Measuring and optimizing power usage

Power consumption is one of the factors that one must keep on monitoring, especially on mobile devices, such as notebook computers, tablets, and so on. There are few tools available for Linux systems to measure power consumption, one such command is `powertop` which we are going to use for this recipe.

Getting ready

`powertop` doesn't come preinstalled with most Linux distributions, you will have to install it using your package manager.

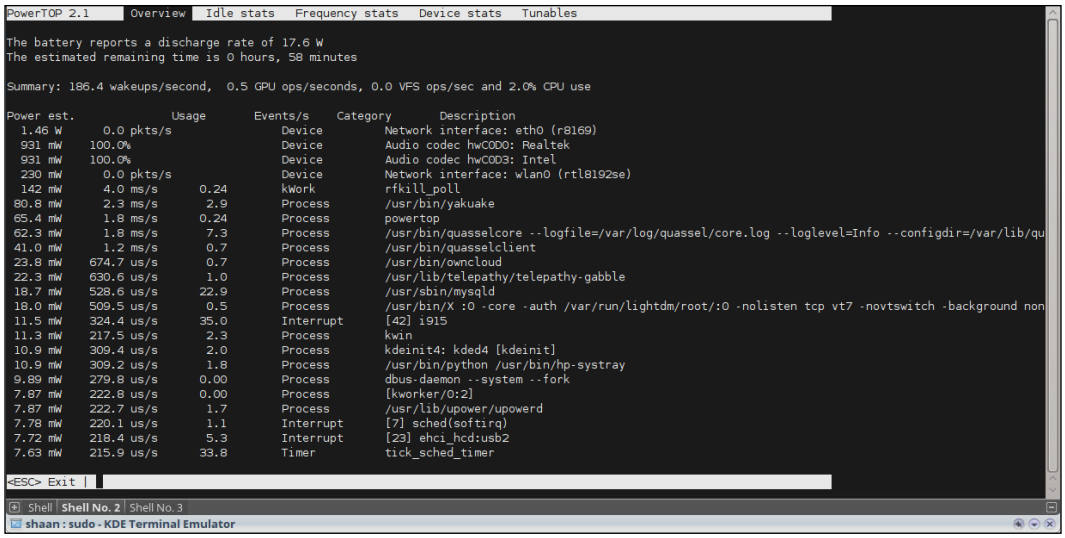
How to do it...

Let's see how to use `powertop` to measure and optimize power consumption:

1. Using `powertop` is pretty easy, just run:

   ```
   # powertop
   ```

   `powertop` will start taking some measurements and once it's done, it will show a screen which will have detailed information about power usage, the processes using the most power, and so on:



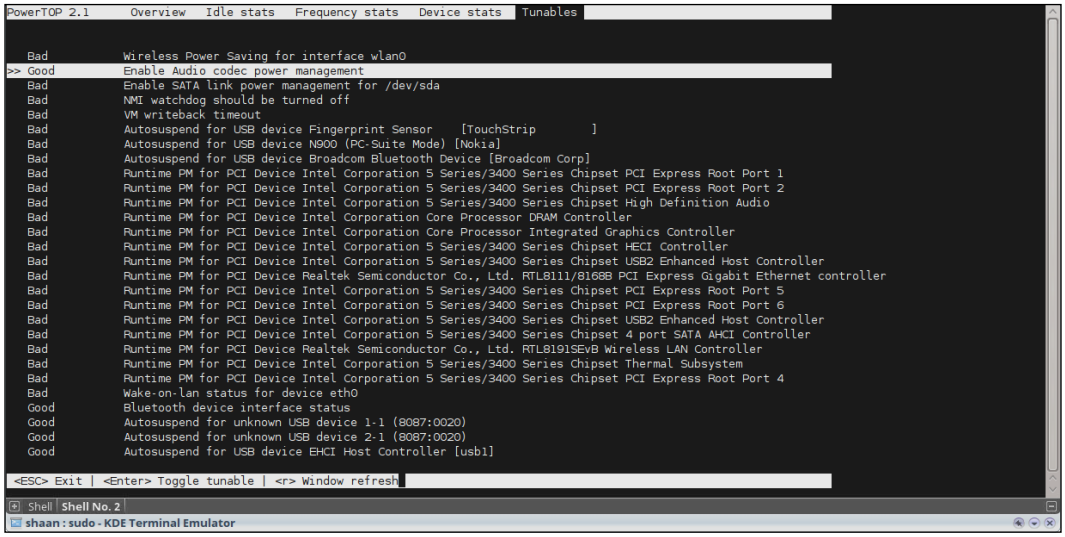
2. For generating HTML reports, use:

```
# powertop --html
```

   `powertop` will take measurements over a period of time and generate an HTML report with the default filename `PowerTOP.html`, which you can open using any web browser.

3. For optimizing power usage, use:

   When `powertop` is running, use the arrow keys to switch to the **Tunables** tab; this will show you a list of things that `powertop` can tune so that they consume less power. Just choose whichever ones you want, press *Enter* to toggle from **Bad** to **Good**:



If you want to monitor the power consumption from a portable device's battery, it is required to remove the charger and use the battery for `powertop` to make measurements.

Monitoring disk activity

Going by the popular naming convention of monitoring tools ending in the word `'top'` (the command used to monitor processes), the tool to monitor disk I/O is called `iotop`.