

Concurrent Systems & Operating Systems

Practical 1

January 30, 2015

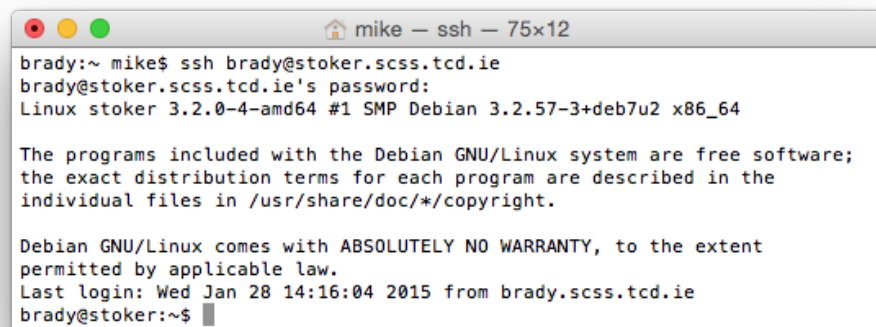
This practical is worth 1% of your year-end result. Have your program ready to demonstrate in labs next week.

- Write a complete threaded program in C (or non-OO C++) on a Linux machine—e.g. `stoker.cs.tcd.ie`—to compute the value of π . You'll need to find some way to do this with, for instance, a series or an integral so that you can use an embarrassingly parallel approach.
- Find out how to measure *elapsed* time in the Linux environment and do some measurements. From the measurements, can you deduce how many processors/cores are in the machine?
- Does using more threads make the program complete more quickly? What or why not – can you explain it?

Today, you should concentrate on the mechanical details of connecting to stoker and compiling a program on it. You can find the text of the HelloWorld program at:

<http://www.scss.tcd.ie/CourseModules/CS2016/Assets/Practicals/p1/helloworldsample.c>.

Here is what connecting to `stoker` might look like when you connect over an `ssh` link:



```
mike - ssh - 75x12
brady:~ mike$ ssh brady@stoker.scss.tcd.ie
brady@stoker.scss.tcd.ie's password:
Linux stoker 3.2.0-4-amd64 #1 SMP Debian 3.2.57-3+deb7u2 x86_64

The programs included with the Debian GNU/Linux system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Debian GNU/Linux comes with ABSOLUTELY NO WARRANTY, to the extent
permitted by applicable law.
Last login: Wed Jan 28 14:16:04 2015 from brady.scss.tcd.ie
brady@stoker:~$
```

BTW, consider using a version control system like `git`. You can have a repository on `github` or our own `gitlab` service, among others.

(<http://www.scss.tcd.ie/CourseModules/CS2016/Assets/Practicals/p1/practical.pdf>)