

Key Linux Commands

Documentation:

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:

which - Shows the full path of a (shell) command
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

File Operations:

cat - Concatenate files and print on the standard output
tac - Concatenate and print files in reverse
more, less - Output file page by page
tail - Output the last part of files
head - Output the first part of files
rm - Remove files (or directories)
mv - Move (rename) files
cp - Copy files and directories
dd - Convert and copy a file
grep, egrep, fgrep - Print lines matching a pattern
ln - Make a hard/soft link to a file
od - Dump files in octal and other formats
source - Read and execute commands in a file [Bash builtin]
dd - Convert and copy a file (or device)

File Properties:

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 - Print the number of newlines, words, and bytes in files

Directory Operations:

ls - List directory contents
pwd - Print 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]

File Comparison:

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:

basename - Strip directory and suffix
cat - Concatenate and write files
csplit - Split by context
cut - Print selected parts of lines
dirname - Strip non-directory suffix
envsubst - Convert shell vars to environment values
expand - Convert tabs to spaces
fmt - Reformat paragraph text
fold - Wrap long input lines
grep, egrep, fgrep - Print 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
sed - Stream editor
seq - Print a sequence/list of numbers
sort - Sort text files
split - Split into fixed-size pieces
tac - Reverse 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 - Print the number of newlines, words, and bytes in files
xargs - Convert standard input to command argument(s)

Environment Variables, Aliases, and Functions:

printenv - Print (select or all) environment variable values
export - Move shell variable to environment (so inherited by children) [Bash builtin]
locale - Get locale-specific information
set - Print 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:

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
fuser, lsof - Identify processes using files or sockets
id - Print UID and GID info for current process
nice - Run a program with modified scheduling priority
renice - Alter priority of running process(es)
umask - Set process' file creation permissions mask [Bash builtin]
ulimit - Control process resources limits [Bash builtin]
chrt - manipulate the real-time attributes of a process

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Users:

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

Login, Shell/Command, Logout:

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)
chroot - Run command or interactive shell with special root directory

Remote Login and File Transfer:

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

System Information:

hostname - Show or set the system's host name
uname - Print 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 - Print or control the kernel ring buffer (e.g., boot messages)
id - Print 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.

Filesystems Information and Operations:

df - Report (mounted) filesystems and disk space usage
mount - Mount a filesystem
umount - Unmount filesystem
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
mkswap - Set up a Linux swap area
swapon, swapoff - Enable/disable devices and files for swapping
mknod - Make block or character special files
findmnt - find mounted filesystems
mountpoint - see if a directory is a mountpoint

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Printing and Formatting:

lpr - Print files
lpq - Show printer queue status
lprm - Cancel print jobs
lpstat - Print cups status information
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

Network:

ping, ping6 - Send ICMP ECHO_REQUEST to network hosts
ifconfig - Configure a network interface
ifup, ifdown - Start/stop a network interface
route - Show/manipulate the IP routing table
netstat - Print network connections, routing tables, etc.
traceroute - Print the route packets take to network host
ethtool, mii-tool - Display or change ethernet card settings
host, dig, nslookup - DNS lookup utilities
whois - Client for the whois directory service (DNS)
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

X Server:

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

Terminal:

stty - Change and print terminal line settings
reset, tset - Terminal initialization
clear - Clear the terminal screen
screen - Terminal manager/multiplexer (multiple shells on a console)

Kernel Keyboard Mappings

showkey - examine the codes sent by the keyboard
loadkeys - load keyboard translation tables
dumpkeys - dump keyboard translation tables

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Time:

date - Print or set the system date and time
hwclock - Query and set the hardware clock (RTC)
ntpd, ntpdate - Set the system date and time via NTP
time - Time a command/program and give resource usage
cal - display a calendar

Booting, Startup/Runlevel, Shutdown:

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 - Print 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:

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:

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())

Hardware Information:

hdparm - Get/set hard disk
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
blkid - locate/print block device attributes

File Integrity Checking:

md5sum - Compute and check MD5 message digest (checksum)
shasum - Compute and check SHA1 message digest (checksum)

Job Control:

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

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Archiving and Compression:

tar - Package/unpackage files (archive)
gzip, gunzip - Compress or expand files
zip, unzip - Package and compress (archive) files
bzip2, bunzip2 - Compress or expand files
bzip2 - decompresses files to stdout
compress, uncompress - Compress or expand files (old)
cpio - Copy files to and from archives
dump - ext2/3 filesystem backup

RPM Software Package Management:

rpm - basic RPM package command
urpmi - Mandriva RPM package command (understands dependencies)
urpmi.addmedia, urpme, urpmf, urpmq - various urpmi-related commands
rpmdrake - Mandriva GUI front end for urpmi
yum - RH/Fedora RPM package command (understands dependencies)
yumex - RH/Fedora GUI front end for yum

Debian Software Package Management:

dpkg - basic Debian package command
apt-get - Command line front end for APT (understands dependencies)
aptitude - Advanced text and command line front end for APT
synaptic - GUI front end for APT
dselect - Menu-driven package manager

Compiling and Libraries:

gcc -- GNU Compiler Collection (C/C++ and more compiler)
./configure - Standard command to use autoconf script to create makefile(s)
make - Build program(s) from source (invoking compiler)
ar - Create, modify, and extract from libraries (archives)
ldconfig - Update link bindings info for shared libraries
ldd - Print shared library dependencies for an executable
size - List section sizes in object and library files
nm - List symbols from object files
objdump - Display information from object files
strings - Display the printable strings in files
readelf - Display information about ELF files

Debugging

strace - Trace system calls and signals
ltrace - Trace library calls
gdb - GNU Debugger

Shell Scripting (most commonly used there)

true, false - Do nothing, successfully, unsuccessfully
sleep, usleep - suspend process for seconds/microseconds

Misc:

watch - Execute a program periodically, showing output fullscreen
mail, nail - Send and receive mail (command line)
bc - An arbitrary precision calculator language (infix)
dc - An arbitrary precision calculator language (RPN)
locale - Get locale-specific information