

# The bash shell

A shell is a user interface for accessing system resources and executing commands. One of the most commonly used shells is the Bourne Again SHell, or bash. By default, when you log into the Research Computing systems you are operating in a bash shell.

Some commonly used bash commands:

- `man` [command] -- Show the manual pages for a given [command]
  - `touch` -- Create a basic text file
  - `mkdir` -- Create a folder / directory
  - `ls` -- List files in a directory
  - `cd` -- Change directory
  - `pwd` -- Show current directory
  - `cat` -- Concatenate files and print on the standard output
- Commands are typically issued with the following format:

```
command [options] [arguments]
```

Local system resource information:

Sometimes we want to learn more about what is happening, e.g., what is the user load on the system.

We can use a utility called `htop` to get more information about the running state of the system. You can see a summary of the total CPU% Cpu(s) load and the memory KiB Mem usage at the top of the screen. To change the memory units, press E. We will go into more detail using the `htop` later on in this tutorial.

Useful `htop` field descriptions:

***PID*** Process ID

***USER*** User ID

***PR*** The scheduling priority level -- can take values between 1-99 with 1 being the highest priority

***RES*** Resident memory size -- This is the amount of memory that is allocated for your program.