

## KEY LINUX COMMANDS

### Documentation:

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man - Format and display the on-line manual pages  
help - Display help info about Bash builtin commands  
info - Read/display Info documents  
manpath - Determine user's search path for man pages  
apropos - Search the whatis database for strings  
whatis - Search the whatis database for complete words

### Command/File Information:

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which - Shows the full path of a command ("broken" non-GNU version on Debian-based!)  
whereis - Locate the binary, source, and manual page files for a command  
locate, slocate - Find file paths containing string using slocate database  
find - Search for files in a directory hierarchy  
type - Show if command is alias, etc.  
file - Determine type of file  
namei - Show types of file path components (e.g., directory, symlink)

### File Operations:

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cat - Concatenate files and display on the standard output  
tac - Concatenate and display files in reverse  
more, less - Output file page by page  
tail - Output the last part of files (tailf to follow log files)  
head - Output the first part of files  
rm - Remove files (or directories)  
mv - Move (rename) files  
cp - Copy files and directories  
rename - Rename files (nonstandard, varies among distros)  
grep, egrep, fgrep - Display lines matching a pattern  
ln - Make a hard/soft link to a file  
dd - Convert and copy a file (or device)  
od - Dump files in octal and other formats

### File Properties:

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chmod - Change file access permissions  
chown - Change file owner (and group)  
chgrp - Change group ownership  
stat - Display file or filesystem status  
touch - Change file timestamps (or create empty file)  
wc - Display the number of newlines, words, and bytes in files

### Directory Operations:

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ls - List directory contents  
pwd - Display name of current working directory  
cd - Change directory  
mkdir - Make directories  
rmdir - Remove empty directories  
du - Estimate file space usage  
pushd - cd and add directory to the directory stack [Bash builtin]  
popd - Remove directory from directory stack and cd [Bash builtin]  
dirs - Display the currently remembered directories [Bash builtin]  
tree - List contents of directories in a tree-like format

### File Comparison:

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diff - Compare 2 files line by line  
sdiff - Side-by-side diff  
cmp - Compare 2 files byte by byte  
comm - Compare sorted files by line  
diff3 - Compare 3 files line by line  
patch - Apply a diff file to patch a file

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### Filters:

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cat - Concatenate and write files  
colrm - Remove columns from text  
column - Columnate lists  
csplit - Split by context  
cut - Display selected parts of lines  
envsubst - Convert shell vars to environment values  
expand - Convert tabs to spaces  
fmt - Reformat paragraph text  
fold - Wrap long input lines  
grep, egrep, fgrep - Display lines matching a pattern  
head - Output the first part of files  
join - Join lines on a common field  
nl - Number lines and write files  
paste - Merge lines of files  
pr - Paginate or columnate files  
rev - Reverse order of characters in line in files  
sed - Stream editor  
seq - Display a sequence/list of numbers  
sort - Sort text files  
split - Split into fixed-size pieces  
tac - Reverse order of lines in files  
tail - Output the last part of files  
tee - Redirect to multiple files  
tr - Translate characters  
tsort - Topological sort  
unexpand - Convert spaces to tabs  
uniq - Uniquify files  
wc - Display the number of newlines, words, and bytes in files  
xargs - Convert standard input to command argument(s)

### Environment Variables, Aliases, and Functions:

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printenv - Display (select or all) environment variable values  
export - Move shell variable to environment (so inherited by children) [Bash builtin]  
locale - Get locale-specific information  
set - Display values of all shell/environment variables and functions  
unset - Remove/undefine a variable [Bash builtin]  
declare - Show (or set) shell variables/functions [Bash builtin]  
env - Run a program in a modified environment  
setenv, unsetenv - Set/remove environment variable value [C shell]  
alias - Show (or set) alias value for command  
unalias - Remove/unset alias

### Processes:

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ps - Snapshot of the current processes  
pstree - Display a tree of the current processes  
top - Display current running processes (realtime updating)  
pidof -- Find the PID of a program by name  
kill - Terminate a process (send a signal) by PID  
killall - Kill processes by name  
pgrep, pkill - Look up or signal processes based on name and other attributes  
lsof - List open files  
fuser - Identify processes using files or sockets  
lslocks - List local system locks  
id - Display UID and GID info for current process  
umask - Set process' file creation permissions mask [Bash builtin]  
ulimit - Control process resources limits [Bash builtin]  
prlimit - Get and set a process resource limits  
nice - Run a program with modified scheduling priority  
renice - Alter priority of running process(es)  
chrt - Manipulate the real-time attributes of a process  
taskset - Set/retrieve a process's CPU affinity

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### Login, Shell/Command, Logout:

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su - Run as a substitute user (e.g., root)  
sudo - Execute a command as another user (e.g., root)  
exit - Exit a shell  
logout - Logout/exit a login shell (e.g., SSH shell)  
passwd - Change a user's password  
chroot - Run command or interactive shell with special root directory  
runuser - Run command with substitute user and group ID

### Remote Login and File Transfer:

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ssh - Secure remote login/shell  
sftp - Secure file transfer program  
scp - Secure remote file copy  
rsh - Remote login/shell (insecure!)  
rlogin - Remote login (insecure!)  
ftp - File transfer program (insecure!)  
rcp - Remote file copy (insecure!)  
wget - Non-interactive network downloader (HTTP,FTP)  
curl - Transfer a URL (many protocols supported)  
rsync - Remote file copying and synchronization

### Users/Groups Administration:

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passwd - Update a user's password  
chsh - Change your login shell  
useradd - Create a new user or update default new user information  
userdel - Delete a user account and related files  
usermod - Modify a user account  
groupadd - Create a new group  
groupdel - Delete a group  
groupmod - Modify a group

### System Information:

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hostname - Show or set the system's host name  
uname - Display system (kernel, etc.) information  
uptime - Tell how long the system has been running  
free - Display amount of free and used memory in the system  
vmstat - Report virtual memory statistics  
dmesg - Display or control the kernel ring buffer (e.g., boot messages)  
id - Display UID and GID info for current user or specified username  
last, lastb - Display list of recent logins/failed logins  
finger - Display information about system users (often disabled now)  
who - Show who is logged in (often disabled now)  
w - Show who is logged on and what they are doing

### Printing and Formatting:

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lp, lpr - Print files  
lpq - Show printer queue status  
lprm - Cancel print jobs  
lpinfo - Show available printers  
lpstat - Show CUPS status information  
lpoptions - Show/set printer options  
lpadmin -- Configure CUPS printer queues  
cupsenable, cupsdisable - Start/stop printers  
cupsctl - View/change cupsd options in cupsd.conf  
enscript - Convert text files to PostScript for printing, etc.  
a2ps - Format files for printing on a PostScript printer  
mpage - Print multiple pages per sheet on PostScript printer  
psnup - Put multiple Postscript pages per sheet

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### Filesystems Information and Operations:

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df - Report (mounted) filesystems and disk space usage  
mount - Mount a filesystem  
umount - Unmount filesystem  
findmnt - Find and list mounted filesystems  
mountpoint - See if a directory is a mountpoint  
findfs - Find a filesystem by label or UUID  
fdisk, sfdisk, cfdisk - Manipulate disk partition table (MBR style)  
gdisk, sgdisk, cgdisk - Manipulate disk partition table (GUID/GPT style)  
parted, gparted - GNU partition manipulation program  
mkfs, mkfs.TYPE - Build a Linux filesystem  
mke2fs - Build an ext2/ext3/ext4 filesystem  
tune2fs - Adjust tunable filesystem parameters on ext2/ext3/ext4 filesystems  
fsck, fsck.TYPE - Check and repair a Linux filesystem  
e2fsck - Check an ext2/ext3/ext4 filesystem  
fstrim - Discard unused blocks on a mounted SSD filesystem  
mkswap - Set up a Linux swap area  
swapon, swapoff - Enable/disable devices and files for swapping  
swaponlabel - Display or change the label or UUID of swap area  
mknod - Make block or character special files  
losetup - Setup and control loop devices

### Network:

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ip - Show/manipulate routing, devices, policy routing and tunnels (new)  
ss - Show socket info (new, remember as Socket Statistics)  
ifconfig - Configure/check a network interface (newer: ip addr, ip link)  
netstat - Display network connections, routing tables, etc. (newer: ss, ip)  
route - Show/manipulate the IP routing table (newer: ip route)  
ethtool, mii-tool - Display or change ethernet card settings  
ping, ping6 - Send ICMP ECHO\_REQUEST to network hosts  
traceroute - Display the route packets take to network host  
host, dig, nslookup - DNS lookup utilities  
whois - Client for the whois directory service (DNS)  
ifup, ifdown - Start/stop a network interface  
arp - Manipulate the system ARP cache  
arping - Send ARP REQUEST to a neighbour host  
iptables - Administration tool for IPv4 packet filtering and NAT  
iwconfig - Configure a wireless network interface  
iwlist - Get detailed wireless interface information  
iwpriv - Configure driver-specific parameters of a wireless network interface  
wspy - Get wireless statistics from specific nodes

### Hardware:

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hdparm - Get/set hard disk parameters  
lscpu - Display information about the CPU  
lsblk - List block devices  
lshw - List hardware  
lspci - List all PCI devices  
lsscsi - List all SCSI devices  
lsusb - List USB devices  
usbview - Display information on USB devices  
systool - View system device information by bus, class, and topology  
blkid - Display block device attributes  
blockdev - Call block device ioctls from the command line  
eject - Eject removable media  
isosize - Output length of an ISO9660 filesystem in image file/device  
dmidecode - Decode/dump BIOS info

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### Terminal:

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stty - Change and display terminal line settings  
reset, tset - Terminal initialization  
clear - Clear the terminal screen  
tty - Print the pathname of the terminal connected to standard input

### X Server:

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Xorg - Configure X.org server  
xorgcfg - Graphical configuration tool for X.org server  
xorgconfig - Generate an xorg.conf file  
cvt - Calculate VESA CVT mode lines for xorg.conf  
gtf - Calculate VESA GTF mode lines for xorg.conf (older)  
xrandr - Get/set resolution, etc.  
xdpyinfo - X server settings/info  
xauth - X authorization utility  
xhost - X access control  
xmodmap - View/set key/mouse mappings  
setxkbmap - Set keyboard using the X Keyboard Extension (XKB)  
xkbcomp - Compile/writeout XKB keyboard description  
xev - Monitor X events (e.g., keymaps)  
xset - Sets user preferences for many things  
xsetroot - Change the "root window" appearance  
xprop - Property displayer for X  
xdm, kdm, gdm - Display managers for X

### Booting, Startup/Runlevel, Shutdown:

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grub - Run the GRUB Legacy (boot loader) shell  
grub2-install, grub2-mkconfig, etc. - GRUB2 commands  
lilo - Install LILO boot loader  
init, telinit - Change system runlevel  
runlevel - Display previous and current SysV runlevel  
systemctl - Control the systemd system and service manager (can change runlevel)  
shutdown - Bring the system down  
halt, poweroff - Stop the system (call shutdown)  
reboot - Reboot the system (calls shutdown)  
mkrescue - Make rescue floppy (to boot disk from floppy/cd)

### Services:

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service - Start/stop/restart/status a system service/daemon  
chkconfig - Update/query runlevel information for system services  
update-rc.d, sysv-rc-conf - Update/query runlevel information for system services  
systemctl - systemd: Control systemd and manage services  
journalctl - systemd: Query the systemd journal  
loginctl - systemd: Control the systemd login manager

### Kernel Modules and Kernel Configuration:

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lsmod - Show the status of Linux kernel modules  
modprobe - Add and remove modules from the Linux kernel  
insmod - Insert a module into the Linux kernel  
rmmod - Remove a module from the Linux kernel  
modinfo - Show information about a Linux kernel module  
usbmodules - List kernel driver modules available for a USB device  
mkinitrd, dracut - Creates initial ramdisk images for preloading modules  
sysctl - Configure kernel parameters at runtime  
getconf - Get kernel/system-specific configuration values (see sysconf())



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### Job Control:

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jobs - List jobs (running in background)  
fg - Move job to foreground  
bg - Move job to background

### Shell Scripting (i.e., normally used in only scripts):

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source - Read and execute commands in a file [Bash builtin]  
true, false - Do nothing, successfully, unsuccessfully  
sleep, usleep - Suspend process for seconds/microseconds  
timeout - Run a command with a time limit  
flock - Manage file locks from shell scripts  
logger - Shell command interface to syslog

### Path Manipulation

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basename - Strip directory and suffix  
dirname - Strip non-directory suffix  
readlink - Display canonical (no symlinks, ., etc.) absolute file path  
realpath - Newer version of readlink, with more options

### Kernel Keyboard Mappings (consoles only):

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showkey - Examine the codes sent by the keyboard  
loadkeys - Load keyboard translation tables  
dumpkeys - Dump keyboard translation tables

### Messaging (between terminals, often now disabled):

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talk - Talk to another user  
write - Send a message to another user  
wall - Write a message to users  
mesg - Control display of messages from other users

### Misc:

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screen - Terminal manager/multiplexer (multiple shells on a console)  
script - Log entire shell session  
watch - Execute a program periodically, showing output fullscreen  
nohup - Run a command, making it immune to hangups (output to a non-tty)  
setsid - Run a command in a new session  
bc - An arbitrary precision calculator language (infix)  
dc - An arbitrary precision calculator language (RPN)  
hexdump - Display file contents in ascii, decimal, hexadecimal, or octal  
cal - Display a calendar  
mail, nail - Send and receive mail (command line)