

Getting ready

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

How to do it...

There are multiple ways of using `iostat` to perform I/O monitoring, some of which we will see in this recipe:

1. For interactive monitoring, use:

```
# iostat -o
```

The `-o` option to `iostat` tells it to show only those processes which are doing active I/O while it is running. It is a useful option to reduce the noise in the output.

2. For non-interactive use from shell scripts, use:


```
# iostat -b -n 2
```

This will tell `iostat` to print the statistics two times and then exit, which is useful if we want this output in a shell script and do some manipulation on it.

3. Monitor a specific process using the following:

```
# iostat -p PID
```

Put PID of the process that you wish to monitor, and `iostat` will restrict the output to it and show statistics.

 In most modern distros, instead of finding the PID and supplying it to `iostat`, you can use the `pidof` command and write the preceding command as:

```
# iostat -p `pidof cp`
```

Checking disks and filesystems for errors

Data is the most important thing in any computer system. Naturally, it is important to monitor the consistency of data stored on physical media.

Getting ready

We will use the standard tool, `fsck` to check for errors in the filesystems. This command should be preinstalled on all modern distros. If not, use your package manager to install it.

How to do it...

Let us see how to use `fsck` with its various options to check filesystems for errors, and optionally fix them.

1. To check for errors on a partition or filesystem, just pass its path to `fsck`:

```
# fsck /dev/sdb3
fsck from util-linux 2.20.1
e2fsck 1.42.5 (29-Jul-2012)
HDD2 has been mounted 26 times without being checked, check
forced.
Pass 1: Checking inodes, blocks, and sizes
Pass 2: Checking directory structure
Pass 3: Checking directory connectivity
Pass 4: Checking reference counts
Pass 5: Checking group summary information
HDD2: 75540/16138240 files (0.7% non-contiguous),
48756390/64529088 blocks
```

2. To check all the filesystems configured in `/etc/fstab`, we can use the following syntax:

```
# fsck -A
```

This will go through the `/etc/fstab` file sequentially, checking each of the filesystems one-by-one. The `fstab` file basically configures a mapping between disks and mount points which makes it easy to mount filesystems. This also makes it possible to mount certain filesystems during boot.

3. Instruct `fsck` to automatically attempt fixing errors, instead of interactively asking us whether or not to repair, we can use this form of `fsck`:

```
# fsck -a /dev/sda2
```

4. To simulate the actions, `fsck` is going to perform:

```
# fsck -AN
fsck from util-linux 2.20.1
[/sbin/fsck.ext4 (1) -- /] fsck.ext4 /dev/sda8
[/sbin/fsck.ext4 (1) -- /home] fsck.ext4 /dev/sda7
[/sbin/fsck.ext3 (1) -- /media/Data] fsck.ext3 /dev/sda6
```

This will print information on what actions will be performed, which is checking all the filesystems.