

This is a list of some handy/common things you can do on the command line in Linux.

## Commands

```
lynx -dump -width=999 http://www.linuxhowtos.org/Misc/commandline.htm >cmd.txt
```

Make a text copy of this page

```
apropos word
```

show commands pertinent to word

```
which command
```

show full path name of command

```
time command
```

see how long a command takes

```
nice command
```

run a low priority command

```
renice 19 -p $$
```

make shell (script) low priority. Useful for non interactive tasks

```
look prefix
```

quickly search dictionary

```
grep --color word /usr/share/dict/words
```

highlight occurrences of words in dictionary

```
gpg -c file
```

encrypt file

`gpg file.gpg`

### decrypt file

`echo 'wget url' | at 01:00`

### download url at 1AM to current dir

`echo "mail -s 'get the train' you@yourdomain < /dev/null" | at 17:45`

### email reminder

`watch -n1 'cat /proc/interrupts'`

### watch changeable data continuously

`alias hd='od -Ax -txlz -v'`

handy hexdump. (usage e.g.: `hd /proc/self/cmdline | less`)

## disc space

`ls /usr/bin | pr -T9 -W$COLUMNS`

### print in 9 columns to width of terminal

`touch -c -t 0304050607 file`

### set file timestamp (YYMMDDhhmm)

`pstree -hlp`

### show process hierarchy

`lsof /dir/file`

### show process using file

`ls -lSr`

### show files, biggest last

`du -sh file dir`

show disk usage of file and dir. See also `du`

`df -h`

free disk space

`df -i`

free inodes

`fdisk -l`

show disks partitions sizes (run as root)

`rpm -q -a --queryformat '%10{SIZE} %{NAME}' | sort -k1,1n`

list all packages by size

## Dir navigation

`cd -`

go to previous directory

`cd ~`

go to home directory

`(cd dir && command)`

go to dir, execute command and return to current dir

`pushd .`

put current dir on stack so you can `popd` back to it

## CDs

```
gzip cdrom.iso.gz
```

save copy of data cdrom

```
mkisofs -r dir | gzip > cdrom.iso.gz
```

create cdrom image from directory

```
mount -oloop cdrom.iso /mnt/dir
```

mount the cdrom image at /mnt/dir (for browsing)

```
gzip -dc cdrom.iso.gz | cdrecord dev=/dev/cdrom -
```

burn cdrom image (use dev=ATAPI -scanbus to confirm dev)

```
cdparanoia -B
```

rip audio tracks from CD to wav files in current dir

```
cdrecord dev=/dev/cdrom -audio *.wav
```

make audio CD from all wavs in current dir

```
oggenc --tracknum='track' track.cdda.wav -o 'track.ogg'
```

make ogg file from wav file

## archives

```
tar c dir/ | bzip2 > dir.tar.bz2
```

make archive of dir/

```
bzip2 -dc dir.tar.bz2 | tar x
```

extract archive (use gzip instead of bzip2 for tar.gz files)

```
tar c dir/ | gzip | gpg -c | ssh user@remote 'dd of=dir.tar.gz.gpg'
```

make encrypted archive of dir/ on remote machine

```
find dir/ -name '*.txt' | tar c --files-from=- | bzip2 > dir_png.tar.bz2
```

make archive of subset of dir/ and below

```
find dir/ -name '*.txt' | xargs cp --target-directory=dir_png/ --parents
```

make copy of subset of dir/ and below

```
( tar c /dir/to/copy ) | ( cd /where/to/ && tar x )
```

copy (with permissions) copy/ dir to /where/to/ dir

```
( cd /dir/to/copy && tar c . ) | ( cd /where/to/ && tar x )
```

copy (with permissions) contents of copy/ dir to /where/to/ dir

```
( tar c /dir/to/copy ) | ssh -C user@remote 'cd /where/to/ && tar x'
```

copy (with permissions) copy/ dir to remote:/where/to/ dir

```
dd bs=1M if=/dev/hda | gzip | ssh user@remote 'dd of=hda.gz'
```

backup harddisk to remote machine

## **rsync (Use the --dry-run option for testing)**

```
rsync -P rsync://rsync.server.com/path/to/file file
```

Only get diffs. Do multiple times for troublesome downloads

```
rsync --bwlimit=1000 fromfile tofile
```

Locally copy with rate limit. It's like nice for I/O

```
rsync -az -e ssh --delete ~/public_html/ remote.com:~/public_html'
```

Mirror web site (using compressed rsync over encrypted ssh)

```
rsync -auz -e ssh remote:/dir/ . && rsync -auz -e ssh . remote:/dir/
```

Synchronize current directory with remote one

## file searching

```
alias l='ls -l --color=auto'
```

quick dir listing

```
ls -lrt
```

list files by date. See also newest

```
find -name '*.ch' | xargs grep -E 'search string'
```

search \*.c and \*.h for 'search string' in this dir and below

```
find -type f -print0 | xargs -r0 grep -E 'search string'
```

search all regular files for 'search string' in this dir and below

```
find -type f -maxdepth 1 | xargs grep -E 'search string'
```

search all regular files for 'search string' in this dir

```
find -type f ! -perm -444
```

find files not readable by all (useful for web site)

```
find -type d ! -perm -111
```

find dirs not accessible by all (useful for web site)

```
locate -r 'file[^/]*.txt'
```

search cached index for names. This re is like glob \*file\*.txt

## Networking

(Note ifconfig, route, mii-tool, nslookup commands are obsolete)

```
ip link show
```

## list interfaces

```
ethtool interface
```

## list interface status

```
ip link set dev eth0 name wan
```

## rename eth0 to wan

```
ip addr add 1.2.3.4/24 brd + dev eth0
```

## add ip and mask(255.255.255.0)

```
ip link set dev interface up
```

## bring interface up (or down)

```
ip route add default via 1.2.3.254
```

## set default gateway to 1.2.3.254

```
host google.com
```

## lookup ip address for name or vice versa

```
netstat -lp --inet
```

## list internet services on a system

```
netstat -p --inet
```

## list active connections to/from system

```
echo 'message' | smbclient -M netbiosname
```

Send popup to windows machine (off by default as of XP sp2)

## Math

```
echo '(1 + sqrt(5))/2' | bc -l
```

## quick math

```
echo 'obase=16; ibase=10; 123' | bc
```

## base conversion (decimal to hex)

```
echo 'pad=20; min=64; (100*10^6)/((pad+min)*8)' | bc
```

## More complex (integer) e.g. This shows max FastE packet rate

```
echo 'pad=20; min=64; print (100E6)/((pad+min)*8)' | python
```

## python handles scientific notation

```
echo 'pad=20; plot [64:1518] (100*10**6)/((pad+x)*8)' | gnuplot -persist
```

## Plot FastE packet rate vs packet size

# text manipulation

(note these use stdin and stdout, so if you want to edit files, append newfile)

```
sed 's/string1/string2/g'
```

## replace string1 with string2

```
sed '/ *#/d; /^ */d'
```

## remove comments and blank lines

```
sed ':a; /\$/N; s/\n//; ta'
```

## concatenate lines with trailing

```
sed 's/[ ]*$//'
```

## remove trailing spaces from lines

```
sed 's/([\`\"$\\])/\\1/g'
```

## backslashify shell metacharacters active within double-quotes

```
sort file1 file1 file2 | uniq -u
```

show lines in file2 not in file1

```
echo 'Test' | tr '[:lower:]' '[:upper:]'
```

case conversion

```
tr -dc '[:print:]' < /dev/urandom
```

filter non printable characters

```
grep 'processor' /proc/cpuinfo | wc -l
```

count lines

## Calendar

```
cal -3
```

display a calendar

```
date --date='25 Dec' +%A
```

what day does xmas fall on, this year

```
date --date '1970-01-01 UTC 1097781420 seconds'
```

convert number of seconds since the epoch to a date

```
TZ=':America/Los_Angeles' date
```

What time is it on West coast of US (use tzselect to find TZ)

## locales

```
printf "%'d" 1234
```

print number with thousands grouping appropriate to locale

```
echo "I live in `locale territory`"
```

extract info from locale database

```
locale | cut -d= -f1 | xargs locale -kc | less
```

list fields in locale database

```
LANG=ga_IE locale int_prefix
```

lookup locale info for specific country. See also ccodes

## recode

(Obsoletes iconv, dos2unix, unix2dos)

```
recode -l | less
```

show available conversions (aliases on each line)

```
recode windows-1252.. file_to_change.txt
```

windows "ansi" to local charset (auto does CRLF conversion)

```
recode utf-8/CRLF.. file_to_change.txt
```

windows utf8 to local charset

```
recode iso-8859-15..utf8 file_to_change.txt
```

latin9 (western europe) to utf8

```
recode ../b64 file.b64
```

Base64 encode

```
recode ../HTML file.html
```

text to HTML

```
recode -lf windows-1252
```

show table of characters

```
echo -n 0xA4 | recode latin-9/x1..dump
```

show what the character is in charmap

```
echo -n 0x20AC | recode ucs-2/x2..1252/x
```

show windows-1252 encoding

```
echo -n 0x20AC | recode ucs-2/x2..utf-8/x
```

show utf-8 encoding

## interactive

mc

powerful filemanager that can browse rpm, tar, ftp, ssh, ...

screen

virtual terminals with detach capability, ...

lynx

web browser

gnuplot

interactive/scriptable graphing

octave

matlab like environment

From <http://www.iol.ie/~padraiga/cmdline.html>