device file associated with a text terminal which is created in `/dev` when a terminal is newly spawned by the user (for example, `/dev/pts/3`). The device path for the current terminal can be found out by typing and executing the command `tty`.

2. To obtain more detailed information about the logged in users, use:

```
$ w
 07:09:05 up  1:45,  2 users,  load average: 0.12, 0.06, 0.02
USER     TTY      FROM     LOGIN@   IDLE   JCPU PCPU WHAT
slynux   pts/0    slynuxs 05:24   0.00s  0.65s 0.11s sshd: slynux
slynux   tty7     :0       07:08   1:45m  3.28s 0.26s gnome-session
```

   This first line lists the current time, system uptime, number of users currently logged on, and the system load averages for the past 1, 5, and 15 minutes. Following this, the details about each login are displayed with each line containing the login name, the TTY name, the remote host, login time, idle time, total CPU time used by the user since login, CPU time of the currently running process, and the command line of their current process.

   Load average in the `uptime` command's output is a parameter that indicates system load. This is explained in more detail in *Chapter 9*, *Administration Calls*.

3. In order to list only the usernames of the users currently logged into the machine, use:

```
$ users
slynux slynux slynux hacker
```

   If a user has opened multiple terminals, it will show that many entries for the same user. In the preceding output, the user `slynux` has opened three pseudo terminals. The easiest way to print unique users is to use `sort` and `uniq` to filter as follows:

```
$ users | tr ' ' '\n' | sort | uniq
slynux
hacker
```

   We have used `tr` to replace `' '` with `'\n'`. Then a combination of `sort` and `uniq` will produce unique entries for each user.

4. In order to see how long the system has been powered on, use:

```
$ uptime
 21:44:33 up  3:17,  8 users,  load average: 0.09, 0.14, 0.09
```

   The time that follows the word `up` indicates the time for which the system has been powered on. We can write a simple one-liner to extract the uptime only:

```
$ uptime | grep -Po '\d{2}\:\d{2}\:\d{2}'
```

   This uses `grep` with a perl-style regex to extract only three two-digit numbers separated by colons.