

Universidade Federal de Uberlândia
Sistemas Embarcados II / Sistemas Digitais para Mecatrônica
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Semana 01 – Utilização do Linux



Capítulo 1: Conceitos Básicos

<CTRL+ALT+F1>:

```
Xubuntu2021 [En fonction] - Oracle VM VirtualBox
Fichier  Machine  Écran  Entrée  Périphériques  Aide
Ubuntu 20.04.3 LTS fischmannn-VirtualBox tty1
fischmannn-VirtualBox login: _
```

Login:

```
fischmannn-VirtualBox login: fischmannn
Password:
Welcome to Ubuntu 20.04.3 LTS (GNU/Linux 5.11.0-41-generic x86_64)

 * Documentation:  https://help.ubuntu.com
 * Management:    https://landscape.canonical.com
 * Support:        https://ubuntu.com/advantage

0 updates can be applied immediately.

Your Hardware Enablement Stack (HWE) is supported until April 2025.

The programs included with the Ubuntu system are free software;
the exact distribution terms for each program are described in the
individual files in /usr/share/doc/*/copyright.

Ubuntu comes with ABSOLUTELY NO WARRANTY, to the extent permitted by
applicable law.

fischmannn@fischmannn-VirtualBox:~$
```

```
fischmannn@fischmannn-VirtualBox:~$ ls -a -1
.
..
.bash_history
.bash_logout
.bashrc
.cache
.config
Desktop
Documents
Downloads
.gnupg
.ICEauthority
.local
Music
Pictures
.profile
.Public
.sudo_as_admin_successful
.Templates
.vboxclient-clipboard.pid
.vboxclient-display-svgx-x11.pid
.vboxclient-draganddrop.pid
.vboxclient-seamless.pid
.Videos
.Xauthority
.Xdefaults
.xscreensaver
.xsession-errors
.xsession-errors.old
```

```
fischmannn@fischmannn-VirtualBox:~$ ls --all
.      Documents      Public      .Xauthority
..     Downloads      .sudo_as_admin_successful  .Xdefaults
.bash_history  .gnupg          Templates  .xscreensaver
.bash_logout  .ICEauthority   .vboxclient-clipboard.pid  .xsession-errors
.bashrc       .local          .vboxclient-display-svgx-x11.pid  .xsession-errors.old
.cache        Music           .vboxclient-draganddrop.pid
.config       Pictures        .vboxclient-seamless.pid
Desktop      .profile       Videos
```

```
fischmannn@fischmannn-VirtualBox:~$ cd --help
cd: cd [-L|[-P [-e]] [-@]] [dir]
    Change the shell working directory.

    Change the current directory to DIR.  The default DIR is the value of the
    HOME shell variable.

    The variable CDPATH defines the search path for the directory containing
    DIR.  Alternative directory names in CDPATH are separated by a colon (:).
    A null directory name is the same as the current directory.  If DIR begins
    with a slash (/), then CDPATH is not used.

    If the directory is not found, and the shell option `cdable_vars' is set,
    the word is assumed to be a variable name.  If that variable has a value,
    its value is used for DIR.

Options:
  -L      force symbolic links to be followed: resolve symbolic
          links in DIR after processing instances of `..'
  -P      use the physical directory structure without following
          symbolic links: resolve symbolic links in DIR before
          processing instances of `..'
  -e      if the -P option is supplied, and the current working
          directory cannot be determined successfully, exit with
          a non-zero status
  -@      on systems that support it, present a file with extended
          attributes as a directory containing the file attributes

The default is to follow symbolic links, as if `-L' were specified.
`..' is processed by removing the immediately previous pathname component
back to a slash or the beginning of DIR.

Exit Status:
Returns 0 if the directory is changed, and if $PWD is set successfully when
-P is used; non-zero otherwise.
```

```
fischmannn@fischmannn-VirtualBox:~$ pwd --help
pwd: pwd [-LP]
    Print the name of the current working directory.

Options:
  -L      print the value of $PWD if it names the current working
          directory
  -P      print the physical directory, without any symbolic links

By default, `pwd' behaves as if `-L' were specified.

Exit Status:
Returns 0 unless an invalid option is given or the current directory
cannot be read.
```

```
fischmannn@fischmannn-VirtualBox:~$ echo $SHELL
/bin/bash
fischmannn@fischmannn-VirtualBox:~$ cat /etc/shells
# /etc/shells: valid login shells
/bin/sh
/bin/bash
/usr/bin/bash
/bin/rbash
/usr/bin/rbash
/bin/dash
/usr/bin/dash
```

 Xubuntu2021 [En fonction] - Oracle VM VirtualBox

Fichier Machine Écran Entrée Périphériques Aide

```
fischmannn@fischmannn-VirtualBox:~$ echo teste
teste
fischmannn@fischmannn-VirtualBox:~$ echo 'teste'
teste
fischmannn@fischmannn-VirtualBox:~$ echo "teste"
teste
fischmannn@fischmannn-VirtualBox:~$ echo -e "string1\tstring2\nstring3"
string1 string2
string3
fischmannn@fischmannn-VirtualBox:~$ echo "eee ee"
eee ee
fischmannn@fischmannn-VirtualBox:~$ echo -e "string1 string2"
string1 string2
fischmannn@fischmannn-VirtualBox:~$
```

histórico:

```
/etc/iproute2/rt_realms
/etc/iproute2/bpf_pinning
/etc/iproute2/group
/etc/iproute2/etmatch_map
/etc/iproute2/rt_protos
/etc/iproute2/rt_protos.d/
/etc/iproute2/rt_protos.d/README
/etc/iproute2/rt_dsfield
/etc/iproute2/rt_tables.d/
/etc/iproute2/rt_tables.d/README
tar: Exiting with failure status due to previous errors
fischmannn@fischmannn-VirtualBox:~$ cp /etc/passwd backup
fischmannn@fischmannn-VirtualBox:~$ ps -ef | grep http
fischma+ 1532 1410 0 12:13 tty1 00:00:00 grep --color=auto http
fischmannn@fischmannn-VirtualBox:~$ service sshd restart
==== AUTHENTICATING FOR org.freedesktop.systemd1.manage-units ====
Authentication is required to restart 'sshd.service'.
Authenticating as: Nicolas Fischmann,, (fischmannn)
Password: Failed to restart sshd.service: Connection timed out.
See system logs and 'systemctl status sshd.service' for details.
polkit-agent-helper-1: pam_authenticate failed: Authentication failure
fischmannn@fischmannn-VirtualBox:~$ service sshd restart
==== AUTHENTICATING FOR org.freedesktop.systemd1.manage-units ====
Authentication is required to restart 'sshd.service'.
Authenticating as: Nicolas Fischmann,, (fischmannn)
Password:
==== AUTHENTICATION COMPLETE ====
Failed to restart sshd.service: Unit sshd.service not found.
fischmannn@fischmannn-VirtualBox:~$ /usr/local/apache2/bin/apachectl restart
-bash: /usr/local/apache2/bin/apachectl: No such file or directory
fischmannn@fischmannn-VirtualBox:~$ !2
cd media/fischmannn/VBox_GAs_6.1.30/
-bash: cd: media/fischmannn/VBox_GAs_6.1.30/: No such file or directory
fischmannn@fischmannn-VirtualBox:~$ !4
ls
backup Desktop Documents Downloads etc.tar Music Pictures Public Templates Videos
```

```
fischmannn@fischmannn-VirtualBox:~$ history | grep sshd
 42 service sshd restart
 46 history | grep sshd
fischmannn@fischmannn-VirtualBox:~$ history -c
fischmannn@fischmannn-VirtualBox:~$ history | grep sshd
  1 history | grep sshd
fischmannn@fischmannn-VirtualBox:~$
```

```
fischmannn@fischmannn-VirtualBox:~$ export HISTSIZE=100
fischmannn@fischmannn-VirtualBox:~$ echo $HISTSIZE
100
fischmannn@fischmannn-VirtualBox:~$ export HISTSIZE=1000
fischmannn@fischmannn-VirtualBox:~$ echo $HISTSIZE
1000
```

```
fischmannn@fischmannn-VirtualBox:~$ cat ~/.bash_history
cd /media/user/vBox_GAs_6.1.18/
cd media/fischmannn/VBox_GAs_6.1.30/
cd /media/fischmannn/VBox_GAs_6.1.30/
ls
sudo
sudo ./VBox
sudo ./
sudo
sudo VBox
sudo ./VBoxLinuxAdditions.run
sudo reboot
```

```
fischmannn@fischmannn-VirtualBox:~$ sudo apt install vim
[sudo] password for fischmannn:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  vim-common vim-runtime vim-tiny
Suggested packages:
  ctags vim-doc vim-scripts indent
The following NEW packages will be installed:
  vim vim-runtime
The following packages will be upgraded:
  vim-common vim-tiny
2 upgraded, 2 newly installed, 0 to remove and 150 not upgraded.
Need to get 7.114 kB/7.778 kB of archives.
After this operation, 34,6 MB of additional disk space will be used.
Do you want to continue? [Y/n] Y
17% [Working]
```

Capítulo 2: Ligando e Desligando o Linux

Como os comandos desse capítulo desligam e ligam o sistema, não é possível tirar print delas.

Capítulo 3: Operações em Diretórios e Arquivos

```
fischmannn@fischmannn-VirtualBox:~$ ls
backup Desktop Documents Downloads etc.tar Music Pictures Public Templates Videos
fischmannn@fischmannn-VirtualBox:~$ ls -l
backup
Desktop
Documents
Downloads
etc.tar
Music
Pictures
Public
Templates
Videos
fischmannn@fischmannn-VirtualBox:~$
```

~

```
fischmannn@fischmannn-VirtualBox:~$ ls -la
. Desktop Pictures .vboxclient-seamless.pid
.. Documents .profile Videos
backup Downloads Public .Xauthority
.bash_history etc.tar .sudo_as_admin_successful .Xdefaults
.bash_logout .gnupg Templates .xscreensaver
.bashrc .ICEauthority .vboxclient-clipboard.pid .xsession-errors
.cache .local .vboxclient-display-svg-x11.pid .xsession-errors.old
.config Music .vboxclient-draganddrop.pid
fischmannn@fischmannn-VirtualBox:~$
```

```
fischmannn@fischmannn-VirtualBox:~$ ls -all
total 6900
drwxr-xr-x 14 fischmannn fischmannn 4096 dez 8 12:38 .
drwxr-xr-x 3 root root 4096 dez 7 15:55 ..
-rw-r--r-- 1 fischmannn fischmannn 2599 dez 8 12:12 backup
-rw----- 1 fischmannn fischmannn 446 dez 8 12:27 .bash_history
-rw-r--r-- 1 fischmannn fischmannn 220 dez 7 15:55 .bash_logout
-rw-r--r-- 1 fischmannn fischmannn 3771 dez 7 15:55 .bashrc
drwxrwxr-x 9 fischmannn fischmannn 4096 dez 8 12:37 .cache
drwxr-xr-x 11 fischmannn fischmannn 4096 dez 7 16:07 .config
drwxr-xr-x 2 fischmannn fischmannn 4096 dez 7 16:05 Desktop
drwxr-xr-x 2 fischmannn fischmannn 4096 dez 7 16:05 Documents
drwxr-xr-x 2 fischmannn fischmannn 4096 dez 7 16:05 Downloads
-rw-rw-r-- 1 fischmannn fischmannn 6942720 dez 8 12:12 etc.tar
drwx----- 3 fischmannn fischmannn 4096 dez 7 16:05 .gnupg
-rw----- 1 fischmannn fischmannn 0 dez 7 16:05 .ICEauthority
drwxrwxr-x 3 fischmannn fischmannn 4096 dez 7 16:05 .local
drwxr-xr-x 2 fischmannn fischmannn 4096 dez 7 16:05 Music
drwxr-xr-x 2 fischmannn fischmannn 4096 dez 7 16:05 Pictures
-rw-r--r-- 1 fischmannn fischmannn 807 dez 7 15:55 .profile
drwxr-xr-x 2 fischmannn fischmannn 4096 dez 7 16:05 Public
-rw-r--r-- 1 fischmannn fischmannn 0 dez 7 16:11 .sudo_as_admin_successful
drwxr-xr-x 2 fischmannn fischmannn 4096 dez 7 16:05 Templates
-rw-r----- 1 fischmannn fischmannn 4 dez 8 12:37 .vboxclient-clipboard.pid
-rw-r----- 1 fischmannn fischmannn 4 dez 8 12:37 .vboxclient-display-svg-x11.pid
-rw-r----- 1 fischmannn fischmannn 4 dez 8 12:37 .vboxclient-draganddrop.pid
-rw-r----- 1 fischmannn fischmannn 4 dez 8 12:37 .vboxclient-seamless.pid
drwxr-xr-x 2 fischmannn fischmannn 4096 dez 7 16:05 Videos
-rw----- 1 fischmannn fischmannn 66 dez 8 12:37 .Xauthority
-rw-r--r-- 1 fischmannn fischmannn 1600 dez 7 15:55 .Xdefaults
-rw-r--r-- 1 fischmannn fischmannn 14 dez 7 15:55 .xscreensaver
-rw----- 1 fischmannn fischmannn 6421 dez 8 12:38 .xsession-errors
-rw----- 1 fischmannn fischmannn 6833 dez 8 12:27 .xsession-errors.old
```

```
fischmannn@fischmannn-VirtualBox:~$ ls -ld .*
drwxr-xr-x  3 root      root      4096 dez  7 15:55 ..
-rw-----  1 fischmannn fischmannn 446 dez  8 12:27 .bash_history
-rw-r--r--  1 fischmannn fischmannn 220 dez  7 15:55 .bash_logout
-rw-r--r--  1 fischmannn fischmannn 3771 dez  7 15:55 .bashrc
drwxrwxr-x  9 fischmannn fischmannn 4096 dez  8 12:37 .cache
drwxr-xr-x 11 fischmannn fischmannn 4096 dez  7 16:07 .config
drwx-----  3 fischmannn fischmannn 4096 dez  7 16:05 .gnupg
-rw-----  1 fischmannn fischmannn   0 dez  7 16:05 .ICEauthority
drwxrwxr-x  3 fischmannn fischmannn 4096 dez  7 16:05 .local
-rw-r--r--  1 fischmannn fischmannn 807 dez  7 15:55 .profile
-rw-r--r--  1 fischmannn fischmannn   0 dez  7 16:11 .sudo_as_admin_successful
-rw-r-----  1 fischmannn fischmannn   4 dez  8 12:37 .vboxclient-clipboard.pid
-rw-r-----  1 fischmannn fischmannn   4 dez  8 12:37 .vboxclient-display-svga-x11.pid
-rw-r-----  1 fischmannn fischmannn   4 dez  8 12:37 .vboxclient-draganddrop.pid
-rw-r-----  1 fischmannn fischmannn   4 dez  8 12:37 .vboxclient-seamless.pid
-rw-----  1 fischmannn fischmannn  66 dez  8 12:37 .Xauthority
-rw-r--r--  1 fischmannn fischmannn 1600 dez  7 15:55 .Xdefaults
-rw-r--r--  1 fischmannn fischmannn  14 dez  7 15:55 .xscreensaver
-rw-----  1 fischmannn fischmannn 6421 dez  8 12:38 .xsession-errors
-rw-----  1 fischmannn fischmannn 6833 dez  8 12:27 .xsession-errors.old
```

```
fischmannn@fischmannn-VirtualBox:~$ ls -a | egrep '^\.'
```

```

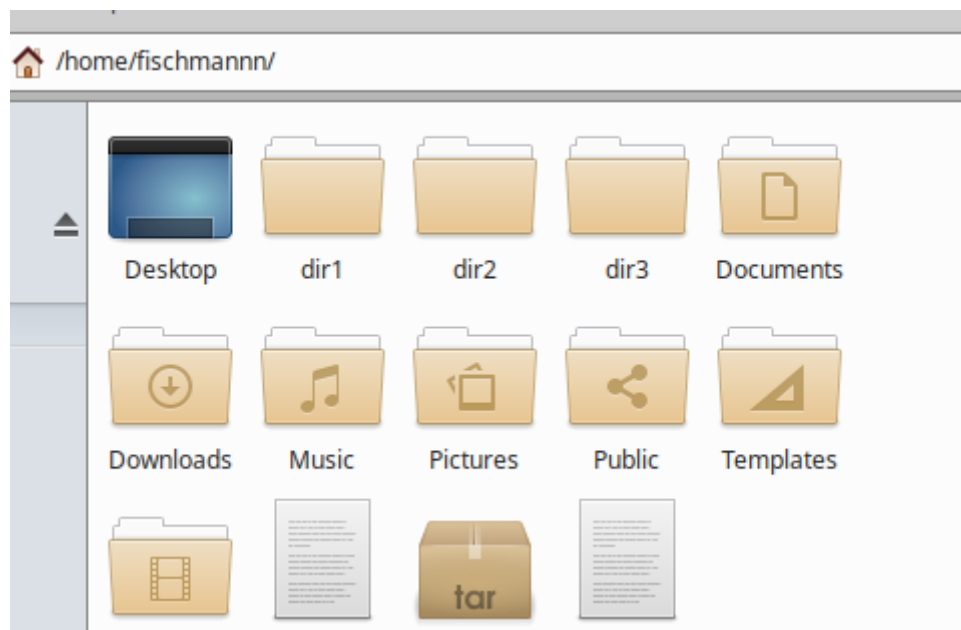
.
..
.bash_history
.bash_logout
.bashrc
.cache
.config
.gnupg
.ICEauthority
.local
.profile
.sudo_as_admin_successful
.vboxclient-clipboard.pid
.vboxclient-display-svga-x11.pid
.vboxclient-draganddrop.pid
.vboxclient-seamless.pid
.Xauthority
.Xdefaults
.xscreensaver
.xsession-errors
.xsession-errors.old
```

```
fischmannn@fischmannn-VirtualBox:/etc$ ls -ld /etc
drwxr-xr-x 133 root root 12288 dez  8 12:24 /etc
```

```

fischmannn@fischmannn-VirtualBox:/etc$ cd /home/fischmannn
fischmannn@fischmannn-VirtualBox:~$ pwd
/home/fischmannn
fischmannn@fischmannn-VirtualBox:~$ cd ~
fischmannn@fischmannn-VirtualBox:~$ pwd
/home/fischmannn
fischmannn@fischmannn-VirtualBox:~$ ls test.txt
ls: cannot access 'test.txt': No such file or directory
fischmannn@fischmannn-VirtualBox:~$ ls test.txt
test.txt
fischmannn@fischmannn-VirtualBox:~$ ls /home/fischmannn/test.txt
/home/fischmannn/test.txt
fischmannn@fischmannn-VirtualBox:~$ ls ~/test.txt
/home/fischmannn/test.txt
fischmannn@fischmannn-VirtualBox:~$ ls
backup  Documents  etc.tar  Pictures  Templates  Videos
Desktop Downloads  Music    Public    test.txt

```



```

fischmannn@fischmannn-VirtualBox:~$ ls
backup  dir1  dir3  Downloads  Music  Public  test.txt
Desktop dir2  Documents  etc.tar  Pictures  Templates  Videos
fischmannn@fischmannn-VirtualBox:~$ ls dir
ls: cannot access 'dir': No such file or directory
fischmannn@fischmannn-VirtualBox:~$ ls dir1
code.c
fischmannn@fischmannn-VirtualBox:~$ ls dir2
main.c
fischmannn@fischmannn-VirtualBox:~$ ls dir3
teste.c
fischmannn@fischmannn-VirtualBox:~$ cp /home/fischmannn/dir1/code.c /home/fischmannn/dir3/teste.c
fischmannn@fischmannn-VirtualBox:~$ ls
backup  Desktop  dir2  Documents  etc.tar  Music  Public  teste.c  Videos
code.c  dir1    dir3  Downloads  main.c  Pictures  Templates  test.txt
fischmannn@fischmannn-VirtualBox:~$ touch teste.txt
fischmannn@fischmannn-VirtualBox:~$ ls
backup  Desktop  dir2  Documents  etc.tar  Music  Public  teste.c  teste.txt  Videos
code.c  dir1    dir3  Downloads  main.c  Pictures  Templates  teste.txt

```



```
fischmannn@fischmannn-VirtualBox:~$ rm *.c
fischmannn@fischmannn-VirtualBox:~$ ls
backup  dir1  dir3  Downloads  Music  Public  teste.txt  Videos
Desktop dir2  Documents etc.tar    Pictures Templates test.txt
fischmannn@fischmannn-VirtualBox:~$ rm *.txt
fischmannn@fischmannn-VirtualBox:~$ ls
backup  dir1  dir3  Downloads  Music  Public  Videos
Desktop dir2  Documents etc.tar    Pictures Templates
```

```
fischmannn@fischmannn-VirtualBox:~$ rm -R dir1
fischmannn@fischmannn-VirtualBox:~$ ls
backup  dir2  Documents etc.tar  Pictures Templates
Desktop dir3  Downloads Music    Public    Videos
fischmannn@fischmannn-VirtualBox:~$ rm -R dir2
fischmannn@fischmannn-VirtualBox:~$ rm -R dir3
fischmannn@fischmannn-VirtualBox:~$ ls
backup Desktop Documents Downloads etc.tar Music Pictures Public Templates Videos
fischmannn@fischmannn-VirtualBox:~$ _
```

```
fischmannn@fischmannn-VirtualBox:~$ ls
backup  Documents etc.tar  Pictures temp  tempdir2  Templates Videos
Desktop Downloads Music    Public  tempdir1 tempdir3  teste
```

```
fischmannn@fischmannn-VirtualBox:~$ ls
arq1 backup Desktop Documents Downloads etc.tar Music Pictures Public Templates Videos
fischmannn@fischmannn-VirtualBox:~$ rm -R arq1
fischmannn@fischmannn-VirtualBox:~$ ls
backup Desktop Documents Downloads etc.tar Music Pictures Public Templates Videos
fischmannn@fischmannn-VirtualBox:~$ touch arq1
fischmannn@fischmannn-VirtualBox:~$ ls
arq1 backup Desktop Documents Downloads etc.tar Music Pictures Public Templates Videos
fischmannn@fischmannn-VirtualBox:~$ echo 'Laranja' >> arq1
fischmannn@fischmannn-VirtualBox:~$ ls arq1
arq1
```

```
fischmannn@fischmannn-VirtualBox:~$ mv arq1 arq2
fischmannn@fischmannn-VirtualBox:~$ car arq1-soft

Command 'car' not found, but can be installed with:
```

```
sudo apt install ucommon-utils
```

```
fischmannn@fischmannn-VirtualBox:~$ cat arq1-soft
cat: arq1-soft: No such file or directory
fischmannn@fischmannn-VirtualBox:~$ ls -l arq1-soft
lrwxrwxrwx 1 fischmannn fischmannn 4 dez  8 13:12 arq1-soft -> arq1
```

Capítulo 4: Comandos para Manipulação de Arquivos Texto

```
fischmannn@fischmannn-VirtualBox:~$ seq 1 5 > arq1.txt
fischmannn@fischmannn-VirtualBox:~$ seq 6 10 > arq2.txt
fischmannn@fischmannn-VirtualBox:~$ cat arq1.txt arq2.txt
1
2
3
4
5
6
7
8
9
10
```

```
fischmannn@fischmannn-VirtualBox:~$ echo 'olá Alessandro!'
olá Alessandro!
fischmannn@fischmannn-VirtualBox:~$ echo -en 'olá\tAlessandro!'
olá      Alessandro!fischmannn@fischmannn-VirtualBox:~$
fischmannn@fischmannn-VirtualBox:~$ cat cidades.txt
Abadia de Goias (GO)
Abadia dos Dourados (MG)
Abadiania (GO)
Outra
OUtra
```

```
fischmannn@fischmannn-VirtualBox:~$ echo 'alessandro vivas andrade' | cut -c 1-10
alessandro
fischmannn@fischmannn-VirtualBox:~$ who | cut -c1-8 | sort | uniq
fischman
fischmannn@fischmannn-VirtualBox:~$ cat cidades.txt | cut -c 1-2
SP
SP
MG
MG
MG
MG
RJ
```

```
fischmannn@fischmannn-VirtualBox:~$ seq 3
1
2
3
fischmannn@fischmannn-VirtualBox:~$ seq 3 5
3
4
5
fischmannn@fischmannn-VirtualBox:~$ seq 1.1 0.1 1.3
1,1
1,2
1,3
```

```
fischmannn@fischmannn-VirtualBox:~$ cat cidades.txt | expand -t 1
SP Sao Paulo : pedro
SP Campinas : andre
MG Belo Horizonte : marta
MG Diamantina : lucas
MG Lavras : rafael
MG Bom Sucesso : lisa
RJ Rio de Janeiro : alexandro
fischmannn@fischmannn-VirtualBox:~$ cat cidades.txt | expand -t 10
SP Sao Paulo : pedro
SP Campinas : andre
MG Belo Horizonte : marta
MG Diamantina : lucas
MG Lavras : rafael
MG Bom Sucesso : lisa
RJ Rio de Janeiro : alexandro
```

```

alexandronfischmannnfischmann-VirtualBox:~$ cat cidades.txt | tr -s [:space:] '\n'
P
ao
aulo

edro
P
ampinas

ndre
G
elo
orizonte

arta
G
iamantina

ucas
G
avras

afael
G
om
uccesso

isa
J
io
e
aneiro

lexandro
ischmannnfischmann-VirtualBox:~$ _

```

```

fischmannnfischmann-VirtualBox:~$ dmesg | egrep "firmware|amd"
[ 0.000000] Linux version 5.11.0-41-generic (buildd@lgw01-amd64-005) (gcc (Ubuntu 9.3.0-17ubuntu1
~20.04) 9.3.0, GNU ld (GNU Binutils for Ubuntu) 2.34) #45~20.04.1-Ubuntu SMP Wed Nov 10 10:20:10 UTC
2021 (Ubuntu 5.11.0-41.45~20.04.1-generic 5.11.22)
[ 21.903732] 15:37:46.593775 main VBoxService 6.1.30 r148432 (verbosity: 0) linux.amd64 (Nov 2
2 2021 16:16:32) release log
fischmannnfischmann-VirtualBox:~$ dmesg | fgrep "@"
[ 0.000000] Linux version 5.11.0-41-generic (buildd@lgw01-amd64-005) (gcc (Ubuntu 9.3.0-17ubuntu1
~20.04) 9.3.0, GNU ld (GNU Binutils for Ubuntu) 2.34) #45~20.04.1-Ubuntu SMP Wed Nov 10 10:20:10 UTC
2021 (Ubuntu 5.11.0-41.45~20.04.1-generic 5.11.22)
[ 0.287590] smpboot: CPU0: Intel(R) Core(TM) i5-7300HQ CPU @ 2.50GHz (family: 0x6, model: 0x9e, s
tepping: 0x9)
[ 0.400663] pps_core: Software ver. 5.3.6 - Copyright 2005-2007 Rodolfo Giometti <giometti@linux.
it>
[ 1.822797] device-mapper: ioctl: 4.43.0-ioctl (2020-10-01) initialised: dm-devel@redhat.com
[ 2.105719] ata3: SATA max UDMA/133 abar m8192@0xf0806000 port 0xf0806100 irq 21
[ 3.540186] systemd[1]: modprobe@drm.service: Succeeded.

```

```

fisichmannn@fisichmannn-VirtualBox:~$ head cidades.txt
SP Sao Paulo : pedro
SP Campinas : andre :(074) 2233 -1111
MG Belo Horizonte : marta :010 1222 0011
MG Diamantina : lucas :2
MG Lavras : rafael
MG Bom Sucesso : lisa
RJ Rio de Janeiro : alexandro
fisichmannn@fisichmannn-VirtualBox:~$ head -2 cidades.txt
SP Sao Paulo : pedro
SP Campinas : andre :(074) 2233 -1111
fisichmannn@fisichmannn-VirtualBox:~$ tail cidades.txt
SP Sao Paulo : pedro
SP Campinas : andre :(074) 2233 -1111
MG Belo Horizonte : marta :010 1222 0011
MG Diamantina : lucas :2
MG Lavras : rafael
MG Bom Sucesso : lisa
RJ Rio de Janeiro : alexandro
fisichmannn@fisichmannn-VirtualBox:~$ tail -2 cidades.txt
MG Bom Sucesso : lisa
RJ Rio de Janeiro : alexandro
fisichmannn@fisichmannn-VirtualBox:~$ tail -n 2 cidades.txt
MG Bom Sucesso : lisa
RJ Rio de Janeiro : alexandro

```

```

fisichmannn@fisichmannn-VirtualBox:~$ file cidades.txt
cidades.txt: ASCII text
fisichmannn@fisichmannn-VirtualBox:~$ wget -q http://www.guttenberg.org/files/4300/4300-0.txt
fisichmannn@fisichmannn-VirtualBox:~$ file 4300-0.txt
4300-0.txt: HTML document, ASCII text, with very long lines, with no line terminators
fisichmannn@fisichmannn-VirtualBox:~$ file CETENFOLHA
CETENFOLHA: cannot open `CETENFOLHA' (No such file or directory)
fisichmannn@fisichmannn-VirtualBox:~$ iconv -f iso-8859-1 -t utf-8 cidades.txt >cidadeutf8.txt
fisichmannn@fisichmannn-VirtualBox:~$ echo -e "ação" | iconv -t ASCII -f UTF-8
aiconv: illegal input sequence at position 1
fisichmannn@fisichmannn-VirtualBox:~$ echo -e "ação" | iconv -t ASCII//TRANSLIT -f UTF-8 acao
iconv: cannot open input file `acao': No such file or directory

```

Capitulo 5 : Comandos de Sistema

```

fisichmannn@fisichmannn-VirtualBox:~$ whoami
fisichmannn
fisichmannn@fisichmannn-VirtualBox:~$ pwd
/home/fisichmannn

```

```

fisichmannn@fisichmannn-VirtualBox:~$ id
uid=1000(fisichmannn) gid=1000(fisichmannn) groups=1000(fisichmannn),4(adm),24(cdrom),27(sudo),30(dip),
46(plugdev),121(lpadmin),131(lxd),132(sambashare)
fisichmannn@fisichmannn-VirtualBox:~$ passwd
Changing password for fisichmannn.
Current password:
passwd: Authentication token manipulation error
passwd: password unchanged

```

```
fischmannn@fischmannn-VirtualBox:~$ users
fischmannn fischmannn
fischmannn@fischmannn-VirtualBox:~$ sudo apt-get install finger
[sudo] password for fischmannn:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  finger
0 upgraded, 1 newly installed, 0 to remove and 150 not upgraded.
Need to get 16,9 kB of archives.
After this operation, 51,2 kB of additional disk space will be used.
Get:1 http://br.archive.ubuntu.com/ubuntu focal/universe amd64 finger amd64 0.17-17 [16,9 kB]
Fetched 16,9 kB in 0s (39,5 kB/s)
Selecting previously unselected package finger.
(Reading database ... 198642 files and directories currently installed.)
Preparing to unpack .../finger_0.17-17_amd64.deb ...
Unpacking finger (0.17-17) ...
Setting up finger (0.17-17) ...
Processing triggers for man-db (2.9.1-1) ...
fischmannn@fischmannn-VirtualBox:~$
```

```
fischmannn@fischmannn-VirtualBox:~$ finger fischmannn
Login: fischmannn          Name: Nicolas Fischmann
Directory: /home/fischmannn Shell: /bin/bash
On since Wed Dec  8 12:40 (-03) on tty1  4 seconds idle
(messages off)
On since Wed Dec  8 12:37 (-03) on tty7 from :0
1 hour 48 minutes idle
No mail.
No Plan.
fischmannn@fischmannn-VirtualBox:~$ finger
Login      Name           Tty      Idle   Login Time   Office      Office Phone
fischmannn Nicolas Fischmann *tty1      Dec  8 12:40
fischmannn Nicolas Fischmann tty7       1:48   Dec  8 12:37 (:0)
fischmannn@fischmannn-VirtualBox:~$ free
              total        used        free      shared  buff/cache   available
Mem:           2027380      436024      693092         4052       898264      1425788
Swap:          1942896           0      1942896
fischmannn@fischmannn-VirtualBox:~$ su
Password:
su: Authentication failure
```

```
fischmann@fischmann-VirtualBox:~$ uname -s
Linux
fischmann@fischmann-VirtualBox:~$ name -r

Command 'name' not found, did you mean:

  command 'name' from deb name (0.220+dfsg.1-1)
  command 'lame' from deb lame (3.100-3)
  command 'uname' from deb coreutils (8.30-3ubuntu2)
  command 'nvme' from deb nvme-cli (1.9-1ubuntu0.1)
  command 'nama' from deb nama (1.216-1)
  command 'named' from deb bind9 (1:9.16.1-0ubuntu2.9)
  command 'namei' from deb util-linux (2.34-0.1ubuntu9.1)
  command 'nam' from deb nam (1.15-5build1)

Try: sudo apt install <deb name>

fischmann@fischmann-VirtualBox:~$ uname -m
x86_64
fischmann@fischmann-VirtualBox:~$ uname -n
fischmann-VirtualBox
fischmann@fischmann-VirtualBox:~$ uname -a
Linux fischmann-VirtualBox 5.11.0-41-generic #45~20.04.1-Ubuntu SMP Wed Nov 10 10:20:10 UTC 2021 x86_64 x86_64 x86_64 GNU/Linux
fischmann@fischmann-VirtualBox:~$ uptime
 14:27:48 up  1:50,  2 users,  load average: 0,02, 0,02, 0,00
fischmann@fischmann-VirtualBox:~$ ls --version
ls (GNU coreutils) 8.30
Copyright (C) 2018 Free Software Foundation, Inc.
License GPLv3+: GNU GPL version 3 or later <https://gnu.org/licenses/gpl.html>.
This is free software: you are free to change and redistribute it.
There is NO WARRANTY, to the extent permitted by law.

Written by Richard M. Stallman and David Mackenzie.

fischmann@fischmann-VirtualBox:~$ timeout 5 ping www.ufu.br
PING www.ufu.br (200.19.145.55) 56(84) bytes of data:
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=1 ttl=49 time=82.1 ms
^[[A^[[A64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=2 ttl=49 time=57.8
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=3 ttl=49 time=55.7 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=4 ttl=49 time=57.6 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=5 ttl=49 time=64.7 ms
fischmann@fischmann-VirtualBox:~$ w
 14:30:59 up  1:53,  2 users,  load average: 0,02, 0,02, 0,00
USER      TTY      FROM            LOGIN@   IDLE   JCPU   PCPU WHAT
fischman  tty1     -                12:40    3.00s  1.41s  0.00s w
fischman  tty7     :0                12:37    1:53m  13.03s 0.46s xfce4-session
fischmann@fischmann-VirtualBox:~$ whereis gcc
gcc: /usr/lib/gcc /usr/share/gcc
```

```
fischmannn@fischmannn-VirtualBox:~$ which ls
/usr/bin/ls
fischmannn@fischmannn-VirtualBox:~$ which gcc
fischmannn@fischmannn-VirtualBox:~$
fischmannn@fischmannn-VirtualBox:~$ which gcc
fischmannn@fischmannn-VirtualBox:~$ whatis clear
clear (1)          - clear the terminal screen
fischmannn@fischmannn-VirtualBox:~$ whatis ps
ps (1)            - report a snapshot of the current processes.
fischmannn@fischmannn-VirtualBox:~$ whatis netstat
netstat: nothing appropriate.
fischmannn@fischmannn-VirtualBox:~$ whatis route
tc-route (8)      - route traffic control filter
fischmannn@fischmannn-VirtualBox:~$ whatis ls
ls (1)           - list directory contents
fischmannn@fischmannn-VirtualBox:~$ whatis touch
touch (1)        - change file timestamps
fischmannn@fischmannn-VirtualBox:~$ whatis cat
cat (1)         - concatenate files and print on the standard output
fischmannn@fischmannn-VirtualBox:~$ whatis date
date (1)        - print or set the system date and time
fischmannn@fischmannn-VirtualBox:~$
```

```
fischmannn@fischmannn-VirtualBox:~$ who
fischmannn tty1      2021-12-08 12:40
fischmannn tty7      2021-12-08 12:37 (:0)
fischmannn@fischmannn-VirtualBox:~$ hostname; date; ls;
fischmannn-VirtualBox
qua 08 dez 2021 14:34:47 -03
4300-0.txt  arq2.txt  cidades.txt  Desktop  Downloads  Music  Public  Videos
arq1.txt   backup   cidadeutf8.txt Documents etc.tar  Pictures Templates
fischmannn@fischmannn-VirtualBox:~$ test -f teste.existe && echo 'existe'
fischmannn@fischmannn-VirtualBox:~$ touch teste.existe && test -f teste.existe && echo 'existe'
existe
fischmannn@fischmannn-VirtualBox:~$ emacs &
[1] 3625
fischmannn@fischmannn-VirtualBox:~$
Command 'emacs' not found, but can be installed with:

sudo apt install e3          # version 1:2.71-2, or
sudo apt install emacs-gtk   # version 1:26.3+1-1ubuntu2
sudo apt install emacs-lucid # version 1:26.3+1-1ubuntu2
sudo apt install emacs-nox   # version 1:26.3+1-1ubuntu2
sudo apt install jove        # version 4.17.2.7-1
```

Capítulo 6: Gerenciamento de Processos

```

fischma+ 1112 839 0 12:37 ? 00:00:00 update-notifier
fischma+ 1123 839 0 12:37 ? 00:00:00 xiccd
fischma+ 1162 839 0 12:37 ? 00:00:00 /usr/lib/policykit-1-gnome/pol
fischma+ 1163 1 0 12:37 ? 00:00:00 xfce4-power-manager
colord 1164 1 0 12:37 ? 00:00:00 /usr/libexec/colord
fischma+ 1169 839 0 12:37 ? 00:00:00 nm-applet
fischma+ 1183 839 0 12:37 ? 00:00:00 /usr/bin/python3 /usr/share/sy
fischma+ 1187 839 0 12:37 ? 00:00:00 /usr/bin/python3 /usr/bin/blue
fischma+ 1211 832 0 12:37 ? 00:00:00 /usr/libexec/gvfs-udisks2-volu
fischma+ 1216 832 0 12:37 ? 00:00:00 /usr/libexec/gvfs-mtp-volume-r
fischma+ 1220 832 0 12:37 ? 00:00:00 /usr/libexec/gvfs-goa-volume-r
fischma+ 1226 832 0 12:37 ? 00:00:00 /usr/libexec/gvfs-afc-volume-r
fischma+ 1231 832 0 12:37 ? 00:00:00 /usr/libexec/gvfs-gphoto2-volu
fischma+ 1244 994 0 12:37 ? 00:00:00 /usr/libexec/gvfsd-trash --spa
fischma+ 1250 832 0 12:37 ? 00:00:00 /usr/libexec/gvfsd-metadata
fischma+ 1254 1 0 12:37 ? 00:00:00 /usr/bin/python3 /usr/bin/blue
fischma+ 1259 832 0 12:37 ? 00:00:00 /usr/lib/bluetooth/obexd
fischma+ 1450 806 0 12:40 tty1 00:00:01 -bash
root 1553 2 0 12:53 ? 00:00:02 [kworker/1:1-events]
fischma+ 1594 832 0 12:57 ? 00:00:00 /usr/libexec/dconf-service
root 1602 1 0 12:59 tty2 00:00:00 /sbin/agetty -o -p -- \u --noc
root 2739 2 0 14:05 ? 00:00:02 [kworker/3:0-events]
root 3580 2 0 14:29 ? 00:00:00 [kworker/0:0-mm_percpu_wq]
root 3598 2 0 14:31 ? 00:00:00 [kworker/1:0]
root 3640 2 0 14:59 ? 00:00:00 [kworker/3:2-mm_percpu_wq]
root 3641 2 0 15:01 ? 00:00:00 [kworker/u8:2-events_power_eff
root 3642 2 0 15:03 ? 00:00:00 [kworker/2:1-events]
root 3643 2 0 15:06 ? 00:00:00 [kworker/u8:1-events_power_eff
fischma+ 3645 1450 0 15:12 tty1 00:00:00 ps -aef

```

```

fischmannn@fischmannn-VirtualBox:~$ ps -aef | grep firefox
fischma+ 3654 1450 0 15:14 tty1 00:00:00 grep --color=auto firefox
fischmannn@fischmannn-VirtualBox:~$ ps -aef -m | head -5
error: garbage option

Usage:
ps [options]

Try 'ps --help <simple|list|output|threads|misc|all>'
or 'ps --help <s|l|o|t|m|a>'
for additional help text.

For more details see ps(1).

```


pstree:

```

networkd-dispat
polkitd—2*[{polkitd}]
rsyslogd—3*[{rsyslogd}]
rtkit-daemon—2*[{rtkit-daemon}]
systemd
├──(sd-pam)
│   ├──at-spi-bus-laun—dbus-daemon
│   │   └──3*[{at-spi-bus-laun}]
│   ├──at-spi2-registr—2*[{at-spi2-registr}]
│   ├──dbus-daemon
│   ├──dconf-service—2*[{dconf-service}]
│   ├──gvfs-afc-volume—3*[{gvfs-afc-volume}]
│   ├──gvfs-goa-volume—2*[{gvfs-goa-volume}]
│   ├──gvfs-gphoto2-vo—2*[{gvfs-gphoto2-vo}]
│   ├──gvfs-mtp-volume—2*[{gvfs-mtp-volume}]
│   ├──gvfs-udisks2-vo—3*[{gvfs-udisks2-vo}]
│   ├──gvfsd—gvfsd-trash—2*[{gvfsd-trash}]
│   │   └──2*[{gvfsd}]
│   ├──gvfsd-fuse—5*[{gvfsd-fuse}]
│   ├──gvfsd-metadata—2*[{gvfsd-metadata}]
│   ├──indicator-messa—3*[{indicator-messa}]
│   ├──obexd
│   ├──pulseaudio—3*[{pulseaudio}]
│   ├──xfce4-notifyd—2*[{xfce4-notifyd}]
│   ├──xfce4-screensav—2*[{xfce4-screensav}]
│   └──xfconfd—2*[{xfconfd}]
├──systemd-journal
├──systemd-logind
├──systemd-resolve
├──systemd-udevd
├──udisksd—4*[{udisksd}]
├──unattended-upgr—{unattended-upgr}
├──upowerd—2*[{upowerd}]
├──whoopsie—2*[{whoopsie}]
├──wpa_supplicant
├──xfce4-power-man—2*[{xfce4-power-man}]
└──xfsettingsd—2*[{xfsettingsd}]

```

top -d 1:

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
950	fischma+	20	0	165704	2784	2412	S	1,0	0,1	0:28.24	VBoxClient
3659	fischma+	20	0	22224	3768	3236	R	1,0	0,2	0:00.11	top
1	root	20	0	167136	11156	8324	S	0,0	0,6	0:01.63	systemd
2	root	20	0	0	0	0	S	0,0	0,0	0:00.00	kthreadd
3	root	0	-20	0	0	0	I	0,0	0,0	0:00.00	rcu_gp
4	root	0	-20	0	0	0	I	0,0	0,0	0:00.00	rcu_par_gp
6	root	0	-20	0	0	0	I	0,0	0,0	0:00.00	kworker/0:0H-events_high
9	root	0	-20	0	0	0	I	0,0	0,0	0:00.00	mm_percpu_wq
10	root	20	0	0	0	0	S	0,0	0,0	0:00.00	rcu_tasks_rude
11	root	20	0	0	0	0	S	0,0	0,0	0:00.00	rcu_tasks_trace
12	root	20	0	0	0	0	S	0,0	0,0	0:00.03	ksoftirqd/0
13	root	20	0	0	0	0	I	0,0	0,0	0:03.27	rcu_sched
14	root	rt	0	0	0	0	S	0,0	0,0	0:00.11	migration/0
15	root	-51	0	0	0	0	S	0,0	0,0	0:00.00	idle_inject/0
16	root	20	0	0	0	0	S	0,0	0,0	0:00.00	cpuhp/0
17	root	20	0	0	0	0	S	0,0	0,0	0:00.00	cpuhp/1
18	root	-51	0	0	0	0	S	0,0	0,0	0:00.00	idle_inject/1
19	root	rt	0	0	0	0	S	0,0	0,0	0:00.37	migration/1
20	root	20	0	0	0	0	S	0,0	0,0	0:00.01	ksoftirqd/1
22	root	0	-20	0	0	0	I	0,0	0,0	0:00.00	kworker/1:0H-events_high
23	root	20	0	0	0	0	S	0,0	0,0	0:00.00	cpuhp/2
24	root	-51	0	0	0	0	S	0,0	0,0	0:00.00	idle_inject/2
25	root	rt	0	0	0	0	S	0,0	0,0	0:00.37	migration/2
26	root	20	0	0	0	0	S	0,0	0,0	0:00.02	ksoftirqd/2
28	root	0	-20	0	0	0	I	0,0	0,0	0:00.00	kworker/2:0H-events_high
29	root	20	0	0	0	0	S	0,0	0,0	0:00.00	cpuhp/3
30	root	-51	0	0	0	0	S	0,0	0,0	0:00.00	idle_inject/3
31	root	rt	0	0	0	0	S	0,0	0,0	0:00.37	migration/3
32	root	20	0	0	0	0	S	0,0	0,0	0:00.09	ksoftirqd/3
34	root	0	-20	0	0	0	I	0,0	0,0	0:00.00	kworker/3:0H-events_high

top -S:

```
top - 15:18:10 up 2:40, 2 users, load average: 0,00, 0,00, 0,00
Tasks: 181 total, 1 running, 180 sleeping, 0 stopped, 0 zombie
%Cpu(s): 0,0 us, 0,1 sy, 0,0 ni, 99,9 id, 0,0 wa, 0,0 hi, 0,0 si, 0,0 st
MiB Mem : 1979,9 total, 668,7 free, 423,6 used, 887,6 buff/cache
MiB Swap: 1897,4 total, 1897,4 free, 0,0 used, 1392,9 avail Mem
```

PID	USER	PR	NI	VIRT	RES	SHR	S	%CPU	%MEM	TIME+	COMMAND
42	root	20	0	0	0	0	S	0,3	0,0	0:00.62	kcompactd0
950	fischma+	20	0	165704	2784	2412	S	0,3	0,1	0:28.45	VBoxClient
3652	root	20	0	0	0	0	I	0,3	0,0	0:00.04	kworker/u8:0-events_pow
3666	fischma+	20	0	22224	3884	3356	R	0,3	0,2	0:00.04	top
1	root	20	0	167136	11156	8324	S	0,0	0,6	0:15.32	systemd
2	root	20	0	0	0	0	S	0,0	0,0	0:00.00	kthreadd
3	root	0	-20	0	0	0	I	0,0	0,0	0:00.00	rcu_gp
4	root	0	-20	0	0	0	I	0,0	0,0	0:00.00	rcu_par_gp
6	root	0	-20	0	0	0	I	0,0	0,0	0:00.00	kworker/0:0H-events_high
9	root	0	-20	0	0	0	I	0,0	0,0	0:00.00	mm_percpu_wq
10	root	20	0	0	0	0	S	0,0	0,0	0:00.00	rcu_tasks_rude_
11	root	20	0	0	0	0	S	0,0	0,0	0:00.00	rcu_tasks_trace
12	root	20	0	0	0	0	S	0,0	0,0	0:00.03	ksoftirqd/0
13	root	20	0	0	0	0	I	0,0	0,0	0:03.28	rcu_sched
14	root	rt	0	0	0	0	S	0,0	0,0	0:00.11	migration/0
15	root	-51	0	0	0	0	S	0,0	0,0	0:00.00	idle_inject/0
16	root	20	0	0	0	0	S	0,0	0,0	0:00.00	cpuhp/0
17	root	20	0	0	0	0	S	0,0	0,0	0:00.00	cpuhp/1
18	root	-51	0	0	0	0	S	0,0	0,0	0:00.00	idle_inject/1
19	root	rt	0	0	0	0	S	0,0	0,0	0:00.37	migration/1
20	root	20	0	0	0	0	S	0,0	0,0	0:00.01	ksoftirqd/1
22	root	0	-20	0	0	0	I	0,0	0,0	0:00.00	kworker/1:0H-events_high
23	root	20	0	0	0	0	S	0,0	0,0	0:00.00	cpuhp/2
24	root	-51	0	0	0	0	S	0,0	0,0	0:00.00	idle_inject/2
25	root	rt	0	0	0	0	S	0,0	0,0	0:00.37	migration/2
26	root	20	0	0	0	0	S	0,0	0,0	0:00.02	ksoftirqd/2
28	root	0	-20	0	0	0	I	0,0	0,0	0:00.00	kworker/2:0H-events_high
29	root	20	0	0	0	0	S	0,0	0,0	0:00.00	cpuhp/3
30	root	-51	0	0	0	0	S	0,0	0,0	0:00.00	idle_inject/3
31	root	rt	0	0	0	0	S	0,0	0,0	0:00.37	migration/3

```
find: '/etc/polkit-1/localauthority': Permission denied
find: '/etc/ssl/private': Permission denied
find: '/root': Permission denied
find: '/tmp/systemd-private-4017e9a9f45f4d47ac2cc9d0c1db2e2b-systemd-resolved.service-x41fTf': Permission denied
find: '/tmp/systemd-private-4017e9a9f45f4d47ac2cc9d0c1db2e2b-upower.service-6WCmuh': Permission denied
find: '/tmp/systemd-private-4017e9a9f45f4d47ac2cc9d0c1db2e2b-ModemManager.service-s5vWEh': Permission denied
find: '/tmp/systemd-private-4017e9a9f45f4d47ac2cc9d0c1db2e2b-systemd-logind.service-ocokRf': Permission denied
find: '/tmp/systemd-private-4017e9a9f45f4d47ac2cc9d0c1db2e2b-colord.service-8DDPJg': Permission denied
find: '/run/lightdm': Permission denied
find: '/run/udisks2': Permission denied
find: '/run/cups/certs': Permission denied
find: '/run/user/1000/inaccessible': Permission denied
find: '/run/sudo': Permission denied
find: '/run/speech-dispatcher': Permission denied
find: '/run/systemd/resolve/netif': Permission denied
find: '/run/systemd/unit-root': Permission denied
find: '/run/systemd/inaccessible': Permission denied
find: '/run/initramfs': Permission denied
find: '/sys/kernel/tracing': Permission denied
find: '/sys/kernel/debug': Permission denied
find: '/sys/fs/pstore': Permission denied
find: '/sys/fs/bpf': Permission denied
```

```
fischmannn@fischmannn-VirtualBox:~$ ps
  PID TTY          TIME CMD
 3749 tty1      00:00:00 bash
 3781 tty1      00:00:00 ps
fischmannn@fischmannn-VirtualBox:~$ ps u
USER      PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
fischma+  3749  0.0  0.2  21124  5172 tty1    S    15:20   0:00 -bash
fischma+  3782  0.0  0.1  21840  3304 tty1    R+   15:30   0:00 ps u
```

```
fischmannn@fischmannn-VirtualBox:~$ top &
[1] 3783
fischmannn@fischmannn-VirtualBox:~$ jobs -l
bash: jobs: -l: invalid option
jobs: usage: jobs [-lnprs] [jobspec ...] or jobs -x command [args]

[1]+  Stopped                  top
fischmannn@fischmannn-VirtualBox:~$ kill -9 3783
fischmannn@fischmannn-VirtualBox:~$ jobs -l
jobs: -l: command not found
[1]+  Killed                   top
```

 Xubuntu2021 [En fonction] - Oracle VM VirtualBox

```
#include <stdio.h>
```

```
main()
{
    while(1)
    {

    }
}
```

```
fischmannn@fischmannn-VirtualBox:~$ gcc -c teste.c
teste.c:3:1: warning: return type defaults to 'int' [-Wimplicit-int]
   3 | main()
     | ~~~~~
fischmannn@fischmannn-VirtualBox:~$ gcc -o teste teste.o
fischmannn@fischmannn-VirtualBox:~$ cp teste teste1
fischmannn@fischmannn-VirtualBox:~$ ./teste &
[3] 8529
fischmannn@fischmannn-VirtualBox:~$ -bash: ./: Is a directory
./teste1 &
[4] 8543
[3] Exit 126          ./ teste
fischmannn@fischmannn-VirtualBox:~$ ./teste1 &
[5] 8545
fischmannn@fischmannn-VirtualBox:~$ ps
  PID TTY          TIME CMD
 4047 tty2      00:00:00 bash
 4063 tty2      00:00:00 vi
 4065 tty2      00:00:00 vi
 8543 tty2      00:00:34 teste1
 8545 tty2      00:00:14 teste1
 8600 tty2      00:00:00 ps
fischmannn@fischmannn-VirtualBox:~$ ps -l
F S  UID      PID      PPID  C  PRI  NI ADDR SZ  WCHAN  TTY          TIME CMD
4 S  1000     4047      1602  0  80   0 -   5281 do_wai tty2      00:00:00 bash
0 T  1000     4063      4047  0  80   0 -   8747 do_sig tty2      00:00:00 vi
0 T  1000     4065      4047  0  80   0 -   8747 do_sig tty2      00:00:00 vi
0 R  1000     8543      4047  99  80   0 -    591 -      tty2      00:00:59 teste1
0 R  1000     8545      4047  99  80   0 -    591 -      tty2      00:00:40 teste1
0 R  1000     8629      4047  0  80   0 -   5440 -      tty2      00:00:00 ps
```

```
fischmannn@fischmannn-VirtualBox:~$ kill -9 8543
fischmannn@fischmannn-VirtualBox:~$ kill -9 5845
-bash: kill: (5845) - No such process
[4] Killed ./teste1
fischmannn@fischmannn-VirtualBox:~$ kill -9 8545
fischmannn@fischmannn-VirtualBox:~$ ps -1
  PID TTY          STAT       TIME COMMAND
    1 ?           Ss          0:01 /sbin/init splash
[5] Killed ./teste1
fischmannn@fischmannn-VirtualBox:~$ ps
  PID TTY          TIME CMD
 4047 tty2        00:00:00 bash
 4063 tty2        00:00:00 vi
 4065 tty2        00:00:00 vi
 8631 tty2        00:00:00 ps
```

Capítulo 7: Permissão e Propriedade

```
fischmannn@fischmannn-VirtualBox:~$ ls -l
total 6860
-rw-rw-r-- 1 fischmannn fischmannn    0 dez  8 19:23 arquivo.txt
-rw-rw-r-- 1 fischmannn fischmannn    0 dez  8 19:22 cidades.txt
drwxr-xr-x 2 fischmannn fischmannn  4096 dez  7 16:05 Desktop
drwxr-xr-x 2 fischmannn fischmannn  4096 dez  7 16:05 Documents
drwxr-xr-x 2 fischmannn fischmannn  4096 dez  7 16:05 Downloads
-rw-rw-r-- 1 fischmannn fischmannn 6942720 dez  8 12:12 etc.tar
drwxr-xr-x 2 fischmannn fischmannn  4096 dez  7 16:05 Music
drwxr-xr-x 2 fischmannn fischmannn  4096 dez  7 16:05 Pictures
drwxr-xr-x 2 fischmannn fischmannn  4096 dez  7 16:05 Public
drwxr-xr-x 2 fischmannn fischmannn  4096 dez  7 16:05 Templates
-rwxrwxr-x 1 fischmannn fischmannn  16464 dez  8 19:06 teste
-rwxrwxr-x 1 fischmannn fischmannn  16464 dez  8 19:06 teste1
-rw-rw-r-- 1 fischmannn fischmannn    50 dez  8 19:02 teste.c
-rw-rw-r-- 1 fischmannn fischmannn  1360 dez  8 19:06 teste.o
drwxr-xr-x 2 fischmannn fischmannn  4096 dez  7 16:05 Videos
fischmannn@fischmannn-VirtualBox:~$ touch cidades.txt
fischmannn@fischmannn-VirtualBox:~$ touch arquivo.txt
fischmannn@fischmannn-VirtualBox:~$ ls -l cidades.txt
-rw-rw-r-- 1 fischmannn fischmannn 0 dez  8 19:24 cidades.txt
fischmannn@fischmannn-VirtualBox:~$ chmod g-r cidades.txt
fischmannn@fischmannn-VirtualBox:~$ ls -l cidades.txt
-rw--w-r-- 1 fischmannn fischmannn 0 dez  8 19:24 cidades.txt
fischmannn@fischmannn-VirtualBox:~$ chmod o-r cidades.txt
fischmannn@fischmannn-VirtualBox:~$ ls -l cidades.txt
-rw--w---- 1 fischmannn fischmannn 0 dez  8 19:24 cidades.txt
fischmannn@fischmannn-VirtualBox:~$ chmod u-r cidades.txt
fischmannn@fischmannn-VirtualBox:~$ ls -l cidades.txt
--w--w---- 1 fischmannn fischmannn 0 dez  8 19:24 cidades.txt
fischmannn@fischmannn-VirtualBox:~$ chmod a+r cidades.txt
fischmannn@fischmannn-VirtualBox:~$ ls -l cidades.txt
-rw-rw-r-- 1 fischmannn fischmannn 0 dez  8 19:24 cidades.txt
fischmannn@fischmannn-VirtualBox:~$
```

Capítulo 8: Gerenciando Usuários

```
fischmannn@fischmannn-VirtualBox:~$ cat /etc/passwd | head -10
root:x:0:0:root:/root:/bin/bash
daemon:x:1:1:daemon:/usr/sbin:/usr/sbin/nologin
bin:x:2:2:bin:/bin:/usr/sbin/nologin
sys:x:3:3:sys:/dev:/usr/sbin/nologin
sync:x:4:65534:sync:/bin:/bin/sync
games:x:5:60:games:/usr/games:/usr/sbin/nologin
man:x:6:12:man:/var/cache/man:/usr/sbin/nologin
lp:x:7:7:lp:/var/spool/lpd:/usr/sbin/nologin
mail:x:8:8:mail:/var/mail:/usr/sbin/nologin
news:x:9:9:news:/var/spool/news:/usr/sbin/nologin
fischmannn@fischmannn-VirtualBox:~$ cut -d: -f1 /etc/passwd | head -10
root
daemon
bin
sys
sync
games
man
lp
mail
news
fischmannn@fischmannn-VirtualBox:~$ cat /etc/group | head -10
root:x:0:
daemon:x:1:
bin:x:2:
sys:x:3:
adm:x:4:syslog,fischmannn
tty:x:5:syslog
disk:x:6:
lp:x:7:
mail:x:8:
news:x:9:
fischmannn@fischmannn-VirtualBox:~$ _
```

```
fischmannn@fischmannn-VirtualBox:~$ sudo adduser aluno
[sudo] password for fischmannn:
Adding user `aluno' ...
Adding new group `aluno' (1001) ...
Adding new user `aluno' (1001) with group `aluno' ...
Creating home directory `/home/aluno' ...
Copying files from `/etc/skel' ...
New password:
Retype new password:
passwd: password updated successfully
Changing the user information for aluno
Enter the new value, or press ENTER for the default
    Full Name []: Aluno
    Room Number []: 2
    Work Phone []: +33 6 35 58 79 32
    Home Phone []: ??
    Other []: 8
Is the information correct? [Y/n] Y
fischmannn@fischmannn-VirtualBox:~$ passwd
Changing password for fischmannn.
Current password:
New password:
Retype new password:
You must choose a longer password
New password:
Retype new password:
No password supplied
New password:
Retype new password:
Password unchanged
passwd: Authentication token manipulation error
passwd: password unchanged
```

```
fischmannn@fischmannn-VirtualBox:~$ userdel -r aluno
userdel: user 'aluno' does not exist
fischmannn@fischmannn-VirtualBox:~$ sudo groupadd professores
fischmannn@fischmannn-VirtualBox:~$ sudo groupmod -n professores funcionarios
sudo: groupmod: command not found
fischmannn@fischmannn-VirtualBox:~$ sudo groupmod -n professores funcionarios
groupmod: group 'funcionarios' does not exist
fischmannn@fischmannn-VirtualBox:~$ sudo groupdel professores
fischmannn@fischmannn-VirtualBox:~$
```

Capítulo 9: Comandos para Redes de Computadores

```
fischmannn@fischmannn-VirtualBox:~$ sudo apt install net-tools
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following NEW packages will be installed:
  net-tools
0 upgraded, 1 newly installed, 0 to remove and 150 not upgraded.
Need to get 196 kB of archives.
After this operation, 864 kB of additional disk space will be used.
Get:1 http://br.archive.ubuntu.com/ubuntu focal/main amd64 net-tools amd64 1.60+git20180626.a
1ubuntu1 [196 kB]
Fetched 196 kB in 5s (42,5 kB/s)
Selecting previously unselected package net-tools.
(Reading database ... 202861 files and directories currently installed.)
Preparing to unpack .../net-tools_1.60+git20180626.aebd88e-1ubuntu1_amd64.deb ...
Unpacking net-tools (1.60+git20180626.aebd88e-1ubuntu1) ...
Setting up net-tools (1.60+git20180626.aebd88e-1ubuntu1) ...
Processing triggers for man-db (2.9.1-1) ...
fischmannn@fischmannn-VirtualBox:~$
```

```
fischmannn@fischmannn-VirtualBox:~$ hostname
fischmannn-VirtualBox
fischmannn@fischmannn-VirtualBox:~$ cat /etc/hosts
127.0.0.1    localhost
127.0.1.1    fischmannn-VirtualBox

# The following lines are desirable for IPv6 capable hosts
::1        ip6-localhost ip6-loopback
fe00::0    ip6-localnet
ff00::0    ip6-mcastprefix
ff02::1    ip6-allnodes
ff02::2    ip6-allrouters
fischmannn@fischmannn-VirtualBox:~$ arp -a
_gateway (10.0.2.2) at 52:54:00:12:35:02 [ether] on enp0s3
```

```
fischmannn@fischmannn-VirtualBox:~$ ifconfig eno1
eno1: error fetching interface information: Device not found
fischmannn@fischmannn-VirtualBox:~$ ifconfig enp0s3
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST>  mtu 1500
    inet 10.0.2.15  netmask 255.255.255.0  broadcast 10.0.2.255
    inet6 fe80::c70e:c768:879a:1b97  prefixlen 64  scopeid 0x20<link>
    ether 08:00:27:37:d3:ab  txqueuelen 1000  (Ethernet)
    RX packets 16236  bytes 24271434 (24.2 MB)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 3942  bytes 250296 (250.2 KB)
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0

fischmannn@fischmannn-VirtualBox:~$ ifconfig enp0s3 down
SIOCSIFFLAGS: Operation not permitted
fischmannn@fischmannn-VirtualBox:~$ sudo ifconfig enp0s3 down
fischmannn@fischmannn-VirtualBox:~$ ifconfig enp0s3
enp0s3: flags=4098<BROADCAST,MULTICAST>  mtu 1500
    ether 08:00:27:37:d3:ab  txqueuelen 1000  (Ethernet)
    RX packets 16236  bytes 24271434 (24.2 MB)
    RX errors 0  dropped 0  overruns 0  frame 0
    TX packets 3942  bytes 250296 (250.2 KB)
    TX errors 0  dropped 0  overruns 0  carrier 0  collisions 0
```

```
fischmannn@fischmannn-VirtualBox:~$ sudo ifconfig enp0s3 mtu 1499
fischmannn@fischmannn-VirtualBox:~$ ifconfig
enp0s3: flags=4163<UP,BROADCAST,RUNNING,MULTICAST> mtu 1499
    inet 10.0.2.15 netmask 255.255.255.0 broadcast 10.0.2.255
    inet6 fe80::c70e:c768:879a:1b97 prefixlen 64 scopeid 0x20<link>
    ether 08:00:27:37:d3:ab txqueuelen 1000 (Ethernet)
    RX packets 16247 bytes 24273507 (24.2 MB)
    RX errors 0 dropped 0 overruns 0 frame 0
    TX packets 3986 bytes 257451 (257.4 KB)
    TX errors 0 dropped 0 overruns 0 carrier 0 collisions 0
```

```
fischmannn@fischmannn-VirtualBox:~$ ping -c 10 www.ufu.br
PING www.ufu.br (200.19.145.55) 56(84) bytes of data:
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=1 ttl=49 time=277 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=2 ttl=49 time=333 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=3 ttl=49 time=373 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=4 ttl=49 time=277 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=5 ttl=49 time=350 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=6 ttl=49 time=308 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=7 ttl=49 time=307 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=8 ttl=49 time=214 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=9 ttl=49 time=303 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=10 ttl=49 time=304 ms

--- www.ufu.br ping statistics ---
10 packets transmitted, 10 received, 0% packet loss, time 9019ms
rtt min/avg/max/mdev = 214.145/304.588/373.423/41.624 ms
fischmannn@fischmannn-VirtualBox:~$ ping -i 5 -c 3 www.google.com
PING www.google.com (142.250.219.132) 56(84) bytes of data:
64 bytes from gru14s29-in-f4.1e100.net (142.250.219.132): icmp_seq=2 ttl=114 time=181 ms
64 bytes from gru14s29-in-f4.1e100.net (142.250.219.132): icmp_seq=3 ttl=114 time=198 ms

--- www.google.com ping statistics ---
3 packets transmitted, 2 received, 33.3333% packet loss, time 10693ms
rtt min/avg/max/mdev = 181.071/189.727/198.383/8.656 ms
```



```
fischmannn@fischmannn-VirtualBox:~$ dig www.google.com

; <<>> DiG 9.16.1-Ubuntu <<>> www.google.com
;; global options: +cmd
;; Got answer:
;; ->>HEADER<<- opcode: QUERY, status: NOERROR, id: 60745
;; flags: qr rd ra; QUERY: 1, ANSWER: 1, AUTHORITY: 0, ADDITIONAL: 1

;; OPT PSEUDOSECTION:
; EDNS: version: 0, flags:; udp: 65494
;; QUESTION SECTION:
;www.google.com.                IN      A

;; ANSWER SECTION:
www.google.com.                180     IN      A      142.250.219.132

;; Query time: 288 msec
;; SERVER: 127.0.0.53#53(127.0.0.53)
;; WHEN: qua dez 08 19:58:29 -03 2021
;; MSG SIZE rcvd: 59

fischmannn@fischmannn-VirtualBox:~$ nslookup www.google.com
Server:                127.0.0.53
Address:                127.0.0.53#53

Non-authoritative answer:
Name:   www.google.com
Address: 142.250.219.132
Name:   www.google.com
Address: 2800:3f0:4001:822::2004
```

```
fischmannn@fischmannn-VirtualBox:~$ traceroute www.ufmg.br
traceroute to www.ufmg.br (150.164.250.1), 30 hops max, 60 byte packets
 1  _gateway (10.0.2.2)  0.183 ms  0.135 ms  0.101 ms
 2  * * *
 3  * * *
 4  * * *
 5  * * *
 6  * * *
 7  * * *
 8  * * *
 9  * * *
10  * * *
11  * * *
12  * * *
13  * * *
14  * * *
15  * * *
16  * * *
17  * * *
18  * * *
19  * * *
20  * * *
21  * * *
22  * * *
23  * * *
24  * * *
25  * * *
26  * * *
27  * * *
28  * * *
```

```
fischmannn@fischmannn-VirtualBox:~$ tracepath www.ufmg.br
1?: [LOCALHOST] pmtu 1499
1: _gateway 0.617ms
1: _gateway 0.509ms
2: no reply
3: _gateway 1.621ms IN
Resume: pmtu 1499
```

```
fischmannn@fischmannn-VirtualBox:~$ netstat -i
Kernel Interface table
Iface MTU RX-OK RX-ERR RX-DRP RX-OVR TX-OK TX-ERR TX-DRP TX-OVR Flg
enp0s3 1499 16940 0 0 0 4487 0 0 0 BMRU
lo 65536 233 0 0 0 233 0 0 0 LRU
```

```
fischmannn@fischmannn-VirtualBox:~$ nmap -v localhost
Starting Nmap 7.80 ( https://nmap.org ) at 2021-12-08 20:03 -03
Initiating Ping Scan at 20:03
Scanning localhost (127.0.0.1) [2 ports]
Completed Ping Scan at 20:03, 0.00s elapsed (1 total hosts)
Initiating Connect Scan at 20:03
Scanning localhost (127.0.0.1) [1000 ports]
Discovered open port 631/tcp on 127.0.0.1
Completed Connect Scan at 20:03, 0.04s elapsed (1000 total ports)
Nmap scan report for localhost (127.0.0.1)
Host is up (0.000099s latency).
Not shown: 999 closed ports
PORT      STATE SERVICE
631/tcp   open ipp
```

```
Read data files from: /usr/bin/./share/nmap
Nmap done: 1 IP address (1 host up) scanned in 0.10 seconds
```

```
fischmannn@fischmannn-VirtualBox:~$ route
Kernel IP routing table
Destination Gateway Genmask Flags Metric Ref Use Iface
default _gateway 0.0.0.0 UG 100 0 0 enp0s3
10.0.2.0 0.0.0.0 255.255.255.0 U 100 0 0 enp0s3
link-local 0.0.0.0 255.255.0.0 U 1000 0 0 enp0s3
```

```
fischmannn@fischmannn-VirtualBox:~$ ssh vivas@192.168.0.1
```

```
fischmannn@fischmannn-VirtualBox:~$ tcpdump -D
1.enp0s3 [Up, Running]
2.lo [Up, Running, Loopback]
3.any (Pseudo-device that captures on all interfaces) [Up, Running]
4.bluetooth-monitor (Bluetooth Linux Monitor) [none]
5.nflog (Linux netfilter log (NFLOG) interface) [none]
6.nfqueue (Linux netfilter queue (NFQUEUE) interface) [none]
```

```

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w.google.com.br cookie: =511=g82eo00nXds60ZmdwBPX520FABKugcobkTo3LA1 Allow? (Y/N/Always/never)
Arrow keys: Up and Down to move. Right to follow a link; Left to go back.
)elp O)ptions P)rint G)o M)ain screen Q)uit /=search [delete]=history list

```

Capítulo 10: Gerenciamento de Pacotes

```

fischmannn@fischmannn-VirtualBox:~$ apt update
Reading package lists... Done
E: Could not open lock file /var/lib/apt/lists/lock - open (13: Permission denied)
E: Unable to lock directory /var/lib/apt/lists/
W: Problem unlinking the file /var/cache/apt/pkgcache.bin - RemoveCaches (13: Permission denied)
W: Problem unlinking the file /var/cache/apt/srcpkgcache.bin - RemoveCaches (13: Permission denied)
fischmannn@fischmannn-VirtualBox:~$ sudo apt update
Hit:1 http://br.archive.ubuntu.com/ubuntu focal InRelease
Get:2 http://br.archive.ubuntu.com/ubuntu focal-updates InRelease [114 kB]
Get:3 http://br.archive.ubuntu.com/ubuntu focal-backports InRelease [108 kB]
Get:4 http://br.archive.ubuntu.com/ubuntu focal-updates/main amd64 Packages [1.391 kB]
Get:5 http://br.archive.ubuntu.com/ubuntu focal-updates/main i386 Packages [572 kB]
Get:6 http://br.archive.ubuntu.com/ubuntu focal-updates/main Translation-en [282 kB]
Get:7 http://br.archive.ubuntu.com/ubuntu focal-updates/main amd64 DEP-11 Metadata [277 kB]
Get:8 http://br.archive.ubuntu.com/ubuntu focal-updates/main DEP-11 48x48 Icons [60,8 kB]
Get:9 http://br.archive.ubuntu.com/ubuntu focal-updates/main amd64 c-n-f Metadata [14,6 kB]
Get:10 http://br.archive.ubuntu.com/ubuntu focal-updates/restricted amd64 Packages [607 kB]
Get:11 http://security.ubuntu.com/ubuntu focal-security InRelease [114 kB]
Get:12 http://br.archive.ubuntu.com/ubuntu focal-updates/restricted Translation-en [86,8 kB]
Get:13 http://br.archive.ubuntu.com/ubuntu focal-updates/universe amd64 Packages [879 kB]
Get:14 http://br.archive.ubuntu.com/ubuntu focal-updates/universe i386 Packages [650 kB]
Get:15 http://br.archive.ubuntu.com/ubuntu focal-updates/universe Translation-en [190 kB]
Get:16 http://br.archive.ubuntu.com/ubuntu focal-updates/universe amd64 DEP-11 Metadata [361 kB]
Get:17 http://br.archive.ubuntu.com/ubuntu focal-updates/universe amd64 c-n-f Metadata [19,6 kB]
Get:18 http://br.archive.ubuntu.com/ubuntu focal-updates/multiverse amd64 DEP-11 Metadata [940 B]
Get:19 http://br.archive.ubuntu.com/ubuntu focal-backports/main amd64 DEP-11 Metadata [7.980 B]
Get:20 http://br.archive.ubuntu.com/ubuntu focal-backports/universe amd64 DEP-11 Metadata [11,3 kB]
Get:21 http://security.ubuntu.com/ubuntu focal-security/main amd64 DEP-11 Metadata [35,7 kB]
Get:22 http://security.ubuntu.com/ubuntu focal-security/universe amd64 DEP-11 Metadata [64,4 kB]
Get:23 http://security.ubuntu.com/ubuntu focal-security/multiverse amd64 DEP-11 Metadata [2.464 B]
Fetched 5.851 kB in 7s (820 kB/s)

```

```
fischmannn@fischmannn-VirtualBox:~$ apt remove vim
E: Could not open lock file /var/lib/dpkg/lock-frontent - open (13: Permission denied)
E: Unable to acquire the dpkg frontend lock (/var/lib/dpkg/lock-frontent), are you root?
fischmannn@fischmannn-VirtualBox:~$ sudo apt remove vim
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following package was automatically installed and is no longer required:
  vim-runtime
Use 'sudo apt autoremove' to remove it.
The following packages will be REMOVED:
  vim
0 upgraded, 0 newly installed, 1 to remove and 150 not upgraded.
After this operation, 3.111 kB disk space will be freed.
Do you want to continue? [Y/n] Y
(Reading database ... 206770 files and directories currently installed.)
Removing vim (2:8.1.2269-1ubuntu5.4) ...
update-alternatives: using /usr/bin/vim.tiny to provide /usr/bin/vi (vi) in auto mode
update-alternatives: using /usr/bin/vim.tiny to provide /usr/bin/view (view) in auto mode
update-alternatives: using /usr/bin/vim.tiny to provide /usr/bin/ex (ex) in auto mode
update-alternatives: using /usr/bin/vim.tiny to provide /usr/bin/rview (rview) in auto mode
fischmannn@fischmannn-VirtualBox:~$ dnf install lshw

Command 'dnf' not found, did you mean:

  command 'df' from deb coreutils (8.30-3ubuntu2)

Try: sudo apt install <deb name>
```

Capítulo 14: Verificando Configuração de Hardware e Software

```
fischmannn@fischmannn-VirtualBox:~$ uname -a
Linux fischmannn-VirtualBox 5.11.0-41-generic #45~20.04.1-Ubuntu SMP Wed Nov 10 10:20:10 UTC 2021
6_64 x86_64 x86_64 GNU/Linux
fischmannn@fischmannn-VirtualBox:~$ uname -s
Linux
fischmannn@fischmannn-VirtualBox:~$ uname -n
fischmannn-VirtualBox
fischmannn@fischmannn-VirtualBox:~$ uname -r
5.11.0-41-generic
fischmannn@fischmannn-VirtualBox:~$ uname -v
#45~20.04.1-Ubuntu SMP Wed Nov 10 10:20:10 UTC 2021
fischmannn@fischmannn-VirtualBox:~$ head -n1 /etc/issue
Ubuntu 20.04.3 LTS \n \l
```

```

CPU(s): 4
On-line CPU(s) list: 0-3
Thread(s) per core: 1
Core(s) per socket: 4
Socket(s): 1
NUMA node(s): 1
Vendor ID: GenuineIntel
CPU family: 6
Model: 158
Model name: Intel(R) Core(TM) i5-7300HQ CPU @ 2.50GHz
Stepping: 9
CPU MHz: 2495.998
BogoMIPS: 4991.99
Hypervisor vendor: KVM
Virtualization type: full
L1d cache: 128 KiB
L1i cache: 128 KiB
L2 cache: 1 MiB
L3 cache: 24 MiB
NUMA node0 CPU(s): 0-3
Vulnerability Itlb multihit: KVM: Mitigation: VMX unsupported
Vulnerability L1tf: Mitigation; PTE Inversion
Vulnerability Mds: Mitigation; Clear CPU buffers; SMT Host state unknown
Vulnerability Meltdown: Mitigation; PTI
Vulnerability Spec store bypass: Vulnerable
Vulnerability Spectre v1: Mitigation; usercopy/swapgs barriers and __user pointer sanitizat
n
Vulnerability Spectre v2: Mitigation; Full generic retpoline, STIBP disabled, RSB filling
Vulnerability Srbds: Unknown: Dependent on hypervisor status
Vulnerability Tsx async abort: Not affected
Flags: fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca cmov pat
se36 clflush mmx fxsr sse sse2 ht syscall nx rdtscp lm constant_t
rep_good nopl xtopology nonstop_tsc cpuid tsc_known_freq pni pcl
lqdq ssse3 cx16 pcid sse4_1 sse4_2 x2apic movbe popcnt aes xsave
x rdrand hypervisor lahf_lm abm 3dnowprefetch invpcid_single pti
gsbase avx2 invpcid rdseed clflushopt md_clear flush_l1d

```

```
fischmannn@fischmannn-VirtualBox:~$ lsusb
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
Bus 002 Device 002: ID 80ee:0021 VirtualBox USB Tablet
Bus 002 Device 001: ID 1d6b:0001 Linux Foundation 1.1 root hub
fischmannn@fischmannn-VirtualBox:~$ lspci
00:00.0 Host bridge: Intel Corporation 440FX - 82441FX PMC [Natoma] (rev 02)
00:01.0 ISA bridge: Intel Corporation 82371SB PIIX3 ISA [Natoma/Triton II]
00:01.1 IDE interface: Intel Corporation 82371AB/EB/MB PIIX4 IDE (rev 01)
00:02.0 VGA compatible controller: VMware SVGA II Adapter
00:03.0 Ethernet controller: Intel Corporation 82540EM Gigabit Ethernet Controller (rev 02)
00:04.0 System peripheral: InnoTek Systemberatung GmbH VirtualBox Guest Service
00:05.0 Multimedia audio controller: Intel Corporation 82801AA AC'97 Audio Controller (rev 01)
00:06.0 USB controller: Apple Inc. KeyLargo/Intrepid USB
00:07.0 Bridge: Intel Corporation 82371AB/EB/MB PIIX4 ACPI (rev 08)
00:0b.0 USB controller: Intel Corporation 82801FB/FBM/FR/FW/FRW (ICH6 Family) USB2 EHCI Controller
00:0d.0 SATA controller: Intel Corporation 82801HM/HEM (ICH8M/ICH8M-E) SATA Controller [AHCI mode] (rev 02)
fischmannn@fischmannn-VirtualBox:~$ lsblk
NAME MAJ:MIN RM SIZE RO TYPE MOUNTPOINT
sda 8:0 0 40G 0 disk
└─sda1 8:1 0 40G 0 part /
sr0 11:0 1 58,3M 0 rom
fischmannn@fischmannn-VirtualBox:~$ cat /proc/partitions
Command 'cat' not found, but can be installed with:
sudo apt install ucommon-utils
fischmannn@fischmannn-VirtualBox:~$ cat /proc/partitions
major minor #blocks name
11 0 59672 sr0
8 0 41943040 sda
8 1 41940992 sda1
```

```
fischmannn@fischmannn-VirtualBox:~$ sudo fdisk -l
Disk /dev/sda: 40 GiB, 42949672960 bytes, 83886080 sectors
Disk model: VBOX HARDDISK
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disklabel type: dos
Disk identifier: 0x3cfb1944

Device Boot Start End Sectors Size Id Type
/dev/sda1 * 2048 83884031 83881984 40G 83 Linux
```

```
fischmannn@fischmannn-VirtualBox:~$ lspcmcia
fischmannn@fischmannn-VirtualBox:~$ free
total used free shared buff/cache available
Mem: 2027380 427572 451488 3716 1148320 1427468
Swap: 1942896 0 1942896
fischmannn@fischmannn-VirtualBox:~$ free -m
total used free shared buff/cache available
Mem: 1979 417 440 3 1121 1394
Swap: 1897 0 1897
```

```
SwapTotal:      1942896 kB
SwapFree:       1942896 kB
Dirty:          0 kB
Writeback:      0 kB
AnonPages:      327488 kB
Mapped:         154528 kB
Shmem:          3716 kB
KReclaimable:   74264 kB
Slab:           117076 kB
SReclaimable:   74264 kB
SUnreclaim:     42812 kB
KernelStack:    5728 kB
PageTables:     10020 kB
NFS_Unstable:   0 kB
Bounce:         0 kB
WritebackTmp:   0 kB
CommitLimit:    2956584 kB
Committed_AS:   2126572 kB
VmallocTotal:   34359738367 kB
VmallocUsed:    31712 kB
VmallocChunk:   0 kB
Percpu:         2896 kB
HardwareCorrupted: 0 kB
AnonHugePages:  0 kB
ShmemHugePages: 0 kB
ShmemPmdMapped: 0 kB
FileHugePages:  0 kB
FilePmdMapped:  0 kB
HugePages_Total: 0
HugePages_Free:  0
HugePages_Rsvd:  0
HugePages_Surp:  0
Hugepagesize:   2048 kB
Hugetlb:        0 kB
DirectMap4k:    135104 kB
DirectMap2M:    1961984 kB
```

```
fischmannn@fischmannn-VirtualBox:~$ vmstat -s
 2027380 K total memory
  427548 K used memory
  315892 K active memory
1085688 K inactive memory
  451476 K free memory
   46460 K buffer memory
1101896 K swap cache
1942896 K total swap
     0 K used swap
1942896 K free swap
   4232 non-nice user cpu ticks
   3499 nice user cpu ticks
   3138 system cpu ticks
537738 idle cpu ticks
   3420 IO-wait cpu ticks
     0 IRQ cpu ticks
   1608 softirq cpu ticks
     0 stolen cpu ticks
979011 pages paged in
401008 pages paged out
     0 pages swapped in
     0 pages swapped out
656909 interrupts
515350 CPU context switches
1639004902 boot time
   4646 forks
```

```
fischmannn@fischmannn-VirtualBox:~$ lsmem
RANGE                                SIZE  STATE REMOVABLE BLOCK
0x0000000000000000-0x000000007fffffff  2G online      yes  0-15

Memory block size:      128M
Total online memory:    2G
Total offline memory:   0B
```

```
fischmannn@fischmannn-VirtualBox:~$ sudo dmidecode -t 17
# dmidecode 3.2
Getting SMBIOS data from sysfs.
SMBIOS 2.5 present.
```



```

top - 20:33:03 up 24 min, 2 users, load average: 0,28, 0,12, 0,12
Tasks: 184 total, 1 running, 179 sleeping, 4 stopped, 0 zombie
%Cpu(s): 1,3 us, 1,3 sy, 0,0 ni, 97,4 id, 0,0 wa, 0,0 hi, 0,0 si, 0,0 st
MiB Mem : 1979,9 total, 440,1 free, 418,0 used, 1121,8 buff/cache
MiB Swap: 1897,4 total, 1897,4 free, 0,0 used. 1393,5 avail Mem

  PID USER      PR  NI   VIRT   RES   SHR S  %CPU  %MEM    TIME+  COMMAND
 4650 fischma+  20   0   22220   3820   3292 R   5,3   0,2   0:00.01 top
    1 root      20   0 168476  12576  8424 S   0,0   0,6   0:02.68 systemd
    2 root      20   0      0      0      0 S   0,0   0,0   0:00.00 kthreadd
    3 root       0 -20      0      0      0 I   0,0   0,0   0:00.00 rcu_gp
    4 root       0 -20      0      0      0 I   0,0   0,0   0:00.00 rcu_par_gp
    6 root       0 -20      0      0      0 I   0,0   0,0   0:00.00 kworker/0:0H-events_highpri
    9 root       0 -20      0      0      0 I   0,0   0,0   0:00.00 mm_percpu_wq
   10 root      20   0      0      0      0 S   0,0   0,0   0:00.00 rcu_tasks_rude_
   11 root      20   0      0      0      0 S   0,0   0,0   0:00.00 rcu_tasks_trace
   12 root      20   0      0      0      0 S   0,0   0,0   0:00.08 ksoftirqd/0
   13 root      20   0      0      0      0 I   0,0   0,0   0:00.61 rcu_sched
   14 root      rt    0      0      0      0 S   0,0   0,0   0:00.01 migration/0
   15 root     -51   0      0      0      0 S   0,0   0,0   0:00.00 idle_inject/0
   16 root      20   0      0      0      0 S   0,0   0,0   0:00.00 cpuhp/0
   17 root      20   0      0      0      0 S   0,0   0,0   0:00.00 cpuhp/1
   18 root     -51   0      0      0      0 S   0,0   0,0   0:00.00 idle_inject/1
   19 root      rt    0      0      0      0 S   0,0   0,0   0:00.30 migration/1
   20 root      20   0      0      0      0 S   0,0   0,0   0:00.03 ksoftirqd/1
   22 root       0 -20      0      0      0 I   0,0   0,0   0:00.00 kworker/1:0H-events_highpri
   23 root      20   0      0      0      0 S   0,0   0,0   0:00.00 cpuhp/2
   24 root     -51   0      0      0      0 S   0,0   0,0   0:00.00 idle_inject/2
   25 root      rt    0      0      0      0 S   0,0   0,0   0:00.29 migration/2
   26 root      20   0      0      0      0 S   0,0   0,0   0:00.03 ksoftirqd/2
   28 root       0 -20      0      0      0 I   0,0   0,0   0:00.00 kworker/2:0H-events_highpri
   29 root      20   0      0      0      0 S   0,0   0,0   0:00.00 cpuhp/3
   30 root     -51   0      0      0      0 S   0,0   0,0   0:00.00 idle_inject/3
   31 root      rt    0      0      0      0 S   0,0   0,0   0:00.29 migration/3
   32 root      20   0      0      0      0 S   0,0   0,0   0:00.03 ksoftirqd/3
   34 root       0 -20      0      0      0 I   0,0   0,0   0:00.00 kworker/3:0H-events_highpri
   35 root      20   0      0      0      0 S   0,0   0,0   0:00.00 kdevtmpfs

```