

Basic Linux commands

First you need to open a terminal by double clicking on the terminal icon.

- `pwd` – where in the system am I? Gives the path of the current folder.
- `ls` – lists the files in the current folder
- `ls -a` – lists all files, also hidden ones
- `ls -lrt` – lists files, when they were last used and permissions
- `cd path` – change directory, to move to other folders, just `cd` takes you to the home directory
- `cd ..` – change directory, going up one folder, instead of down
- `cd -` – change directory to the place you were before here
- `mkdir foldername` – create a new folder here
- `rm filename` – delete a file
- `rmdir foldername` – delete an empty folder
- `rm -r` – deletes and folder with all its contents (be careful!)
- `cp filename place` – copy filename to place
- `cp place/filename .` – copy file from place to here
- `cp -r` – same for whole folders
- `mv filename place` – move filename to new place
- `mv filename1 filename2` – rename filename1 with filename2
- `cat filename` – display file contents
- `more/less filename` – display file contents, use spacebar to move to next page, q to quit
- `locate filename` – searches system for the file and displays its path
- `grep string path` – search for files in path that have string in their name
- `tar -czf filename.tar filename` – compress filename to filename.tar
- `gzip -c filename > filename.gz` – compress to gz file
- `tar -xzf filename.tar.gz` – uncompress filename.tar.gz file
- `ls ALwj??????.fits > list` – creates a list, containing all fits files starting with ALwj
- `ps -a` – lists all current running processes
- `kill #processnumber` – stops the process with the given number, if able
- `kill -9 #processnumber` – force quits the process with the given number

Basic iraf commands

The very first time you use iraf you need to create the login.cl file by following these instructions:

- Inside your home directory, type `mkdir iraf`. This will create a directory titled iraf, where you can start the program.
- Type `cd iraf` to move into your iraf directory.
- Type `mkiraf` to make an iraf login for yourself.

To start iraf use the `cd` command to go to the folder where iraf has been installed. Once in the folder start an xgterm by typing `xgterm &`. If you plan on using ds9 for photometry data reduction or just displaying images, type `ds9 &` into the new window to start the visualising programme. Then type `ecl` to start iraf. You now have iraf running in that window.

- if you have forgotten to start ds9, you can still do it here, by typing `!ds9 &`
- basic linux commands can be used in iraf by first typing an exclamation mark, e.g. `!ls`, `!pwd`, `!cd`, use these to move to the folder with your data
- using `?` or `??` you can display the available packages in more or less detail
- type `help packagename/modulename` to display a help for a specific package or module
- to use the modules in the package, you need to load the package by typing the packagename, e.g. type `onedspec` to use the modules related to one dimensional spectra
- once the package is loaded, the available modules are displayed
- type `epar modulename` to modify the module to your specifics, e.g. `epar splot`
- in `epar`, use `@listname` to run module on many files, use `:go` to run module directly
- basic task to look at an image: `display filename[extension]`
- basic task to examine images: `imexam` (note, that this will work in the ds9 window, not the iraf window), use `c,l,a,etc.`
- basic module to plot spectra: `onedspec - splot filename[extension]` (note, this will open a new window with the spectrum), use `a+a,k+k,spacebar,etc.`
- type `bye` to leave a package
- type `logout` to exit iraf

Special useful linux commands

- you might need a text editor, linux provides several, like emacs or vi, use them by typing the name into the terminal
- use `gethead KEYWORDS filename > file` to search files for certain keywords and either display them on screen or pipe it to a file