

# TooManyOpenFiles

## Too Many Open Files

You can see this on Linux machines in client-side applications, server code or even in test runs.

It is caused by per-process limits on the number of files that a single user/process can have open, which was introduced in [the 2.6.27 kernel](#). The default value, 128, was chosen because "that should be enough".

In Hadoop, it isn't. To fix this log in/su/ssh as root and edit `/etc/sysctl.conf`

add the line

```
fs.epoll.max_user_instances = 2048
```

Then reboot. Different numbers may be chosen.

There is an immediate shortcut: `echo 2048 > /proc/sys/fs/epoll/max_user_instances`. This setting will be lost on the next reboot, but is handy for trying out different values.

## limits.conf

Another limit on the number of files open may be the file `/etc/security/limits.conf`

It has a setting on the number of files a user or group may have, `nofile`.

To set this, as root edit `/etc/security/limits.conf`

and add a line such as

```
*                soft    nofile          2048
```

Then restart.

To see the current/default limits, run the command `ulimit -a`. This should print something like

```
core file size          (blocks, -c) 0
data seg size           (kbytes, -d) unlimited
scheduling priority     (-e) 20
file size               (blocks, -f) unlimited
pending signals         (-i) 16382
max locked memory       (kbytes, -l) 64
max memory size         (kbytes, -m) unlimited
open files              (-n) 4096
pipe size               (512 bytes, -p) 8
POSIX message queues    (bytes, -q) 819200
real-time priority      (-r) 0
stack size              (kbytes, -s) 8192
cpu time                (seconds, -t) unlimited
max user processes      (-u) unlimited
virtual memory          (kbytes, -v) unlimited
file locks              (-x) unlimited
```

You can dynamically up the limits until the next reboot with the same command. Specifically

```
ulimit -n 8192
```

The updated value can then be printed

```
# ulimit -n
8192
```