PROCESSES

`^c <ctrl>-c` kills (definitely stops) current job

`^z <ctrl>-z` suspends the current job. This can either be moved to the background or resumed in the foreground by using **`bg`** or **`fg`**

`bg` moves the current process to the background

`fg` moves a process to the foreground. (If there is more than one suspended job, use **`jobs`** to decide which you want to **`fg`**)

`fg 2` moves process number 2, as listed by jobs, to the foreground

`jobs` lists background and suspended processes (created with **`bg`** or **`^z`**)

`jobs -l` ("el" not one) includes the pid (process id number)

`ps` lists all your processes

`kill` stops a process (use **`ps`** or **`jobs`** to find your processes)

`kill` ***2986***

kills off the process with pid *2986*

MISCELLANEOUS

`finger` tells you who is logged on (see also **`w`**)

`w` shows information about logged in users

`who` produces similar result (see finger)

`tar` create (or extract) a tarball from (to) a list of files

```
tar -cvf tarball.tar subdir/*
tar -xvf tarball.tar
```

the option **`-z`** compacts the files by **`gzip`**

`wc` word count

```
wc long.file
```

prints the number of lines, words and characters in *long.file*. Options include **`-l`** to count lines only, and **`-c`** to count characters only

`ln` create a link or an alias for a file

```
ln -s subdir/orig.file alias.file
```

`history` displays last several commands used

`!!` re-executes the last command

`!51` executes command 51 in the history list use also <**`up`**> - and <**`down`**> - arrows to navigate in the history

`date` displays current date and time

`passwd` invokes a password changing program

`exit` leaves the current shell (same as **`^d`** or **`<ctrl>-d`**) usually = logout

GRAPHIC DISPLAY

To display graphics, most Unix require the configuration of the X-Window server.

Commands on <u>your local</u> computer:

`xhost` set the list of allowed X-Window clients

`xhost +`

The "**+**" allows any remote computer to display on your local display

`ifconfig` gives information about the network configuration (e.g., the current IP_address, usually similar to 123.145.167.189)

Commands on <u>the remote</u> computer:

`setenv` set up an environment variable (tc-shell)

`setenv DISPLAY` ***`IP_address`*** **`:0.0`**

required to tell the remote computer where it should display its graphics

`xclock` starts a graphic clock (e.g., used to test the X-Window server or to get the current time... ;-)

This document was originally written and designed by Aoife McLysaght and Andrew Lloyd© from the Irish EMBnet node, and modified by Laurent Falquet from the Swiss EMBnet node and distributed by the Publications Committee of EMBnet.

EMBnet - European Molecular Biology network - is a network of bioinformatics support centres situated primarily in Europe. Most countries have a national node which can provide training courses and other forms of help for users of bioinformatics software.
Further information about UNIX is available from your national node. You can find contact information about your national node from the EMBnet web site:

http://www.embnet.org/

If you have found this publication useful, please let us know.
If you have ideas for similar documents we'd like to hear from you: emb-pr@embnet.org

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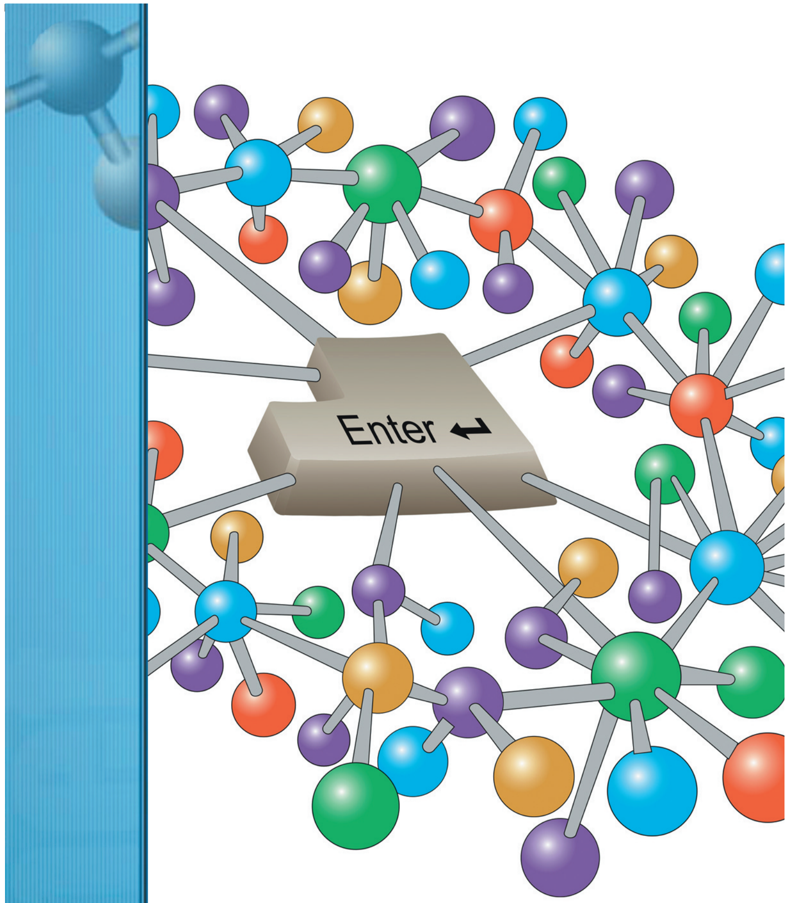

A Quick Guide
UNIX

EMBnet

A Quick Guide To UNIX

This is an introduction to the UNIX operating system. Unix may seem idiosyncratic, even impenetrable, to begin with but it has the virtue of minimising the number of keystrokes and so speeding up your access to the computer.
The commands listed here are common to different operating systems and shells. They include some of the most useful and frequently used commands in UNIX. The power and utility of most UNIX commands can be enhanced with switches or options preceded by a "**-**" sign.
More information on the options, the effects and how to use the commands is available by using the **man** command:

man gives manual information on a topic
`man grep`
displays the manual page about grep
apropos lists all the man(ual) entries relating to a topic (same as **man -k**)
`apropos print`

Another useful source of information is the on-line EMBnet tutorial which includes a page on UNIX

http://www.dk.embnet.org/Embnetut/Universl/unixcmds.html
or equally
http://www.uk.embnet.org/Embnetut/Universl/unixcmds.html

The general format of this document is that anything in **bold** is a command you can enter. Anything in ***italic*** is a fake file or directory name you must change according to yours. Anything preceded by a hyphen "**-**" is an option which will modify the effects of a command. A general description of each command is followed by one or several examples of its use.

FILES

ls lists files in a directory
`ls -alF`
lists **-a** all files in **-l** long format **-F** identifies directories **/**, executable files *****, and symbolic links **@**, in the current directory

cat concatenates and displays files
`cat my.file`
displays *my.file* on the screen

chmod modifies the read (**r**), write and delete (**w**), and execute (**x**) permissions of specified files and the search permissions of specified directories. The permission can be set for user (**u**), group (**g**) or other (**o**)
`chmod go-w my.file`
stops (**-**) anyone else (**go**) changing or deleting (**w**) *my.file*
`chmod g+rwx my.file`
allows (**+**) anyone of my group (**g**) reading, changing, deleting or executing (**rwx**) *my.file*

cp copies files
`cp orig.file copy.file`
`cp orig.file subdir/new.file`
copies *orig.file* to *new.file* in *subdir* directory
`cp subdir/orig.file .`
copies *orig.file* from *subdir* to the current directory (**.**) without changing its name

mv moves/renames a file (or directory)
`mv oldname newname`
`mv my.file subdir/my.file`
a move (**mv**) is equivalent to a copy (**cp**) followed by a remove (**rm**)

rm removes/deletes a file.
`rm oldfile`
`rm -i *.file`
option **-i** (interactive) advised if wildcards (*****) in use

diff compares two files and prints how they differ
`diff file1 file2`
prints differences to screen options include **-b** to ignore differences in blank space, and **-i** to ignore case

find searches the directory tree for a file
`find . -name lostfile -print`
will search your current directory (**.**) (and any subdirectories) for *lostfile*

grep searches a file for a string
`grep word my.file`
`grep "two words" my.file`
options include **-i** to ignore case and **-n** to print line numbers

vi simple screen oriented text editor

pico simple display oriented text editor
`pico myfile.txt`

head prints the first few (default = 10) lines of a file
`head oddfile`
`head -20 oddfile`
displays first twenty lines of *oddfile*

tail displays last few lines of a file (see head)

more displays a file one screenful at a time
`more longfile`
hit <**spacebar**> to see the next screen
Note: some people prefer **less**

OUTPUT REDIRECTION

> redirects output of a command to a file
`diff file1 file2 > new.file`
puts differences into *new.file*
`cat one.file two.file > both.file`
writes the output of the cat command into *both.file* (overwrites *both.file*)

>> appends a file to the bottom of another
`cat three.file >> both.file`
appends *three.file* to the bottom of *both.file*

| "pipe" - uses the output of the first command as the input of the second
`grep string my.file | wc -l`
finds how many lines on which "*string*" occurs (see **grep** and **wc**)

DIRECTORIES

cd changes current directory
`cd /etc`
go to */etc* directory
`cd ..`
go up one level in directory tree
`cd ../subdir2`
go "sideways" to *subdir2*

mkdir creates a new subdirectory
`mkdir subdir`

rmdir removes a directory - you must delete all the files in it first
`rmdir subdir`

pwd print working directory, tells your current location (path)