

1 File System

Navigating

cd # Δ directory
pushd # push onto dir stack
popd # pop from dir stack
dirs -v # view dir stack

Organizing

mkdir # make directory
mv # move file
rm -r # remove recurse
rmdir # remove dir
ln -s # symbolic links
cp # copy file
cpio # cp into/out of archive
dd # convert & copy

Inspecting

chattr # Δ file attrs
head -n 5 # first 5 lines
find <this> # search for "this"
less # increm. display
locate <str> # search <str> in db
ls -la # all dir. contents
lsattr # ls file attrs, ext f.s.
lsblk # list block systems
lsuf # list open files
lsusb # list usb drives
more # paged file contents
stat # show file info
sync # store cached writes
updatedb # update locate db
tail -f # -f waits for appends
whereis # locate program
file -s # inspect file
cat /etc/fstab # see disks, partitions

Creating

less # increm. display
fsck # check, repair fs
mkfs # make filesystem
tune2fs # tune EXT FS
cfdisk # partitioning
sfdisk # partition FS
e2fsck # check EXT FS
mount # mount a FS
umount # unmount a FS
resize2fs # resize FS

2 Disks & Volumes

df # disk space usage
du # disk usage
gparted # disk partitioner
parted # disk partitioner
fdisk # view partitions

lsblk
mkfs
lvdisplay
lvchange
lvcreate
lvextend
lvm
lvresize
mdadm
pvcreate
sfdisk
vgcreate
vgdisplay
vgextend
list blocks
create fs on partition
disp. logical volumes
Δ LVs
create new LVs
add space to LVs
LV manager
resize LVs
manage linux RAID
init physical vol
manage disk partitions
create volume group
display VG info
add physicals to VG

3 System

uname # OS info
-a # all stats
uptime # how long systm up
free # RAM usage
-t # totaled
top # display Linux processes
which # show cmd path
sysctl # control kernal params
systemctl # control systemd
dmesg # disp kernal message
halt # power off
reboot # reboot system
shutdown # power down OS
login # begin session
logrotate # rotates logs
update-rc.d # init scripts
mkswap # setup swap area
vmstat # virtual memory stats

Modules

System autoloads mods listed in /etc/modules.
lsmod # show kernal mod status
insmod # insert kernal mod
modinfo # kernal mod info
rmmod # remove kernal mod
modprobe # add/remove mods

Peripherals

udev # dynamic device mgmt
udevadm # udev mgmt tool
dmidecode # peripherals info
lsusb # list usb devices
mt # control mag. tape
stty # Δ terminal settings
xrandr # manipulate screen
swapon # enable device for swap
swapoff # disable swapping

Hardware

lshw # list hardware
lspci # list pci buses

4 Processes

fg <job> # move job to foreground
kill <pid> # term a process
ps # current processe
-e #
cron # job scheduler
crontab # file for crons
nice # Δ cmd priority
renice # Δ pid priority
nohup # run cmd after HUP
sleep # put pid to sleep
at # execute at time
unshare # run in diff namespace
pgrep -lfa # inspect processes

5 Shells

history # show last past cmds
16 # only last 16
!! # run last cmd
!6 # rerun 6th
!-6 # rerun 6th oldest
!
^<str1> ^<str2> # last cmd containing str
alias a=b # repeat last using str2
tee # create alias for b
stdout to 2+ files
test # evaluate expression
xargs # build cmds from STDIN
bash # start shell
env # show env vars
chsh # Δ login shell
export # set env var
tset # init terminal
reset # init terminal
bind # set key bindings
fish # modern shell

6 Compression

tar <file> # general format
tar -cvf # create tar
tar cvzf # create tar.gz
tar cvfj # create tar.bz2
tar -xvf # extract
tar tvf # list contents
tar tvfW # verify archive

gzip
bzip2

7 Data Processing

diff # differences, by line
cmp # compare files by byte
comm # compare sorted
expand # tabs into spaces

unexpand # spaces into tabs
fmt # text formatting
join # ... 2 files on field
nl # number lines
paste # merge lines
sort # ... on field
split # ... into sections
uniq # report repeated lines
expr # evaluate expression
mc # visual shell
nano # file editor
groff # doc formatting systm
tr # character replacement
mknod # make block file
wc # word count

grep

awk

sed

cut

cut -d: -f1 < /etc/passwd # all users

jq

8 Printing

lpr # print
lp # print file
-o sides # set options
pr # print pagination
lpc # control printer
lpq # show printer queue
lprm # cancel print job
cupsenable # start cups printers
cupsdisable # stop cups printers
lpadmin # config cups printers
lpoptions # set printer options
pdfunite a b x # combine pdf (a,b) \rightarrow x
pdftk a cat 1,3,7 # advanced pdf manip.

9 Security

chown # Δ file owner, group
chmod # Δ file mode bits
sudo # take on root priv
visudo # edit sudoers file
vipw # edit /etc/passwd
vipr # edit /etc/group
id # real & effective ID
getfacl # show ACL
setfacl # access control list
whoami # print user id
chgrp # Δ grp ownership
chroot # Δ & run w/ new root
shred # overwrite / destroy file
umask # set file creation mask

Users

useradd	# add new user
newusers	# batch add users
passwd	# Δ user password
groups	# groups a user is in
userdel	# delete user
chfn	# change user info
useradd	# add a new user
userdel	# delete user
usermod	# modify user account

Groups

groupadd	# add group
newgrp	# login to new group
groupdel	# delete group
groupmod	# modify group
grpck	# verify group file integ

10 Network

Inquire

ifconfig	# configure net interface
ping	# ICMP request
host	# DNS lookup
hosts	# static host lookup
ip-address	# protocol address mgmt
route	# show IP routing table

Connect

ssh	# ...client
telnet	# ...client interface
wget	# network downloader
curl	# transfer a URL
curlftpfs	# mount FTP
scp	# secure copy
rsync	# remote copy (insecure)

X Window System

startx	# start X-window session
xauth	# X-system authorization
xdpyinfo	# display X info
xhost	# server access control
xinit	# X initializer

Investigate

iptables	# packet filtering, NAT
tracert	# print route packets
tracert	# trace path to host
nslookup	# query nameservers
nsupdate	# Nameserver update rqst
ifstat	# read network stats
ethtool	# query network driver
dhclient	# DHCP client
rkill	# end wireless connectn
hciconfig	# Bluetooth config
hcid	# Bluetooth config
rfcomm	# print netwk connectns

arp	# IPv4 ARP 'hood
ifdown	# turn off interface
ifup	# turn on interface

Snoop

top	# top linux processes
lsof	# list open files
wireshark	# network analysis
tcpdump	# dump network traffic
ss	# sockets investigation
route	# IP routing table
ngrep	# grep for network
nload	# network usage
netwatch	# ethernet monitor
netstat	# various network info
netsniff	# packet sniffing
ncat	#
nc	#

11 Documentation

apropos	# search whatis database
whatis	# search whatis database
catman	# create man pages
info	# read info docs
mandb	# create manual cachce
manpath	# set manual search path

12 Package Management

yum

apt-get

dpkg

13 Miscellaneous

date	# set/print date
cal	# display calendar
man	# ulmanual
busybox	# mount FTP server

14 Gnome UI

Windows & Workspace Hotkeys

\mathbb{W} \uparrow (\mathbb{W} \downarrow)	# goto workspace up (dwn)
\uparrow \mathbb{W} \uparrow (\uparrow \mathbb{W} \downarrow)	# move app to WS up (down)
\mathbb{W} \leftarrow	# window adjustment mode
\mathbb{W} m	# toggle window maximize
\mathbb{W} \downarrow	# minimize window
\mathbb{W} q	# close window
\mathbb{W} space	# open application menu
\uparrow \mathbb{W} \leftarrow	# split left
\uparrow \mathbb{W} \rightarrow	# split left
\mathbb{W} /	# launcher
\mathbb{W} '	# cycle app window
\mathbb{W} \rightarrow	# cycle window
\mathbb{W} \rightarrow	# cycle window in WS
\mathbb{W} \downarrow	# cycle win in WS, immed

Command Hotkeys

\mathbb{W} s	# settings
\mathbb{W} t	# launch terminal
\mathbb{W} j	# launch julia
\mathbb{W} b	# launch browser
\mathbb{W} l	# lock screen
\mathbb{W} a	# applications
\mathbb{W} d	# show desktop
\mathbb{W} f	# open folders

Screenshot Hotkeys

\mathbb{W} print	# screenshot \rightarrow /Picture
\uparrow print	# area screen \rightarrow /Pictures
\wedge \mathbb{W} print	# win screenshot \rightarrow clip
\uparrow \wedge print	# area screen \rightarrow clipboard
print	# save screenshot to /Pictures

Browser Hotkeys

\mathbb{W} \leftarrow	# back
\mathbb{W} \rightarrow	# forward
\mathbb{W} \rightarrow	# cycle tabs in browser
\wedge t	# new browser tab
\wedge n	# new browser window
\wedge d	# bookmark this page
\wedge w	# close tab
\wedge \uparrow t	# undo close tab
\wedge pageup	# move to next tab
\wedge k	# focus search bar

Browser Media Hotkeys (Firefox)

Must first be in focus, then ...

space	# toggle play
\uparrow	# volume up / down
\wedge \uparrow	# mute / unmute
\leftarrow	# seek back / forward (s)
\wedge \leftarrow	# seek back / forward (%)
\wedge home	# beginning / end

Terminal Hotkeys

\mathbb{W} l	# clear screen (bash)
\uparrow \wedge t	# new tab
\uparrow \wedge n	# new window
\uparrow \wedge w	# close tab
\uparrow \wedge q	# close window
\uparrow \wedge \uparrow	# scroll up (line)
\uparrow pageup	# scroll up (page)
\uparrow home	# scroll to top
\mathbb{W} b	# back one word
\wedge a	# beginning of line

Terminals

\mathbb{W} t	# new term
term	# Gnome term
alacrity	# rust-term
tmux	# term multiplexer

"	#
---	---

tmux CLI

tmux -s <name>	# new session
tmux ls	# all sessions
tmux attach -t <name>	# reconnect
tmux rename-session	# rename
tmux list-windows	#

tmux key bindings

Configurable <pre>fix key is <ctl>-t (<ctl>-b by default):

<pre>% <pre>"	# split horiz/vert
<pre> <pre>-	# ibid, custom
<pre><=> <pre><=>	# move \rightarrow pane
<pre>p <pre>n	# prev/next wind
<pre><name>	# move \rightarrow wind
<pre>d	# detach
<pre>c	# create wind
<pre>?	# help
<pre>!	# pane \rightarrow new wind
<pre>z	# toggle fullscreen
<pre> <ctl><=><=><=><=>	# resize pane
<pre> <ctl><hjkl>	# ibid, custom
<pre>,<	# rename window

tmux config

See here for basic .tmux.conf config, and here for a full book.