

# BASH Cheat Sheet

Adopted from <https://phoenixnap.com/kb/bash-commands> and <https://www.educative.io/blog/bash-shell-command-cheat-sheet>

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## Working with files and directories

### ls

lists all files and directories in the current directory; can provide information on file sizes, permissions, timestamps, etc.

```
$ ls [options] [file|dir]
```

Example:

```
$ ls -lrth
```

lists files and directories in reverse chronological order and displays information on file size.

```
$ ls -a
```

lists all files, including hidden ones

### cd

changes the current directory to the specified directory.

```
cd [directory]
```

Example:

```
$ cd ..
```

switches to a directory above

```
$ cd
```

equivalent to `cd ~`, switches to home directory

### pwd

prints the path of the current working directory; useful to get the path to the directory for further use in a bash script.

```
$ pwd [options]
```

### rm

removes files or directories.

```
$ rm [options] [file|dir path]
```

**Important:** `rm` deletes files without prompting for confirmation! Deleted files are not recoverable. Best used with `rm -i`.

Example:

```
$ rm -r project
```

deletes the directory *project* and everything inside it; removes recursively directories and their contents, including subdirectories and files within them.

## mkdir

creates a new, empty directory.

```
$ mkdir [options] [dir]
```

## cp

copy files and directories between locations.

```
$ cp [options] [source] [destination]
```

Example:

```
$ cp -r timetables/ timetables-backup
```

copies the specified directory and its entire contents, including subdirectories and their contents into a new location.

## mv

moves directories and files; can also be used to rename files or directories.

```
$ mv [options] [source] [destination]
```

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## Previewing files

### head

previews the beginning section of a text file or input stream.

```
$ head [options] [file...]
```

Example:

```
$ head -100 script.sh
```

shows the first 100 lines of the file.

### tail

displays the last [default = 10] lines of a file,

```
$ tail [options] [file...]
```

Example:

```
$ tail -100 script.sh
```

shows last 100 lines in the file

### more

displays one screen of file contents at a time, use space bar to more to next screen

```
$ more [file]
```

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# Working with an HPC

## scp

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secure copy. Like a copy command, allows copying a file or directory between two machines

```
$ scp [options] [file] [destination]
```

Example:

```
$ scp -r mycodes/ s1234567@eddie.ecdf.ed.ac.uk:~/project1/.
```

copies directory `mycodes` from the local machine to remote machine, and places into a directory `project1` located in a home directory.

## ssh

---

secure shell, connects to a remote machine.

```
$ ssh [options] [user]@[server]
```

Example:

```
$ ssh -Y s1234567@eddie.ecdf.ed.ac.uk
```

logs in a user `s1234567` to Eddie HPC, allowing for visualisation of graphics on a remote machine.

## qsub

---

submits a gridengine job on a supercomputer.

```
$ qsub [options] [script]
```

Example:

```
$ qsub myjob.sh
```

## qstat

---

checks for the status of submitted gridengine jobs to a supercomputer for a given user.

```
$ qstat [options]
```

Example:

```
$ qstat -u s1234567
```