

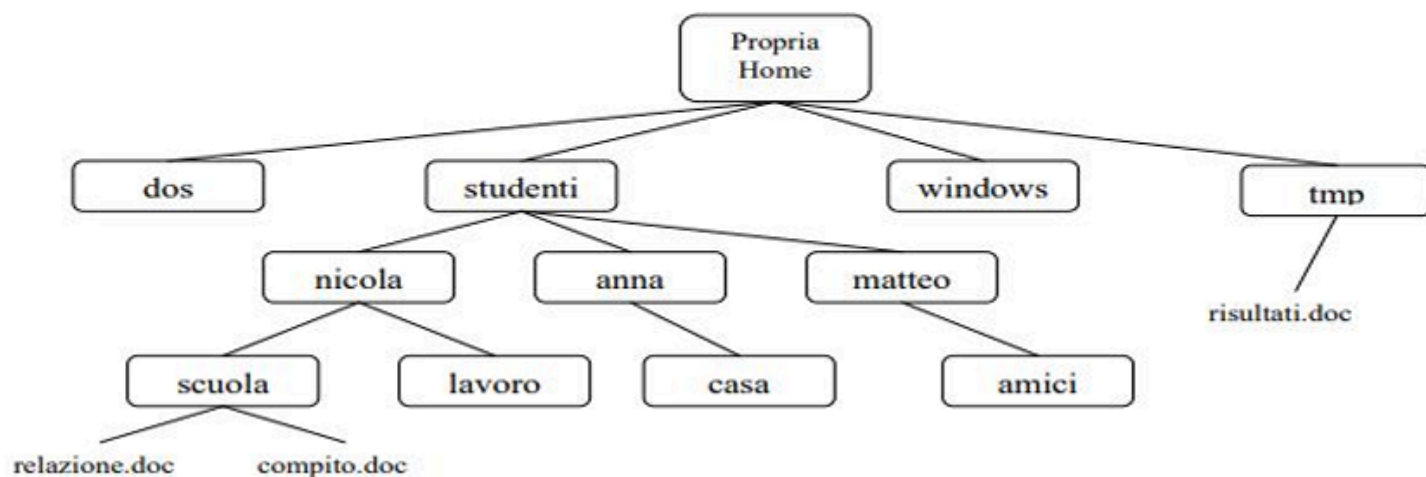
## Esercizio 1 - Esercizi Shell

### 1. Creazione directories e files come da albero mostrato in figura

#### Esercizio 1

Come prima cosa creare le seguenti cartelle e sottocartelle (usando i comandi “terminale” `mkdir` `cd` `rmdir` ... a partire dalla propria HOME e visualizzarle a video:

(Per “Propria home” si intende il posto dove vi posiziona quanto aprite il terminale!)



#### Directories presenti nella home corrente

```
(kali㉿kali)-[~]
$ pwd
/home/kali

(kali㉿kali)-[~]
$ ls
Desktop  Documents  Downloads  interfaces  Music  Pictures  pt  Public  Templates  Videos
```

#### Creazione directories e subfolders

```
(kali㉿kali)-[/home]
$ mkdir -p dos studenti/{nicola/{scuola,lavoro},anna/casa,matteo/amici} windows tmp
```

```
(kali㉿kali)-[~]
$ ls
Desktop  Documents  dos  Downloads  interfaces  Music  Pictures  pt  Public  studenti  Templates  Videos
```

```
(kali㉿kali)-[~]  
$ cd studenti  
  
(kali㉿kali)-[~/studenti]  
$ ls  
anna matteo nicola  
  
(kali㉿kali)-[~/studenti]  
$ cd nicola  
  
(kali㉿kali)-[~/studenti/nicola]  
$ ls  
lavoro scuola
```

```
(kali㉿kali)-[~/studenti/nicola]  
$ cd ../anna  
  
(kali㉿kali)-[~/studenti/anna]  
$ ls  
casa
```

```
(kali㉿kali)-[~/studenti/anna]  
$ cd ../matteo  
  
(kali㉿kali)-[~/studenti/matteo]  
$ ls  
amici
```

Creazione file in cartella scuola:

```
(kali㉿kali)-[~/studenti/matteo]  
$ cd ../nicola/scuola  
  
(kali㉿kali)-[~/studenti/nicola/scuola]  
$ touch relazione.doc compito.doc  
  
(kali㉿kali)-[~/studenti/nicola/scuola]  
$ ls  
compito.doc relazione.doc
```

```
(kali㉿kali)-[~/studenti/nicola/scuola]  
$ ls -alt  
total 8  
drwxr-xr-x 2 kali kali 4096 Jun  4 03:24 .  
-rw-r--r-- 1 kali kali    0 Jun  4 03:24 compito.doc  
-rw-r--r-- 1 kali kali    0 Jun  4 03:24 relazione.doc  
drwxr-xr-x 4 kali kali 4096 Jun  4 03:07 ..
```

Creazione file in cartella tmp:

```
(kali㉿kali)-[~/studenti/nicola/scuola]
$ cd ../../../../tmp

(kali㉿kali)-[~/tmp]
$ ls

(kali㉿kali)-[~/tmp]
$ touch risultati.doc

(kali㉿kali)-[~/tmp]
$ ls -alt
total 8
drwxr-xr-x  2 kali kali 4096 Jun  4 03:27 .
-rw-r--r--  1 kali kali   0 Jun  4 03:27 risultati.doc
drwxr-xr-x 22 kali kali 4096 Jun  4 03:07 ..
```

## 2. Svolgimento esercizio

- 1) Da directory lavoro scrivere comando per passare alla directory casa con percorso relativo e percorso assoluto

```
(kali㉿kali)-[~/studenti/nicola/lavoro]
$ pwd
/home/kali/studenti/nicola/lavoro
```

```
(kali㉿kali)-[~/studenti/nicola/lavoro]
$ cd ../../anna/casa

(kali㉿kali)-[~/studenti/anna/casa]
$ pwd
/home/kali/studenti/anna/casa
```

- a) Copia file compito.doc da directory scuola nella directory corrente

```
(kali㉿kali)-[~/studenti/anna/casa]
$ cp ~/studenti/nicola/scuola/compito.doc .

(kali㉿kali)-[~/studenti/anna/casa]
$ ls -alt
total 8
drwxr-xr-x 2 kali kali 4096 Jun  4 04:01 .
-rw-r--r-- 1 kali kali   0 Jun  4 04:01 compito.doc
drwxr-xr-x 3 kali kali 4096 Jun  4 03:12 ..
```

- b) Sposta il file relazione.doc nella directory corrente (casa)

```
(kali㉿kali)-[~/studenti/anna/casa]
$ mv ~/studenti/nicola/scuola/relazione.doc .

(kali㉿kali)-[~/studenti/anna/casa]
$ ls
compito.doc  relazione.doc
```

Il file era prima nella cartella scuola, ora è stato spostato:

```
(kali㉿kali)-[~/studenti/anna/casa]
$ cd ../../nicola/scuola

(kali㉿kali)-[~/studenti/nicola/scuola]
$ ls
compito.doc
```

- c) Cancella cartella /tmp

```
(kali㉿kali)-[~]
$ rmdir -r tmp
rmdir: invalid option -- 'r'
Try 'rmdir --help' for more information.

(kali㉿kali)-[~]
$ rm -r tmp

(kali㉿kali)-[~]
$ ls
Desktop  Documents  dos  Downloads  interfaces  Music  Pictures  pt  Public  studenti  Templates  Videos  windows
```

```
(kali㉿kali)-[~/tmp]
$ rmdir --help
Usage: rmdir [OPTION]... DIRECTORY...
Remove the DIRECTORY(ies), if they are empty.

    --ignore-fail-on-non-empty  ignore each failure to remove a non-empty directory
-p, --parents                  remove DIRECTORY and its ancestors;
                              e.g., 'rmdir -p a/b' is similar to 'rmdir a/b a'

-v, --verbose                  output a diagnostic for every directory processed
--help                        display this help and exit
--version                      output version information and exit

GNU coreutils online help: <https://www.gnu.org/software/coreutils/>
Full documentation <https://www.gnu.org/software/coreutils/rmdir>
or available locally via: info '(coreutils) rmdir invocation'
```

d) Creare file pippo.txt nella cartella lavoro

```
(kali㉿kali)-[~]
$ touch ~/studenti/nicola/lavoro/pippo.txt

(kali㉿kali)-[~]
$ cd studenti/nicola/lavoro

(kali㉿kali)-[~/studenti/nicola/lavoro]
$ ls -alt
total 8
drwxr-xr-x 2 kali kali 4096 Jun  4 04:16 .
-rw-r--r-- 1 kali kali   0 Jun  4 04:16 pippo.txt
drwxr-xr-x 4 kali kali 4096 Jun  4 03:07 ..
```

d) Cambiare attributi del file pippo.txt e renderlo scrivibile e leggibile solo per il proprietario. Per tutti gli altri solo leggibile

**Il file pippo.txt è già scrivibile e leggibile solo per il proprietario, e solo leggibile per tutti gli altri, come da screenshot sopra.**

f) Nascondere il contenuto della cartella anna

```
(kali㉿kali)-[~/studenti/nicola/lavoro]
$ mv ~/studenti/anna/casa .casa
```

```

(kali㉿kali)-[~/studenti/nicola/lavoro]
$ cd ../../anna

(kali㉿kali)-[~/studenti/anna]
$ ls -alt
total 8
drwxr-xr-x 2 kali kali 4096 Jun  4 04:23 .
drwxr-xr-x 5 kali kali 4096 Jun  4 03:07 ..

```

La cartella casa non è più visibile. Lo era invece in precedenza:

```

(kali㉿kali)-[~/studenti/nicola]
$ cd ../anna

(kali㉿kali)-[~/studenti/anna]
$ ls
casa

```

g) Spostarsi nella cartella lavoro e visualizzare il contenuto del file pippo.txt

```

(kali㉿kali)-[~/studenti/anna]
$ cd ../nicola/lavoro

(kali㉿kali)-[~/studenti/nicola/lavoro]
$ cat pippo.txt

```

Il file pippo.txt è vuoto, ma è presente nella cartella lavoro

```

(kali㉿kali)-[~/studenti/nicola/lavoro]
$ ls
pippo.txt

```

Si può aggiungere contenuto a un file con il comando “echo”

```

(kali㉿kali)-[~/studenti/nicola/lavoro]
$ echo "Ciao sono Pippo" >> pippo.txt

(kali㉿kali)-[~/studenti/nicola/lavoro]
$ cat pippo.txt
Ciao sono Pippo

```

```

(kali㉿kali)-[~/studenti/nicola/lavoro]
$ echo "Mi piace il gelato" >> pippo.txt | cat pippo.txt
Ciao sono Pippo
Mi piace il gelato

```

h) Rimuovere la cartella amici

```
(kali㉿kali)-[~/studenti/nicola/lavoro]
$ cd ../../matteo

(kali㉿kali)-[~/studenti/matteo]
$ ls
amici

(kali㉿kali)-[~/studenti/matteo]
$ rmdir -r amici
rmdir: invalid option -- 'r'
Try 'rmdir --help' for more information.

(kali㉿kali)-[~/studenti/matteo]
$ rmdir --help
Usage: rmdir [OPTION]... DIRECTORY...
Remove the DIRECTORY(ies), if they are empty.

    --ignore-fail-on-non-empty  ignore each failure to remove a non-empty directory
-p, --parents                  remove DIRECTORY and its ancestors;
                                e.g., 'rmdir -p a/b' is similar to 'rmdir a/b a'

-v, --verbose                  output a diagnostic for every directory processed
--help                          display this help and exit
--version                      output version information and exit

GNU coreutils online help: <https://www.gnu.org/software/coreutils/>
Full documentation <https://www.gnu.org/software/coreutils/rmdir>
or available locally via: info '(coreutils) rmdir invocation'

(kali㉿kali)-[~/studenti/matteo]
$ rm -r amici

(kali㉿kali)-[~/studenti/matteo]
$ ls

(kali㉿kali)-[~/studenti/matteo]
$
```

i) Rimuovere tutte le cartelle precedentemente create (la cartella tmp è già stata rimossa al passo c)

```
(kali㉿kali)-[~]  
$ ls  
Desktop  Documents  dos  Downloads  interfaces  Music  Pictures  pt  Public  studenti  Templates  V  
  
(kali㉿kali)-[~]  
$ rm -r dos studenti windows  
  
(kali㉿kali)-[~]  
$ ls  
Desktop  Documents  Downloads  interfaces  Music  Pictures  pt  Public  Templates  Videos
```



## Esercizio 2

### 1. Prova comando w:

- fornisce informazioni su chi sta utilizzando la macchina (USER),
- il terminale in utilizzo (tty),
- indica il remote host o indirizzi IP a cui è collegato l'utente (FROM),
- l'ora di login (LOGIN@),
- la durata dell'inattività dell'utente dall'ultima interazione (IDLE),
- CPU utilizzata da tutti gli utenti collegati alla sessione in corso (JCPU),
- la CPU utilizzata dal processo corrente (PCPU),
- fornisce informazioni sul comando/processo in corso nella sessione (WHAT)

```
(kali㉿kali)-[~]  
$ w  
07:17:42 up 4:31, 1 user, load average: 0.00, 0.01, 0.00  
USER      TTY      FROM            LOGIN@   IDLE   JCPU   PCPU WHAT  
kali      -                02:47    4:24m   0.00s  0.06s lightdm --session-child 13 24
```

### 2. prova comando who - fornisce una lista degli utenti collegati. Le informazioni mostrate sono il nome utente (kali), il terminal di login (tty7), oltre al giorno e l'ora di login

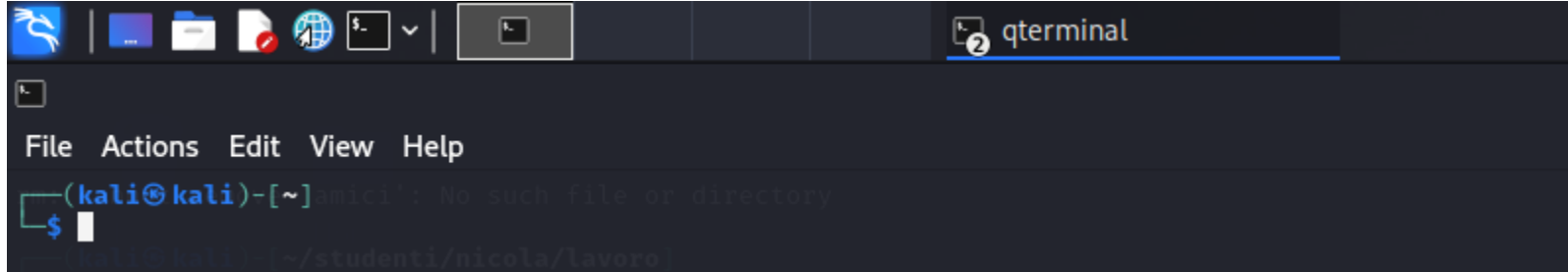
```
(kali㉿kali)-[~]  
$ who  
kali      tty7                2024-06-04 02:47 (:0)
```

### 3. prova comando whoami - mostra nome utente

```
(kali㉿kali)-[~]  
$ whoami  
kali
```

# ESERCIZI - PROCESSI

## 1) Aprire un terminale



## 2) Leggere il manuale del comando job, ps e kill

```
kali@kali: ~  
File Actions Edit View Help  
PS(1) job remove 'jobid': No such file or directory User Commands  
NAME  
  ps - report a snapshot of the current processes.  
SYNOPSIS  
  ps [options] [tudenti/nicola/lavaro  
DESCRIPTION  
  ps displays information about a selection of the active processes. If you want a repetitive update of the selection and the displayed information, use top instead.  
  This version of ps accepts several kinds of options:  
  1 UNIX options, which may be grouped and must be preceded by a dash.  
  2 BSD options, which may be grouped and must not be used with a dash.  
  3 GNU long options, which are preceded by two dashes.  
  Options of different types may be freely mixed, but conflicts can appear. There are some synonymous options, which are functionally identical, due to the many with.  
  By default, ps selects all processes with the same effective user ID (euid=EUID) as the current user and associated with the same terminal as the invoker. It displ the process (tname=TTY), the cumulated CPU time in [DD-]hh:mm:ss format (time=TIME), and the executable name (ucmd=CMD). Output is unsorted by default.  
  The use of BSD-style options will add process state (stat=STAT) to the default display and show the command args (args=COMMAND) instead of the executable name. Yo The use of BSD-style options will also change the process selection to include processes on other terminals (TTys) that are owned by you; alternately, this may be d processes filtered to exclude processes owned by other users or not on a terminal. These effects are not considered when options are described as being "identical"  
  Except as described below, process selection options are additive. The default selection is discarded, and then the selected processes are added to the set of pr meets any of the given selection criteria.  
EXAMPLES  
  To see every process on the system using standard syntax:  
  ps -e  
  ps -ef  
  ps -eF  
  ps -ely  
  To see every process on the system using BSD syntax:  
  ps ax  
  ps axu  
  To print a process tree:  
  ps -ejH  
  ps axjf  
  To get info about threads: (not skip (Ctrl-D) | quit (Ctrl-C) )  
  ps -elf  
  ps axms  
  To get security info:  
  ps -eo euser,ruser,suser,fuser,f,comm,label  
  ps axZ  
Manual page ps(1) line 1 (press h for help or q to quit)
```

```
(kali@kali)-[~]studenti/matteo  
$ man job ps kill  
No manual entry for job DIRECTORY ...  
--Man-- (next: kill(1) [ view (return) | skip (Ctrl-D) | quit (Ctrl-C) ]  
--ignore-fail-on-non-empty
```

La zsh ci avvisa che non esiste un manuale salvato per il comando job. Premendo enter si può accedere al seguente manuale, quello del comando kill

```
kali@kali: ~$ qterminal
kali@kali: ~$ kill(1)
File Actions Edit View Help
KILL(1) User Commands KILL(1)
NAME
  kill - send a signal to a process
SYNOPSIS
  kill [options] <pid> [...]
DESCRIPTION
  The default signal for kill is TERM. Use -l or -L to list available signals. Particularly useful signals include HUP, INT, KILL, STOP, CONT, and 0. Alternate signals may be specified in three ways: -9, -SIGKILL or -KILL. Negative PID values may be used to choose whole process groups; see the PGID column in ps command output. A PID of -1 is special; it indicates all processes except the kill process itself and init.
OPTIONS
  <pid> [...]
    Send signal to every <pid> listed.
  -<signal>
  -s <signal>
  --signal <signal>
    Specify the signal to be sent. The signal can be specified by using name or number. The behavior of signals is explained in signal(7) manual page.
  -q, --queue value
    Use sigqueue(3) rather than kill(2) and the value argument is used to specify an integer to be sent with the signal. If the receiving process has installed a handler for this signal using the SA_SIGINFO flag to sigaction(2), then it can obtain this data via the si_value field of the siginfo_t structure.
  -l, --list [signal]
    List signal names. This option has optional argument, which will convert signal number to signal name, or other way round.
  -L, --table
    List signal names in a nice table.
NOTES
  Your shell (command line interpreter) may have a built-in kill command. You may need to run the command described here as /bin/kill to solve the conflict.
EXAMPLES
  kill -9 -1
    Kill all processes you can kill.
  kill -l 11
    Translate number 11 into a signal name.
  kill -L
    List the available signal choices in a nice table.
  kill 123 543 2341 3453
    Send the default signal, SIGTERM, to all those processes.
SEE ALSO
  kill(2), killall(1), nice(1), pkill(1), renice(1), signal(7), sigqueue(3), skill(1)
STANDARDS
  This command meets appropriate standards. The -L flag is Linux-specific.
Manual page kill(1) line 1 (press h for help or q to quit)
```

```
(kali@kali)-[~]
$ whatis job
job: nothing appropriate.

(kali@kali)-[~]
$ whatis kill
kill (1) next: kill(1)-[send a signal to a process]-D | quit (Ctrl-C)

(kali@kali)-[~]
$ whatis ps
ps (1) - report a snapshot of the current processes.
```

```
(kali㉿kali)-[~] output a diagnostic for every
$ man -f job ls      display this help and exit
ls (1) --version      -l -list directory contents a
job: nothing appropriate.
GNU coreutils online help: <https://www.gnu.org/
(kali㉿kali)-[~] https://www.gnu.org/software/
$ man -k job        call via: info '(coreutils) imdi
job: nothing appropriate.
```

## Neanche il comando info mostra informazioni sul comando jobs

```
(kali㉿kali)-[~]
└─$ info jobs
info: No menu item 'jobs' in node '(dir)Top'
└─$ info job
info: No menu item 'job' in node '(dir)Top'
```

```
(kali㉿kali)-[~]
$ apropos job for job
job: nothing appropriate.

(kali㉿kali)-[~]
$ apropos jobs ~/studenti/mat
jobs: nothing appropriate.
```

**Jobs è uno shell builtin command, dunque il manuale del comando è integrato nel manuale della bash:**

```
(kali㉿kali)-[~]
└─$ man jobs
No manual entry for jobs
Remove the DIRECTORY(ies), if th
└─(kali㉿kali)-[~]
└─$ type -a jobs
jobs is a shell builtin
```

```

(kali@kali)~$ man bash | grep 'jobs'
    *
    * various process IDs, including those of background jobs, the value of $$, and the value of PPID
    *
The shell exits by default upon receipt of a SIGHUP. Before exiting, an interactive shell resends the SIGHUP to all jobs, running or stopped. Stopped jobs are sent SIGCONT to ensure that they receive the SIGHUP. To prevent the
shell from sending the signal to a particular job, it should be removed from the jobs table with the disown builtin (see SHELL BUILTIN COMMANDS below) or marked to not receive SIGHUP using disown -h.
If the huponexit shell option has been set with shopt, bash sends a SIGHUP to all jobs when an interactive login shell exits.
The shell associates a job with each pipeline. It keeps a table of currently executing jobs, which may be listed with the jobs command. When bash starts a job asynchronously (in the background), it prints a line that looks
There are a number of ways to refer to a job in the shell. The character % introduces a job specification (jobspec). Job number n may be referred to as %n. A job may also be referred to using a prefix of the name used to start
job stopped while it was in the foreground or started in the background. The previous job may be referenced using %-. If there is only a single job, %+ and %- can both be used to refer to that job. In output pertaining to jobs
(e.g., the output of the jobs command), the current job is always flagged with a +, and the previous job with a -. A single % (with no accompanying job specification) also refers to the current job.
If an attempt to exit bash is made while jobs are stopped (or, if the checkjobs shell option has been enabled using the shopt builtin, running), the shell prints a warning message, and, if the checkjobs option is enabled, lists
the jobs and their statuses. The jobs command may then be used to inspect their status. If a second attempt to exit is made without an intervening command, the shell does not print another warning, and any stopped jobs are ter-
minated.
    \j
    \j the number of jobs currently managed by the shell
bg [jobspec ...]
    Resume each suspended job jobspec in the background, as if it had been started with &. If jobspec is not present, the shell's notion of the current job is used. bg jobspec returns 0 unless run when job control is
disabled or, when run with job control enabled, any specified jobspec was not found or was started without job control.
    running Names of running jobs, if job control is active.
    stopped Names of stopped jobs, if job control is active.
disown [-ar] [-h] [jobspec ... | pid ...]
    Without options, remove each jobspec from the table of active jobs. If jobspec is not present, and neither the -a nor the -r option is supplied, the current job is used. If the -h option is given, each jobspec is not re-
moved from the table, but is marked so that SIGHUP is not sent to the job if the shell receives a SIGHUP. If no jobspec is supplied, the -a option means to remove or mark all jobs; the -r option without a jobspec argument
restricts operation to running jobs. The return value is 0 unless a jobspec does not specify a valid job.
fg [jobspec]
    Resume jobspec in the foreground, and make it the current job. If jobspec is not present, the shell's notion of the current job is used. The return value is that of the command placed into the foreground, or failure if
run when job control is disabled or, when run with job control enabled, if jobspec does not specify a valid job or jobspec specifies a job that was started without job control.
jobs [-lpts] [jobspec ...]
jobs -x command [ args ...]
    The first form lists the active jobs. The options have the following meanings:
    -n Display information only about jobs that have changed status since the user was last notified of their status.
    -r Display only running jobs.
    -s Display only stopped jobs.
    If jobspec is given, output is restricted to information about that job. The return status is 0 unless an invalid option is encountered or an invalid jobspec is supplied.
    If the -x option is supplied, jobs replaces any jobspec found in command or args with the corresponding process group ID, and executes command passing it args, returning its exit status.
kill [-s sigspec | -n signal | -sigspec] [pid | jobspec] ...
    Send the signal named by sigspec or signal to the processes named by pid or jobspec. sigspec is either a case-insensitive signal name such as SIGKILL (with or without the SIG prefix) or a signal number; signal is a signal
number. Report the status of terminated background jobs immediately, rather than before the next primary prompt. This is effective only when job control is enabled.
checkjobs
    If set, bash lists the status of any stopped and running jobs before exiting an interactive shell. If any jobs are running, this causes the exit to be deferred until a second exit is attempted without an interven-
ing command (see JOB CONTROL above). The shell always postpones exiting if any jobs are stopped.
    If set, bash will send SIGHUP to all jobs when an interactive login shell exits.
    If set, wait waits for all running background jobs and the last-executed process substitution, if its process id is the same as $!, and the return status is zero. If the -n option is supplied, wait waits for a single job

```

## JOB CONTROL

**Job control** refers to the ability to selectively stop (**suspend**) the execution of processes and continue them later, jointly by the operating system kernel's terminal driver and **bash**.

The shell associates a **job** with each pipeline. It keeps a table of currently executing jobs, which may be inspected with the **jobs** builtin command, like:

```
[1] 25647
```

indicating that this job is job number 1 and that the process ID of the last process in the pipeline is 25647. This is an abstraction as the basis for job control.

To facilitate the implementation of the user interface to job control, the operating system maintains the **job control** flag (which, for the current terminal process group ID) receive keyboard-generated signals such as **SIGINT**. These processes are immune to keyboard-generated signals. Only foreground processes are allowed to read from or write to the terminal (when stty tostop is in effect) the terminal are sent a **SIGTTIN (SIGTTOU)** signal by the kernel's terminal driver.

If the operating system on which **bash** is running supports job control, **bash** contains facilities to use it. The **jobs** builtin command returns control to **bash**. Typing the **delayed suspend** character (typically ^Y, Control-Y) causes the process to suspend. To manipulate the state of this job, using the **bg** command to continue it in the background, the **fg** command to bring it to the foreground, or the effect of causing pending output and typeahead to be discarded.

There are a number of ways to refer to a job in the shell. The character % introduces a job specification. A job may be referred to by its job number, or using a substring that appears in its command line. For example, %ce refers to a stopped job whose command line contains the string ce. The current job, on the other hand, refers to any job containing the string ce in its command line. If the substring matches more than one job, the job stopped while it was in the foreground or started in the background. The **previous job** may be referenced with %-. (e.g., the output of the **jobs** command), the current job is always flagged with a +, and the previous job with a -.

Simply naming a job can be used to bring it into the foreground: %1 is a synonym for `fg %1', bringing job 1 to the foreground.

The shell learns immediately whenever a job changes state. Normally, **bash** waits until it is about to print the next prompt before the builtin command is enabled, **bash** reports such changes immediately. Any trap on **SIGCHLD** is executed for each child process that terminates.

If an attempt to exit **bash** is made while jobs are stopped (or, if the **checkjobs** shell option has been enabled using the shopt builtin, running), the shell prints a warning message, and, if the checkjobs option is enabled, lists the jobs and their statuses. The **jobs** command may then be used to inspect their status. If a second attempt to exit is made without an intervening command, the shell does not print another warning, and any stopped **jobs** are terminated.

When the shell is waiting for a job or process using the **wait** builtin, and job control is enabled, **wait** waits for the job to terminate before returning.

```
jobs [-lnprs] [ jobspec ... ]
```

```
jobs -x command [ args ... ]
```

The first form lists the active jobs. The options have the following meanings:

- l List process IDs in addition to the normal information.
- n Display information only about jobs that have changed status since the user was last notified of their status.
- p List only the process ID of the job's process group leader.
- r Display only running jobs.
- s Display only stopped jobs.

If jobspec is given, output is restricted to information about that job. The return status is 0 unless an invalid option is encountered or an invalid jobspec is supplied.

If the -x option is supplied, **jobs** replaces any jobspec found in command or args with the corresponding process group ID, and executes command passing it args, returning its exit status.

**Installando le manpages-posix manualmente, si può comunque installare il manuale del comando jobs(POSIX) e ad accedere al manuale del comando jobs:**

```
kali@kali: ~  
File Actions Edit View Help  
JOBS(1POSIX) POSIX Programmer's Manual JOBS(1POSIX)  
PROLOG  
This manual page is part of the POSIX Programmer's Manual. The Linux implementation of this interface may differ (consult the corresponding Linux manual page for details of Linux behavior), or the interface may not be implemented on Linux.  
NAME  
jobs - display status of jobs in the current session  
SYNOPSIS  
jobs [-l|-p] [job_id...]  
DESCRIPTION  
The jobs utility shall display the status of jobs that were started in the current shell environment; see Section 2.12, Shell Execution Environment.  
When jobs reports the termination status of a job, the shell shall remove its process ID from the list of those ``known in the current shell execution environment''; see Section 2.9.3.1, Examples.  
OPTIONS  
The jobs utility shall conform to the Base Definitions volume of POSIX.1-2017, Section 12.2, Utility Syntax Guidelines.  
The following options shall be supported:  
-l (The letter ell.) Provide more information about each job listed. This information shall include the job number, current job, process group ID, state, and the command that formed the job.  
-p Display only the process IDs for the process group leaders of the selected jobs.  
By default, the jobs utility shall display the status of all stopped jobs, running background jobs and all jobs whose status has changed and have not been reported by the shell.  
OPERANDS  
The following operand shall be supported:  
job_id Specifies the jobs for which the status is to be displayed. If no job_id is given, the status information for all jobs shall be displayed. The format of job_id is described in the Base Definitions volume of POSIX.1-2017, Section 3.204, Job Control Job ID.  
STDIN  
Not used.  
INPUT FILES  
None.  
ENVIRONMENT VARIABLES  
The following environment variables shall affect the execution of jobs:  
LANG Provide a default value for the internationalization variables that are unset or null. (See the Base Definitions volume of POSIX.1-2017, Section 8.2, Internationalization Variables for the precedence of internationalization variables used to determine the values of locale categories.)  
LC_ALL If set to a non-empty string value, override the values of all the other internationalization variables.  
LC_CTYPE Determine the locale for the interpretation of sequences of bytes of text data as characters (for example, single-byte as opposed to multi-byte characters in arguments).  
LC_MESSAGES Determine the locale that should be used to affect the format and contents of diagnostic messages written to standard error and informative messages written to standard output.  
Manual page jobs(1posix) line 1 (press h for help or q to quit)
```

### 3) Lanciare il comando vi pippo

```
(kali@kali)-[~]  
$ vi pippo
```



Places

Computer



Desktop



Recent



Trash



Documents



Music



Pictures



Videos



Downloads

Devices



File System

Network



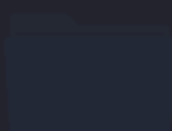
Browse Network



Desktop



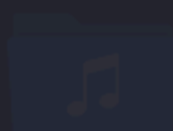
Documents



dos



Downloads



Music



Pictures

4) Aprire un nuovo terminale e visualizzare tutti i propri processi



The screenshot shows a Kali Linux desktop environment. The top panel contains several application icons on the left and a taskbar on the right with the text "jobs(1p) - Linux manual ..." and a "qterminal" window icon. The main window is a terminal titled "(kali㉿kali)-[~]". It displays the output of the "ps" command, followed by the output of "sudo ps".

```
(kali㉿kali)-[~]  
$ ps  
  PID TTY          TIME CMD  
 6839 pts/2        00:00:00 zsh  
 6943 pts/2        00:00:00 ps  
  
(kali㉿kali)-[~]  
$ sudo ps  
  PID TTY          TIME CMD  
 6950 pts/3        00:00:00 sudo  
 6951 pts/3        00:00:00 ps  
  
(kali㉿kali)-[~]  
$
```

File Actions Edit View Help

(kali@kali)-[~]

\$ sudo ps -e

PID	TTY	TIME	CMD
1	?	00:00:02	systemd
2	?	00:00:00	kthreadd
3	?	00:00:00	pool_workqueue_release
4	?	00:00:00	kworker/R-rcu_g
5	?	00:00:00	kworker/R-rcu_p
6	?	00:00:00	kworker/R-slub_
7	?	00:00:00	kworker/R-netns
10	?	00:00:00	kworker/0:0H-events_highpri
11	?	00:00:00	kworker/u4:0-ext4-rsv-conversion
12	?	00:00:00	kworker/R-mm_pe
13	?	00:00:00	rcu_tasks_kthread
14	?	00:00:00	rcu_tasks_rude_kthread
15	?	00:00:00	rcu_tasks_trace_kthread
16	?	00:00:00	ksoftirqd/0
17	?	00:00:01	rcu_preempt
18	?	00:00:00	migration/0
19	?	00:00:00	idle_inject/0
20	?	00:00:00	cpuhp/0
21	?	00:00:00	cpuhp/1
22	?	00:00:00	idle_inject/1
23	?	00:00:00	migration/1
24	?	00:00:00	ksoftirqd/1
31	?	00:00:00	kdevtmpfs
32	?	00:00:00	kworker/R-inet_
33	?	00:00:00	kauditd
35	?	00:00:00	khungtaskd
36	?	00:00:00	oom_reaper
38	?	00:00:00	kworker/R-write
39	?	00:00:00	kcompactd0
40	?	00:00:00	ksmd
41	?	00:00:00	khugepaged
42	?	00:00:00	kworker/R-kinte
43	?	00:00:00	kworker/R-kbloc
44	?	00:00:00	kworker/R-blkcg
45	?	00:00:00	kworker/R-tpm_d
46	?	00:00:00	kworker/R-edac-
47	?	00:00:00	kworker/R-devfr
49	?	00:00:00	kworker/0:1H-kblockd
50	?	00:00:00	kswapd0
58	?	00:00:00	kworker/R-kthro
60	?	00:00:00	kworker/R-acpi_
61	?	00:00:00	kworker/R-mld
62	?	00:00:00	kworker/R-ipv6_
67	?	00:00:00	kworker/R-kstrp
69	?	00:00:00	kworker/u7:0
70	?	00:00:00	kworker/u8:0
71	?	00:00:00	kworker/u9:0
169	?	00:00:00	kworker/1:1H-kblockd
172	?	00:00:00	kworker/R-crypt

File Actions Edit View Help

```

169 ?      00:00:00 kworker/1:1H-kblockd
172 ?      00:00:00 kworker/R-crypt
201 ?      00:00:00 kworker/R-ata_s
207 ?      00:00:00 scsi_eh_0
208 ?      00:00:00 kworker/R-scsi_
209 ?      00:00:00 scsi_eh_1
210 ?      00:00:00 kworker/R-scsi_
217 ?      00:00:00 scsi_eh_2
219 ?      00:00:00 kworker/R-scsi_
237 ?      00:00:00 irq/18-vmwgfx
239 ?      00:00:00 kworker/R-ttm
252 ?      00:00:00 kworker/1:2H-kblockd
294 ?      00:00:00 jbd2/sda1-8
295 ?      00:00:00 kworker/R-ext4-
355 ?      00:00:00 systemd-journal
362 ?      00:00:01 kworker/0:3-cgroup_destroy
369 ?      00:00:00 kworker/R-rpcio
370 ?      00:00:00 kworker/R-xprti
400 ?      00:00:00 systemd-udev
480 ?      00:00:00 haveged
484 ?      00:00:00 psimon
552 ?      00:00:00 accounts-daemon
553 ?      00:00:00 cron
554 ?      00:00:07 dbus-daemon
556 ?      00:00:00 polkitd
557 ?      00:00:00 rsyslogd
558 ?      00:00:00 systemd-logind
588 ?      00:00:00 NetworkManager
624 ?      00:00:00 ModemManager
652 ?      00:00:03 VBoxService
661 ?      00:00:00 lightdm
674 ?      00:00:00 kworker/u4:2-ext4-rsv-conversion
675 tty7    00:01:07 Xorg
677 tty1    00:00:00agetty
821 ?      00:00:00 rtkit-daemon
886 ?      00:00:00 lightdm
894 ?      00:00:00 systemd
895 ?      00:00:00 (sd-pam)
915 ?      00:00:00 pipewire
916 ?      00:00:01 pipewire-media-
918 ?      00:00:00 pulseaudio
919 ?      00:00:00 gnome-keyring-d
924 ?      00:00:00 dbus-daemon
932 ?      00:00:00 xfce4-session
988 ?      00:00:00 VBoxClient
989 ?      00:00:00 VBoxClient
1003 ?     00:00:00 VBoxClient
1005 ?     00:00:12 VBoxClient
1011 ?     00:00:00 VBoxClient
1013 ?     00:00:40 VBoxClient
1024 ?     00:00:00 ssh-agent
1034 ?     00:00:00 at-spi-bus-laun
1041 ?     00:00:00 dbus-daemon

```



File Actions Edit View Help

```

1034 ?      00:00:00 at-spi-bus-laun
1041 ?      00:00:00 dbus-daemon
1053 ?      00:00:02 at-spi2-registr
1068 ?      00:00:00 gpg-agent
1070 ?      00:00:00 VBoxClient
1071 ?      00:00:03 VBoxClient
1076 ?      00:00:12 xfwm4
1081 ?      00:00:00 gvfsd
1087 ?      00:00:00 gvfsd-fuse
1101 ?      00:00:03 xfsettingsd
1105 ?      00:00:05 upowerd
1113 ?      00:00:04 xfce4-panel
1118 ?      00:00:05 Thunar
1124 ?      00:00:03 xfdesktop
1125 ?      00:00:01 panel-1-whisker
1132 ?      00:00:00 panel-16-systra
1133 ?      00:00:00 panel-17-pulsea
1134 ?      00:00:00 panel-18-notifi
1135 ?      00:00:06 panel-19-power-
1136 ?      00:00:00 panel-21-action
1164 ?      00:00:02 xfce4-notifyd
1180 ?      00:00:00 xcapse
1186 ?      00:00:00 light-locker
1199 ?      00:00:00 dconf-service
1201 ?      00:00:00 polkit-mate-aut
1205 ?      00:00:00 xiccd
1221 ?      00:00:01 xfce4-power-man
1225 ?      00:00:00 blueman-applet
1227 ?      00:00:00 agent
1228 ?      00:00:00 colord
1229 ?      00:00:00 nm-applet
1243 ?      00:00:00 gvfs-udisks2-vo
1250 ?      00:00:00 udisksd
1283 ?      00:00:00 gvfs-goa-volume
1290 ?      00:00:00 gvfs-mtp-volume
1308 ?      00:00:00 gvfs-afc-volume
1321 ?      00:00:00 gvfs-gphoto2-vo
1341 ?      00:00:00 gvfsd-trash
1347 ?      00:00:00 gvfsd-metadata
1359 ?      00:00:00 blueman-tray
1369 ?      00:00:00 obexd
1395 ?      00:00:34 qterminal
1398 pts/0   00:00:45 zsh
1608 ?      00:00:00 kworker/u5:0-events_unbound
3912 ?      00:00:22 qterminal
3915 pts/1    00:00:12 zsh
4518 ?      00:00:00 kworker/u5:2-flush-8:0
4759 ?      00:00:00 kworker/0:2-events
5266 pts/1    00:00:00 info
5297 ?      00:00:00 kworker/u6:2-writeback
5341 ?      00:00:19 x-www-browser
5375 ?      00:00:00 xdg-desktop-por
5380 ?      00:00:00 xdg-document-po
    
```

File Actions Edit View Help

```

1347 ?      00:00:00 gvfsd-metadata
1359 ?      00:00:00 blueman-tray
1369 ?      00:00:00 obexd
1395 ?      00:00:34 qterminal
1398 pts/0   00:00:45 zsh
1608 ?      00:00:00 kworker/u5:0-events_unbound
3912 ?      00:00:22 qterminal
3915 pts/1    00:00:12 zsh
4518 ?      00:00:00 kworker/u5:2-flush-8:0
4759 ?      00:00:00 kworker/0:2-events
5266 pts/1    00:00:00 info
5297 ?      00:00:00 kworker/u6:2-writeback
5341 ?      00:00:19 x-www-browser
5375 ?      00:00:00 xdg-desktop-por
5380 ?      00:00:00 xdg-document-po
5384 ?      00:00:00 xdg-permission-
5391 ?      00:00:00 fusermount3
5394 ?      00:00:00 xdg-desktop-por
5419 ?      00:00:00 Socket Process
5499 ?      00:00:00 file:// Content
5542 ?      00:00:00 WebExtensions
5588 ?      00:00:00 Web Content
5591 ?      00:00:00 Web Content
5610 ?      00:00:00 Web Content
5635 ?      00:00:00 Privileged Cont
5949 ?      00:00:00 kworker/u5:1-flush-8:0
6109 ?      00:00:00 psimon
6242 ?      00:00:00 kworker/1:1-events
6452 pts/1    00:00:00 man
6459 pts/1    00:00:00 man
6460 pts/1    00:00:00 pager
6566 ?      00:00:00 kworker/u6:1-events_unbound
6686 pts/1    00:00:00 less
6711 pts/1    00:00:00 vi
6714 ?      00:00:00 xtconfd
6729 pts/1    00:00:00 man
6736 pts/1    00:00:00 man
6737 pts/1    00:00:00 pager
6815 ?      00:00:00 kworker/u6:3-flush-8:0
6830 ?      00:00:00 kworker/1:0-ata_sff
6836 ?      00:00:01 qterminal
6839 pts/2    00:00:00 zsh
6913 ?      00:00:00 kworker/0:0-cgroup_destroy
6916 ?      00:00:00 tumblerd
6928 pts/1    00:00:00 vi
6967 ?      00:00:00 kworker/u5:3
6968 ?      00:00:00 kworker/1:2-ata_sff
6993 pts/2    00:00:00 sudo
6994 pts/3    00:00:00 sudo
6995 pts/3    00:00:00 ps

```

Con il comando `ps -aux` si possono visualizzare invece tutti i processi attivi per tutti gli utenti, inclusi i processi non attivi sul proprio terminale

```
(kali㉿kali)-[~]
$ ps aux
USER          PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root            1  0.0  0.6 22724 13272 ?        Ss   02:46   0:02 /sbin/init splash
root            2  0.0  0.0      0      0 ?        S    02:46   0:00 [kthreadd]
root            3  0.0  0.0      0      0 ?        S    02:46   0:00 [pool_workqueue_release]
root            4  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/R-rcu_g]
root            5  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/R-rcu_p]
root            6  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/R-slub_]
root            7  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/R-netns]
root           10  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/0:0H-events_highpri]
root           12  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/R-mm_pe]
root           13  0.0  0.0      0      0 ?        I    02:46   0:00 [rcu_tasks_kthread]
root           14  0.0  0.0      0      0 ?        I    02:46   0:00 [rcu_tasks_rude_kthread]
root           15  0.0  0.0      0      0 ?        I    02:46   0:00 [rcu_tasks_trace_kthread]
root           16  0.0  0.0      0      0 ?        S    02:46   0:00 [ksoftirqd/0]
root           17  0.0  0.0      0      0 ?        I    02:46   0:01 [rcu_preempt]
root           18  0.0  0.0      0      0 ?        S    02:46   0:00 [migration/0]
root           19  0.0  0.0      0      0 ?        S    02:46   0:00 [idle_inject/0]
root           20  0.0  0.0      0      0 ?        S    02:46   0:00 [cpuhp/0]
root           21  0.0  0.0      0      0 ?        S    02:46   0:00 [cpuhp/1]
root           22  0.0  0.0      0      0 ?        S    02:46   0:00 [idle_inject/1]
root           23  0.0  0.0      0      0 ?        S    02:46   0:00 [migration/1]
root           24  0.0  0.0      0      0 ?        S    02:46   0:00 [ksoftirqd/1]
root           31  0.0  0.0      0      0 ?        S    02:46   0:00 [kdevtmpfs]
root           32  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/R-inet_]
root           33  0.0  0.0      0      0 ?        S    02:46   0:00 [kauditd]
root           35  0.0  0.0      0      0 ?        S    02:46   0:00 [khungtaskd]
root           36  0.0  0.0      0      0 ?        S    02:46   0:00 [oom_reaper]
root           38  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/R-write]
root           39  0.0  0.0      0      0 ?        S    02:46   0:00 [kcompactd0]
root           40  0.0  0.0      0      0 ?        SN   02:46   0:00 [ksmd]
root           41  0.0  0.0      0      0 ?        SN   02:46   0:00 [khugepaged]
root           42  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/R-kinte]
root           43  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/R-kbloc]
root           44  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/R-blkcg]
root           45  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/R-tpm_d]
root           46  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/R-edac-]
root           47  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/R-devfr]
root           49  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/0:1H-kblockd]
root           50  0.0  0.0      0      0 ?        S    02:46   0:00 [kswapd0]
root           58  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/R-kthro]
root           60  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/R-acpi_]
root           61  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/R-mld]
root           62  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/R-ipv6_]
root           67  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/R-kstrp]
root           69  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/u7:0]
root           70  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/u8:0]
root           71  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/u9:0]
root          169  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/1:1H-kblockd]
root          172  0.0  0.0      0      0 ?        I<   02:46   0:00 [kworker/R-crypt]
```

- 5) Cercare di terminare (killare) il processo vi per sbloccare il terminale precedente

```
(kali㉿kali)-[~]  
$ kill 6928
```

```
6928 pts/1    00:00:00 ps  
(kali㉿kali)-[~]  
$ vi pippo  
Vim: Caught deadly signal TERM  
Vim: Finished.  
zsh: terminated vi pippo
```

- 6) Lanciare il comando firefox in background

```
(kali㉿kali)-[~]  
$ firefox &  
[1] 7581  
  
(kali㉿kali)-[~]  
$ jobs  
[1] + running  firefox
```

- 7) Portarlo in background

```
(kali㉿kali)-[~]  
$ firefox bg  
  
7512 pts/1    00:00:01 zsh  
7554 ?        00:00:00 tumblerd  
7566 ?        00:00:00 kworker/u4:1-ext4-rsv-conversion  
7568 ?        00:00:00 kworker/1:3-events  
7570 ?        00:00:00 kworker/0:0-inet_frag_wq  
7581 pts/1    00:00:05 firefox-esr  
7629 pts/1    00:00:00 Socket Process  
7643 pts/1    00:00:00 Privileged Cont  
7673 pts/1    00:00:00 file:// Content  
7703 pts/1    00:00:00 WebExtensions  
7744 pts/1    00:00:00 Isolated Web Co  
7747 pts/1    00:00:00 Web Content  
7780 pts/1    00:00:00 Web Content  
7845 pts/1    00:00:00 Web Content  
7872 pts/1    00:00:00 ps
```



8) Cercare di terminare il processo firefox

```
(kali㉿kali)-[~]  
$ kill 7581  
  
Exiting due to channel error.  
Exiting due to channel error.  
Exiting due to channel error.  
Exiting due to channel error.  
Exiting due to channel error.  
[1] + terminated firefox  
Exiting due to channel error.  
Exiting due to channel error.  
Exiting due to channel error.
```

9) Verificare quanto spazio si sta occupando su disco

```
(kali㉿kali)-[~]  
$ df -H  


| Filesystem | Size | Used | Avail | Use% | Mounted on     |
|------------|------|------|-------|------|----------------|
| udev       | 998M | 0    | 998M  | 0%   | /dev           |
| tmpfs      | 208M | 1.1M | 207M  | 1%   | /run           |
| /dev/sda1  | 83G  | 19G  | 61G   | 24%  | /              |
| tmpfs      | 1.1G | 0    | 1.1G  | 0%   | /dev/shm       |
| tmpfs      | 5.3M | 0    | 5.3M  | 0%   | /run/lock      |
| tmpfs      | 208M | 111k | 208M  | 1%   | /run/user/1000 |


```

Il comando 'du' mostra invece quanto spazio su disco viene utilizzato dalle directories

```
(kali㉿kali)-[~]
$ du -sh
4      ./windows
72     ./pki/nssdb
76     ./pki
8      ./gnupg/crls.d
4      ./gnupg/private-keys-v1.d
32     ./gnupg
4     ./Videos
8      ./config/dconf
16     ./config/Thunar
84     ./config/pulse
4      ./config/wireshark/profiles
16     ./config/wireshark
12     ./config/powershell
72     ./config/xfce4/xfconf/xfce-perchannel-xml
76     ./config/xfce4/xfconf
12     ./config/xfce4/panel/launcher-8
8      ./config/xfce4/panel/launcher-6
8      ./config/xfce4/panel/launcher-7
40     ./config/xfce4/panel
48     ./config/xfce4/desktop
4      ./config/xfce4/xfwm4
172    ./config/xfce4
12     ./config/Mousepad
8      ./config/gtk-3.0
12     ./config/cherrytree
8      ./config/qterminal.org
12     ./config/nautilus
4      ./config/procps
8      ./config/qt5ct
388    ./config
4      ./dos
4      ./Templates
12     ./java/.userPrefs/burp
16     ./java/.userPrefs
20     ./java
4      ./Documents
76     ./local/share/gvfs-metadata
4      ./local/share/icc
```

```
12 ./local/share/keyrings
4 ./local/share/nano
8 ./local/share/Mousepad
300 ./local/share/Cisco Packet Tracer/QtWebEngine/Default/GPUCache
20 ./local/share/Cisco Packet Tracer/QtWebEngine/Default/Session Storage
4 ./local/share/Cisco Packet Tracer/QtWebEngine/Default/blob_storage/0a410cb6-369a-4d4a-9495-b42e77bba318
8 ./local/share/Cisco Packet Tracer/QtWebEngine/Default/blob_storage
16 ./local/share/Cisco Packet Tracer/QtWebEngine/Default/Platform Notifications
20 ./local/share/Cisco Packet Tracer/QtWebEngine/Default/Local Storage/leveldb
24 ./local/share/Cisco Packet Tracer/QtWebEngine/Default/Local Storage
528 ./local/share/Cisco Packet Tracer/QtWebEngine/Default
532 ./local/share/Cisco Packet Tracer/QtWebEngine
536 ./local/share/Cisco Packet Tracer
4 ./local/share/Trash/expunged
8 ./local/share/Trash/info
108 ./local/share/Trash/files
124 ./local/share/Trash
12 ./local/share/nautilus/scripts
16 ./local/share/nautilus
800 ./local/share
804 ./local
4 ./studenti/anna
4 ./studenti/nicola/lavoro/.casa
12 ./studenti/nicola/lavoro
4 ./studenti/nicola/scuola
20 ./studenti/nicola
4 ./studenti/matteo
32 ./studenti
20 ./mozilla/firefox/427stb2z.default-esr/sessionstore-backups
4 ./mozilla/firefox/427stb2z.default-esr/features
4 ./mozilla/firefox/427stb2z.default-esr/storage/to-be-removed
4 ./mozilla/firefox/427stb2z.default-esr/storage/temporary
4 ./mozilla/firefox/427stb2z.default-esr/storage/default/moz-extension+++36c3683c-6240-4d87-931b-4c362eea6113^userContextId=4294967295/idb/3647222921wleabcEoxlt-eengsairo.files
52 ./mozilla/firefox/427stb2z.default-esr/storage/default/moz-extension+++36c3683c-6240-4d87-931b-4c362eea6113^userContextId=4294967295/idb
60 ./mozilla/firefox/427stb2z.default-esr/storage/default/moz-extension+++36c3683c-6240-4d87-931b-4c362eea6113^userContextId=4294967295
16 ./mozilla/firefox/427stb2z.default-esr/storage/default/file+++home+kali+jobs.1p.html/ls
24 ./mozilla/firefox/427stb2z.default-esr/storage/default/file+++home+kali+jobs.1p.html
16 ./mozilla/firefox/427stb2z.default-esr/storage/default/https+++id.cisco.com/ls
24 ./mozilla/firefox/427stb2z.default-esr/storage/default/https+++id.cisco.com
16 ./mozilla/firefox/427stb2z.default-esr/storage/default/https+++www.exploit-db.com/ls
24 ./mozilla/firefox/427stb2z.default-esr/storage/default/https+++www.exploit-db.com
52 ./mozilla/firefox/427stb2z.default-esr/storage/default/https+++www.google.com/ls
60 ./mozilla/firefox/427stb2z.default-esr/storage/default/https+++www.google.com
196 ./mozilla/firefox/427stb2z.default-esr/storage/default
4 ./mozilla/firefox/427stb2z.default-esr/storage/permanent/chrome/idb/3870112724rsegmnoittet-es.files/journals
```

```
4 ./mozilla/firefox/427stb2z.default-esr/storage/permanent/chrome/idb/1657114595AmcateirvtiSty.files
4 ./mozilla/firefox/427stb2z.default-esr/storage/permanent/chrome/idb/1451318868ntouromlalnodry--epcr.files
4 ./mozilla/firefox/427stb2z.default-esr/storage/permanent/chrome/idb/2823318777ntouromlalnodry--naod.files
4 ./mozilla/firefox/427stb2z.default-esr/storage/permanent/chrome/idb/3561288849sdhlie.files
4 ./mozilla/firefox/427stb2z.default-esr/storage/permanent/chrome/idb/2918063365piupsah.files
11672 ./mozilla/firefox/427stb2z.default-esr/storage/permanent/chrome/idb
11680 ./mozilla/firefox/427stb2z.default-esr/storage/permanent/chrome
11684 ./mozilla/firefox/427stb2z.default-esr/storage/permanent
12116 ./mozilla/firefox/427stb2z.default-esr/storage
4 ./mozilla/firefox/427stb2z.default-esr/extensions
8 ./mozilla/firefox/427stb2z.default-esr/datareporting/glean/db
4 ./mozilla/firefox/427stb2z.default-esr/datareporting/glean/pending_pings
4 ./mozilla/firefox/427stb2z.default-esr/datareporting/glean/events
20 ./mozilla/firefox/427stb2z.default-esr/datareporting/glean
80 ./mozilla/firefox/427stb2z.default-esr/datareporting
8 ./mozilla/firefox/427stb2z.default-esr/settings
4 ./mozilla/firefox/427stb2z.default-esr/crashes/events
12 ./mozilla/firefox/427stb2z.default-esr/crashes
3260 ./mozilla/firefox/427stb2z.default-esr/security_state
4 ./mozilla/firefox/427stb2z.default-esr/minidumps
1360 ./mozilla/firefox/427stb2z.default-esr/gmp-gmpopenh264/1.8.1.2
1364 ./mozilla/firefox/427stb2z.default-esr/gmp-gmpopenh264
12 ./mozilla/firefox/427stb2z.default-esr/bookmarkbackups
29088 ./mozilla/firefox/427stb2z.default-esr
8 ./mozilla/firefox/7z5buf0w.default
4 ./mozilla/firefox/Pending Pings
4 ./mozilla/firefox/Crash Reports/events
16 ./mozilla/firefox/Crash Reports
29128 ./mozilla/firefox
4 ./mozilla/extensions
4 ./mozilla/systemextensionsdev
29140 ./mozilla
4 ./Pictures
436 ./cache/mozilla/firefox/427stb2z.default-esr/cache2/doomed
66428 ./cache/mozilla/firefox/427stb2z.default-esr/cache2/entries
66988 ./cache/mozilla/firefox/427stb2z.default-esr/cache2
12672 ./cache/mozilla/firefox/427stb2z.default-esr/safebrowsing/google4
14832 ./cache/mozilla/firefox/427stb2z.default-esr/safebrowsing
260 ./cache/mozilla/firefox/427stb2z.default-esr/OfflineCache
136 ./cache/mozilla/firefox/427stb2z.default-esr/thumbnails
12 ./cache/mozilla/firefox/427stb2z.default-esr/settings/main/ms-language-packs/browser/newtab
16 ./cache/mozilla/firefox/427stb2z.default-esr/settings/main/ms-language-packs/browser
28 ./cache/mozilla/firefox/427stb2z.default-esr/settings/main/ms-language-packs
32 ./cache/mozilla/firefox/427stb2z.default-esr/settings/main
36 ./cache/mozilla/firefox/427stb2z.default-esr/settings
12720 ./cache/mozilla/firefox/427stb2z.default-esr/startupCache
94976 ./cache/mozilla/firefox/427stb2z.default-esr
4 ./cache/mozilla/firefox/7z5buf0w.default
94984 ./cache/mozilla/firefox
94988 ./cache/mozilla
```

```

24  ./.cache/xfce4/notifyd
28  ./.cache/xfce4
544 ./.cache/thumbnails/normal
548 ./.cache/thumbnails
3560 ./.cache/fontconfig
12  ./.cache/sessions/thumbs-kali:0
20  ./.cache/sessions
8   ./.cache/Cisco Packet Tracer/QtWebEngine/Default/Cache/index-dir
2240 ./.cache/Cisco Packet Tracer/QtWebEngine/Default/Cache
2244 ./.cache/Cisco Packet Tracer/QtWebEngine/Default
2248 ./.cache/Cisco Packet Tracer/QtWebEngine
2252 ./.cache/Cisco Packet Tracer
448 ./.cache/samba
4   ./.cache/obexd
8   ./.cache/mesa_shader_cache/89
8   ./.cache/mesa_shader_cache/79
8   ./.cache/mesa_shader_cache/be
8   ./.cache/mesa_shader_cache/0a
44  ./.cache/mesa_shader_cache
2368 ./.cache/gstreamer-1.0
104336 ./.cache
4   ./Music
4   ./Desktop
4   ./pt/saves
4   ./pt/templates
44  ./pt/logs
4   ./pt/extensions
80  ./pt
4   ./Public
24  ./Downloads/libxcb-xinerama0_1.15-1_amd64/DEBIAN
8   ./Downloads/libxcb-xinerama0_1.15-1_amd64/usr/share/doc/libxcb-xinerama0
12  ./Downloads/libxcb-xinerama0_1.15-1_amd64/usr/share/doc
16  ./Downloads/libxcb-xinerama0_1.15-1_amd64/usr/share
20  ./Downloads/libxcb-xinerama0_1.15-1_amd64/usr/lib/x86_64-linux-gnu
24  ./Downloads/libxcb-xinerama0_1.15-1_amd64/usr/lib
44  ./Downloads/libxcb-xinerama0_1.15-1_amd64/usr
72  ./Downloads/libxcb-xinerama0_1.15-1_amd64
276972 ./Downloads
412112 .

```

Con il comando 'top' si verifica l'utilizzo della CPU:

```
(kali㉿kali)-[~]
$ top
top - 06:59:55 up 4:13, 1 user, load average: 0.01, 0.03, 0.00
Tasks: 162 total, 2 running, 160 sleeping, 0 stopped, 0 zombie
%Cpu(s): 1.0 us, 0.3 sy, 0.0 ni, 98.6 id, 0.0 wa, 0.0 hi, 0.0 si, 0.0 st
MiB Mem : 1976.7 total, 564.6 free, 749.3 used, 831.6 buff/cache
MiB Swap: 975.0 total, 849.8 free, 125.2 used. 1227.4 avail Mem

  PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM    TIME+   COMMAND
  7509 kali      20   0  469764   95464  80768 S   1.7   4.7   0:03.26 qterminal
    675 root       20   0  471452  178248  66380 S   1.0   8.8   1:26.50 Xorg
   1005 kali      20   0  215428    3072   2816 S   0.7   0.2   0:14.94 VBoxClient
  7972 kali      20   0  11768    5632   3456 R   0.7   0.3   0:00.06 top
  1359 kali      20   0  430252  43572  23680 S   0.3   2.2   0:00.59 blueman-tray
     1 root       20   0    22724   13272    9688 S   0.0   0.7   0:02.30 systemd
     2 root       20   0         0         0         0 S   0.0   0.0   0:00.01 kthreadd
     3 root       20   0         0         0         0 S   0.0   0.0   0:00.00 pool_workqueue_release
     4 root        0 -20         0         0         0 I   0.0   0.0   0:00.00 kworker/R-rcu_g
     5 root        0 -20         0         0         0 I   0.0   0.0   0:00.00 kworker/R-rcu_p
     6 root        0 -20         0         0         0 I   0.0   0.0   0:00.00 kworker/R-slub_
     7 root        0 -20         0         0         0 I   0.0   0.0   0:00.00 kworker/R-netns
    10 root        0 -20         0         0         0 I   0.0   0.0   0:00.00 kworker/0:0H-events_highpri
    12 root        0 -20         0         0         0 I   0.0   0.0   0:00.00 kworker/R-mm_pe
    13 root       20   0         0         0         0 I   0.0   0.0   0:00.00 rcu_tasks_kthread
    14 root       20   0         0         0         0 I   0.0   0.0   0:00.00 rcu_tasks_rude_kthread
    15 root       20   0         0         0         0 I   0.0   0.0   0:00.00 rcu_tasks_trace_kthread
    16 root       20   0         0         0         0 S   0.0   0.0   0:00.20 ksoftirqd/0
    17 root       20   0         0         0         0 I   0.0   0.0   0:01.98 rcu_preempt
    18 root       rt    0         0         0         0 S   0.0   0.0   0:00.14 migration/0
    19 root      -51   0         0         0         0 S   0.0   0.0   0:00.00 idle_inject/0
    20 root       20   0         0         0         0 S   0.0   0.0   0:00.00 cpuhp/0
    21 root       20   0         0         0         0 S   0.0   0.0   0:00.00 cpuhp/1
    22 root      -51   0         0         0         0 S   0.0   0.0   0:00.00 idle_inject/1
    23 root       rt    0         0         0         0 S   0.0   0.0   0:00.27 migration/1
    24 root       20   0         0         0         0 S   0.0   0.0   0:00.35 ksoftirqd/1
    31 root       20   0         0         0         0 S   0.0   0.0   0:00.00 kdevtmpfs
    32 root        0 -20         0         0         0 I   0.0   0.0   0:00.00 kworker/R-inet_
    33 root       20   0         0         0         0 S   0.0   0.0   0:00.00 kauditd
    35 root       20   0         0         0         0 S   0.0   0.0   0:00.01 khungtaskd
    36 root       20   0         0         0         0 S   0.0   0.0   0:00.00 oom_reaper
    38 root        0 -20         0         0         0 I   0.0   0.0   0:00.00 kworker/R-write
    39 root       20   0         0         0         0 S   0.0   0.0   0:00.93 kcompactd0
    40 root       25   5         0         0         0 S   0.0   0.0   0:00.00 ksmd
    41 root       39  19         0         0         0 S   0.0   0.0   0:00.63 khugepaged
    42 root        0 -20         0         0         0 I   0.0   0.0   0:00.00 kworker/R-kinte
    43 root        0 -20         0         0         0 I   0.0   0.0   0:00.00 kworker/R-kbloc
    44 root        0 -20         0         0         0 I   0.0   0.0   0:00.00 kworker/R-blkcg
    45 root        0 -20         0         0         0 I   0.0   0.0   0:00.00 kworker/R-tpm_d
    46 root        0 -20         0         0         0 I   0.0   0.0   0:00.00 kworker/R-edac-
```