

File Handling on Linux: How to Manage Your Files Efficiently

If you're new to Linux, learning how to manage files through commands can significantly improve your productivity. This presentation covers basic and advanced commands with syntax and outputs.



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M

-a =>Display linux system information
-r =>Display kernel release information
-s =>Show how long the system has been running + load
me =>Show system host name
me -i =>Display the IP address of the host
root =>Show system reboot history
-c =>Show the current date and time
-m =>Show this month calendar
i =>Display who is online
user =>Who you are logged in as
user =>Display information about user

HARDWARE

acpi/cpufreq =>Detected hardware and boot messages
ac/meminfo =>CPU model
ac/interrupts =>Hardware memory
ac/interrupts =>Lists the number of interrupts per CPU per I/O device
ac/interrupts =>Displays information on hardware configuration of the system
ac/interrupts =>Displays block device related information in Linux
/ =>Used and free memory (-m for MB)
v =>Show PCI devices
v =>Show USB devices
ode =>Show hardware info from the BIOS
n -i /dev/sda =>Show info about disk sda
n -T /dev/sda =>Do a read speed test on disk sda
cks -s /dev/sda =>Test for unreadable blocks on disk sda

USERS

id admin =>Show the active user id with login and group
id -c "Sam Tomishi" =>Show last logins on the system
id admin =>Show who is logged on the system
dd admin =>Add group "admin"
d -c "Sam Tomishi" =>g admin -m sam #Create user "sam"
rm sam =>Delete user "sam"
r sam =>Add user "sam"
id =>Modify user information

COMMANDS

cd =>Display all information about files/ directories
cd . =>Show the path of current directory
mkdir directory-name =>Create a directory
rm file-name =>Delete file
rmdir directory-name =>Delete directory recursively
rm -r directory-name =>Forcefully remove directory recursively
cp file1 file2 =>Copy file1 to file2
r1 dir2 =>Copy dir1 to dir2, create dir2 if it doesn't exist
l file2 =>Rename source to dest / move source to directory
ln /to/file-name /link-name =>Create symbolic link to file-name
cat file =>Create or update file
cat -e file =>Place standard input into file
cat -e file =>Output contents of file
cat -n file =>Output first 10 lines of file
cat -n file =>Output last 10 lines of file
tail file =>Output contents of file as it grows starting with the last 10 lines
file -c file =>Encrypt file
file -d file =>Decrypt file
wc -l file =>print the number of bytes, words, and lines in files
cat -n file =>Execute command lines from standard input

PROCESS RELATED

l grep 'telnet' =>Display your currently active processes
l grep 'telnet' =>Find all process id related to telnet process
ps -a =>Memory map of process
ps -a =>Display all running processes
kill -9 process-id =>Kill process with mentioned pid id
killall proc =>Kill all processes named proc
fg process-name =>Send signal to a process with its name
fg -r suspended-jobs =>Resumes suspended jobs without bringing them to foreground
fg -m most-recent-job =>Brings the most recent job to foreground
fg -n job-n =>Brings job n to the foreground

FILE PERMISSION RELATED

chmod octal file-name =>Change the permissions of file to octal
Example chmod 777 /data/test.c =>Set rwx permission for owner/group/world
chmod 755 /data/test.c =>Set rxw permission for owner,rx for group and world
chown owner-user file =>Change owner and owner of the file
chown owner-user:owner-group file-name =>Change owner and owner of the file
chown owner-user:owner-group directory =>Change owner and owner of the directory

NETWORK

ip addr show =>Display all network interfaces and ip address (a iproute2 command, powerful than ifconfig)
ip address add 192.168.0.1 dev eth0 =>Set ip address
ethtool eth0 =>Linux tool to show ethernet status
miio eth0 =>Linux tool to show ethernet status
ping host =>Send echo request to test connection
whos domain =>Get who is information for domain
dig domain =>Reverse lookup host
dig -x host =>Get DNS information for domain
host google.com =>Lookup DNS ip address for the name
hostname -i =>Lookup local ip address
wget file =>Download file
netstat -tulp =>Listing all active listening ports

COMPRESSION / ARCHIVES

tar cf home.tar home =>Create tar named home.tar containing home
tar xf file.tar =>Extract the files from file.tar
tar czf file.tar.gz files =>Create a tar with gzip compression
gzip file =>Compress file and renames it to file.gz

INSTALL PACKAGE

rpm -i pkgnmae.rpm =>Install rpm based package
rpm -e pkgnmae =>Remove package

INSTALL FROM SOURCE

.configure
make
make install

SEARCH

grep pattern files =>Search for pattern in files
grep -r pattern dir =>Search recursively for pattern in dir
locate file =>Find all instances of file
find /home/tom -name "index" =>Find files names that start with "index"
find /home -size +10000k =>Find files larger than 10000k in /home

LOGIN (SSH AND TELNET)

ssh user@host =>Connect to host as user
ssh -p port user@host =>Connect to host using specific port
telnet host =>Connect to the system using telnet port

FILE TRANSFER

scp file.txt server2:/tmp =>Secure copy file.txt to remote host /tmp folder
rsync -a /home/apps /backup/ =>Syncronize source to destination

DISK USAGE

df -h =>Show free space on mounted filesystems
df -i =>Show free inodes on mounted filesystems
fdisk -l =>Show disks partitions sizes and types
du -ah =>Display disk usage in human readable form
du -sh =>Display total disk usage on the current directory
findmnt =>Displays target mount point for all filesystems
mount device-path mount-point =>Mount a device

DIRECTORY TRAVERSE

cd .. =>To go up one level of the directory tree
cd cd /test



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MORE DETAILED : [HTTP://LINOXIDE.COM/GUIDE/LINUX-COMMAND-SHELF.HTML](http://LINOXIDE.COM/GUIDE/LINUX-COMMAND-SHELF.HTML)

Basic File Handling Commands

`ls`

List directory contents.
Useful for navigation.

`cd`

Change the directory. Use "."
for the current directory
and ".." to go up one level

`pwd`

Print working directory.
Shows the current location
in the file hierarchy.

`mkdir`

Create a new directory.

`rmdir`

Remove an empty directory.



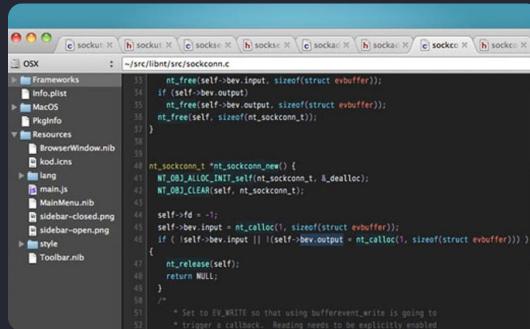
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Editing Files



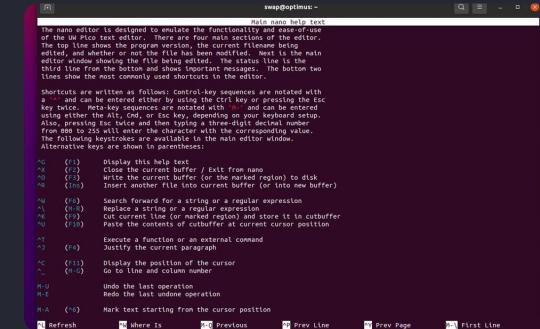
cat

Concatenate files or display their contents on the terminal.



touch

Create a new empty file or update the modification time of an existing one.



nano

Simple text editor for editing files or creating new ones.

Moving and Copying Files

1 — mv

Move or rename files/directories. Use "mv source_file destination_file".

2 — cp

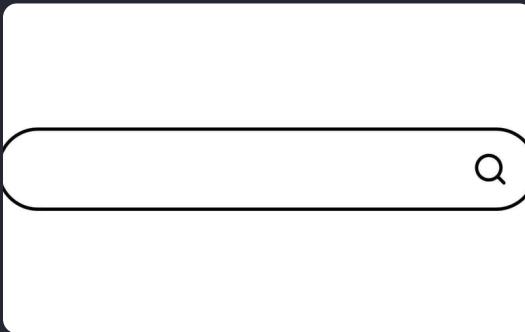
Copy files/directories. Use "cp source_file destination". The "-r" option is used for directories.

Deleting Files

1 rm

Delete files or directories. Use "-r" for directories and "-f" to force deletion without asking for confirmation.

Advanced File Handling Commands



find

Search for files and directories recursively based on specific criteria. Use "find path -name filename" or other flags.

```
Activities ◊ Terminal ◊ jd@jdbytext:~/Desktop$ grep --help
Usage: grep [OPTION]... PATTERN [FILE]...
Example: grep -i 'hello world' menu.h main.c
PATTERNS can contain multiple patterns separated by newlines.

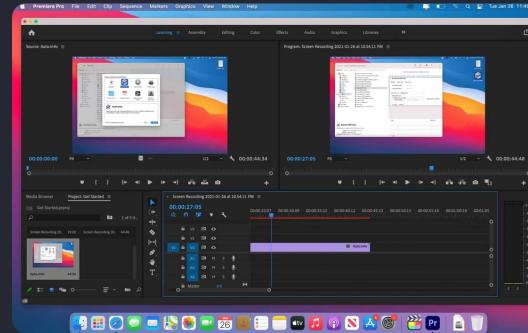
Pattern selection and interpretation:
-E, --extended-regexp          PATTERNS are extended regular expressions
-F, --fixed-strings             PATTERNS are strings
-G, --basic-regexp              PATTERNS are basic regular expressions
-P, --perl-regexp               PATTERNS are Perl regular expressions
-e, --regexp=PATTERNS          use PATTERNS for matching
-f, --file=FILE                 read patterns from FILE
-i, --ignore-case               ignore case distinctions in patterns and data
-w, --word-regexp               do not ignore case distinctions (default)
-x, --line-regexp               match only whole words
-y, --null-data                match only whole lines
-z, --null-data                a data line ends in 0 byte, not newline

Miscellaneous:
-s, --no-messages               suppress error messages
-t, --time                      print modification times
-V, --version                   display version information and exit
--help                         display this help text and exit

Output control:
-m, --max-count=NUM            stop after NUM selected lines
-h, --base-offset               print the base offset with output lines
```

grep

Search for patterns in a given file or standard input. Useful for filtering output.



sed

Stream editor. Can perform various operations on a file or standard input. Useful for writing scripts.

Conclusion and Summary

Useful Commands

- ls
- cd
- cat
- mv
- rm
- find
- grep
- sed

Efficient Workflow

Use commands regularly to perform tasks quickly. Combine them with piping and other techniques to streamline your workflow.

Practice Makes Perfect

Try out the commands on your own. Experiment and learn through experience.