

# Basic Shell Commands

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1. `acroread` - Read or print a PDF file.

2. `cat` - Send a file to the screen in one go. Useful for piping to other programs

```
cat file1 # list file1 to screen
cat file1 file2 file3 > outfile # add files together into outfile
cat *.txt > outfile # add all .txt files together
cat file1 file2 | grep fred # pipe files
```

3. `cc` - Compile a C program

```
cc test1.c # compile test1.c to a.out
cc -O2 -o test2.prog test2.c # compile test2.c to test2.prog
```

4. `cd` - Change current directory

```
cd # go to home directory
cd ~/papers # go to /home/user/papers
cd ~fred # go to /home/fred
cd dir # go to directory (relative)
cd /dir1/dir2/dir3... # go to directory (absolute)
cd - # go to last directory you were in
```

5. `cp` - Copy file(s)

```
cp file1 file2 # copy file1 to file2
cp file1 directory # copy file1 into directory
cp file1 file2 file3 ... directory # copy files into directory
cp -R dir1 dir2/ # copy dir1 into dir2 including subdirectories
cp -pR dir1 dir2/ # copy directory, preserving permissions
```

6. `date` - Shows current date

```
> date
Sat Aug 31 17:18:53 BST 2002
```

7. `dvips` - Convert a dvi file to PostScript

```
dvips document.dvi # convert document.dvi to document.ps
dvips -Ppdf document.dvi # convert to ps, for conversion to pdf
```

8. `emacs` - The ubiquitous text editor

```
emacs foo.txt          # open file in emacs
emacsclient foo.txt    # open file in existing emacs (need to use
                        # M-x start server first)
```

9. file - Tells you what sort of file it is

```
> file temp_70.jpg
temp_70.jpg: JPEG image data, JFIF standard 1.01,
resolution (DPI), 72 x 72
```

10. firefox - Start Mozilla Firefox

11. f77/f90 - Compile a Fortran 77/99 program

```
f77 -O2 -o testprog testprog.f
```

12. gedit - Gnome text editor

13. gnuplot - A plotting package.

14. grep - Look for text in files. List out lines containing text (with filename if more than one file examined).

```
grep "hi there" file1 file2 ... # look for 'hi there' in files
grep -i "hi there" filename     # ignore capitals in search
cat filename | grep "hi there"  # use pipe
grep -v "foo" filename          # list lines that do not include foo
```

15. gtar - GNU version of the tar utility (also called tar on Linux). Store directories and files together into a single archive file. Use the normal tar program to backup files to a tape. See info tar for documentation.

```
gtar cf out.tar dir1          # put contents of directory into out.tar
gtar czf out.tar.gz dir1     # write compressed tar, out.tar.gz
gtar tf in.tar                # list contents of in.tar
gtar tzf in.tar.gz           # list contents of compressed in.tar.gz
gtar xf in.tar                # extract contents of in.tar here
gtar xzf in.tar.gz           # extract compressed in.tar.gz
gtar xf in.tar file.txt ...  # extract file.txt from in.tar
```

16. gv - View a Postscript document with Ghostscript.

17. gzip / gunzip - GNU Compress files into a smaller space, or decompress .Z or .gz files.

```
gzip file.fits              # compresses file.fits into file.fits.gz
gunzip file.fits.gz         # recovers original file.fits
gzip *.dat                  # compresses all .dat files into .dat.gz
gunzip *.dat.gz             # decompresses all .dat.gz files into .dat
program | gzip > out.gz     # compresses program output into out.gz
program | gunzip > out      # decompresses compressed program output
```

18. info - A documentation system designed to replace man for GNU programs (e.g. gtar, gcc). Use cursor keys and return to go to sections. Press b to go back to previous section. A little hard to use.

```
info gtar                  # documentation for gtar
```

19. kill - Kill, pause or continue a process. Can also be used for killing daemons.

```
> ps -u jss
...
666 pts/1      06:06:06  badprocess
> kill 666      # this sends a ``nice'' kill to the
                # process. If that doesn't work do
> kill -KILL 666 # (or equivalently)
> kill -9 666   # which should really kill it!

> kill -STOP 667 # pause (stop) process
> kill -CONT 667 # unpause process
```

20. latex - Convert a tex file to dvi

21. logout - Closes the current shell. Also try "exit".

22. lp - Sends files to a printer

```
lp file.ps # sends postscript file to the default printer
lp -dlp2 file.ps # sends file to the printer lp2
lp -c file.ps # copies file first, so you can delete it
lpstat -p lp2 # get status and list of jobs on lp2
cancel lp2-258 # cancel print job lp2-258

lpr -Plp2 file.ps # send file.ps to lp2
lpq -Plp2 # get list of jobs on lp2
lprm -Plp2 1234 # delete job 1234 on lp2
```

23. ls - Show lists of files or information on the files

```
ls file # does the file exist?
ls -l file # show information about the file
ls *.txt # show all files ending in .txt
ls -lt # show information about all files in date order
ls -lrt # above reversed in order
ls -a # show all files including hidden files
ls dir # show contents of directory
ls -d dir # does the directory exist?
ls -p # adds meaning characters to ends of filenames
ls -R # show files also in subdirectories of directory
ls -l # show one file per line
```

24. man - Get instructions for a particular Unix command or a bit of Unix. Use space to get next page and q to exit.

```
man man # get help on man
man grep # get help on grep
man -s1 sort # show documentation on sort in section 1
```

25. more - Show a file one screen at a time

```
more file # show file one screen at a time
grep 'frog' file | more # Do it to output of other command
```

26. mv - Move file(s) or rename a file

```
mv file1 file2          # rename file1 to file2
mv dir1 dir2           # rename directory dir1 to dir2
mv file1 file2 file3 ... directory # move files into directory
```

27. nano - very simple text editor. Warning - this program can introduce extra line breaks in your file if the screen is too narrow!

28. nice - Start a process in a nice way. Nice levels run from -19 (high priority) to 19 (low priority). Jobs with a higher priority get more CPU time. See renice for more detail. You should probably be using the grid-engine to run long jobs.

```
nice +19 myjob1  # run at lowest priority
nice +8 myjob2   # run at lowish priority
```

29. openoffice.org - a free office suite available for Linux/Unix, Windows and Mac OS X.

30. passwd - change your password

31. pine - A commonly used text-based mail client. It is now called alpine. Allows you to send and receive emails. Configuration options allow it to become quite powerful. Other alternatives for mail are mozilla mail and mutt, however I suggest you stick to alpine or thunderbird.

32. printenv - Print an environment variable in tcsh

```
setenv MYVARIABLE Fred
printenv MYVARIABLE
printenv # print all variables
```

33. ps - List processes on system

```
> ps -u jss          # list jss's processes
  934 pts/0      00:00:00 bash
~~~~~ ~~~~~~      ~~~~~~ ~~~~~~
PID  output      CPU time name
> ps -f          # list processes started here in full format
> ps -AF         # list all processes in extra full format
> ps -A -l       # list all processes in long format
> ps -A | grep tcsh # list all tcsh processes
```

34. pwd - Show current working directory

```
> pwd
/home/jss/writing/lecture
```

35. quota - Shows you how much disk space you have left

```
> quota -v
...
```

36. renice - Renice a running process. Make a process interact better with other processes on the system (see top to see how it is doing). Nice levels run from -19 (high priority) to 19 (low priority). Only your own processes can be niced and they can only be niced in the positive direction (unless you are root). Normal processes start at nice 0.

```
> ps -u jss | grep bigprocess      # look for bigprocess
 1234 pts/0    99:00:00 bigprocess
> renice 19 1234                   # renice PID 1234 to 19
```

37. rm - Delete (remove) files

```
rm file1      # delete a file (use -i to ask whether sure)
rm -r dir1    # delete a directory and everything in it (CARE!)
rm -rf dir1   # like above, but don't ask if we have a -i alias
```

38. rmdir - Delete a directory if it is empty (rm -r dirname is useful if it is not empty)

```
rmdir dirname
```

39. staroffice - An office suite providing word processor, spreadsheet, drawing package. See Users' Guide on how to install this. This is a commercial version of the openoffice office package - use [openoffice.org](http://openoffice.org) on linux.

40. setenv - Set an environment variable in tcsh.

```
setenv MYVARIABLE Fred
echo Hi there $MYVARIABLE
```

41. tar - Combine files into one larger archive file, or extract files from that archive (same as gtar on Linux).

```
tar cvf /dev/rmt/0 ./      # backup cwd into tape
tar tvf /dev/rmt/0        # list contents of tape
tar xvf /dev/rmt/0        # extract contents of tape
```

42. thunderbird - Start mozilla thunderbird.

43. top - Interactively show you the "top" processes on a system - the ones consuming the most computing (CPU) time. Press the "q" key in top to exit. Press the "k" key to kill a particular process. Press "r" to renice a process.