

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

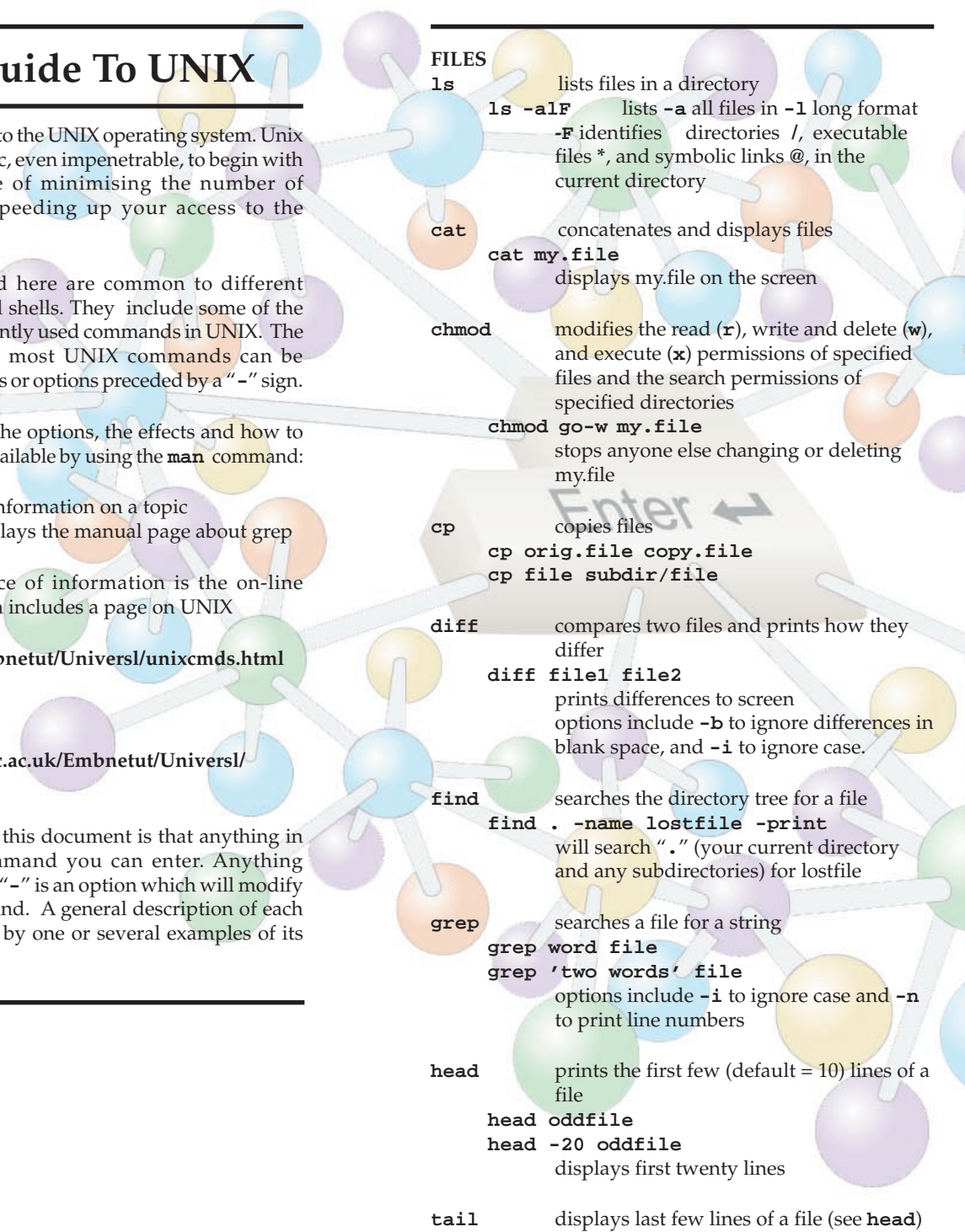
Another useful source of information is the on-line EMBnet tutorial which includes a page on UNIX

<http://biobase.dk/Embnetut/Universl/unixcmds.html>

or equally

<http://www.hgmp.mrc.ac.uk/Embnetut/Universl/unixcmds.html>

The general format of this document is that anything in **bold type** is a command you can enter. 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 -a-lF 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
chmod go-w my.file stops anyone else changing or deleting my.file

cp copies files
cp orig.file copy.file
cp file subdir/file

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 file
grep 'two words' file options include **-i** to ignore case and **-n** to print line numbers

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

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

mv moves/renames a file (or directory)
mv file1 file2
mv file1 subdir/file1

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

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

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 1 moves process 1, 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

kill -KILL 2986
definitely kills off pid 2986

MISCELLANEOUS

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

apropos lists all the man(ual) entries relating to a topic (same as **man -k**)

apropos print

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**

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

history displays last several commands used

!! re-executes the last command

!51 executes command 51 in the history list

w shows information about logged in users **who** produces similar result (see **finger**)

whoami for those having an identity crisis

This document was written and designed by Aoife McLysaght and Andrew Lloyd(C) from the Irish 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 brochure:

<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@dl.ac.uk

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