UNIVERSIDADE FEDERAL DE UBERLÂNDIA

FACULDADE DE ENGENHARIA MECÂNICA

Curso de Graduação em Engenharia Mecatrônica

RELATÓRIO DA PRIMEIRA SEMANA DA DISCIPLINA SISTEMAS DIGITAIS PARA MECATRÔNICA (FEELT 49081)

TAREFA SEMANA 01B - INSTALAÇÃO E CONFIGURAÇÃO DO LINUX

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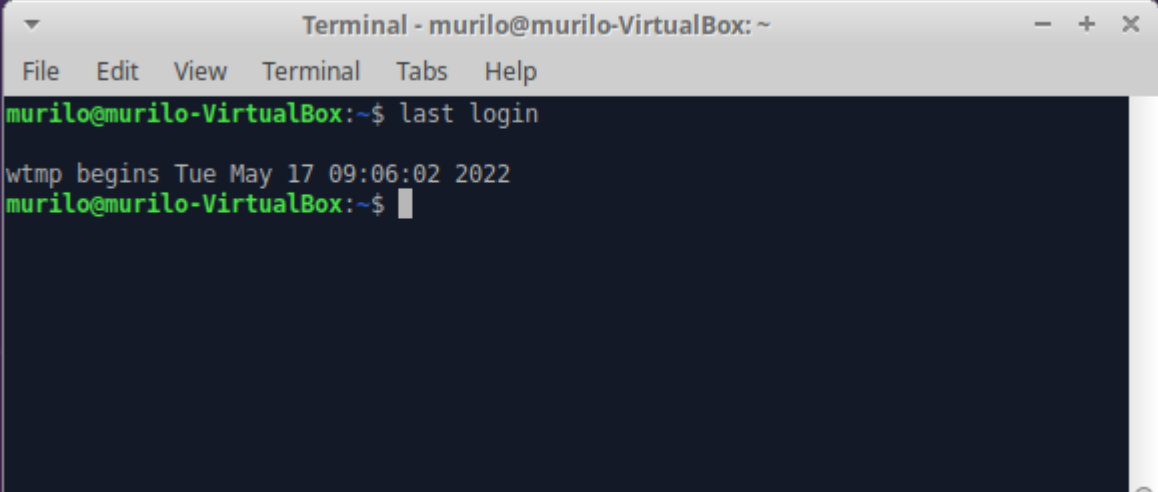
Uberlândia, Maio de 2022

Aluno: Murilo Rocioli - 11811EMT015

2. Utilizando o livro: "Linux: Comandos Básicos e Avançados"(2ª edição)de Vivas, Araújo, Pitangui e Assis, reproduza os comandos apresentados do capítulo 1 ao 10 e 14. Tire printscreen dos resultados dos comandos apresentados e produza um relatório, explicado e organizado,a ser submetido na plataforma TEAMS.
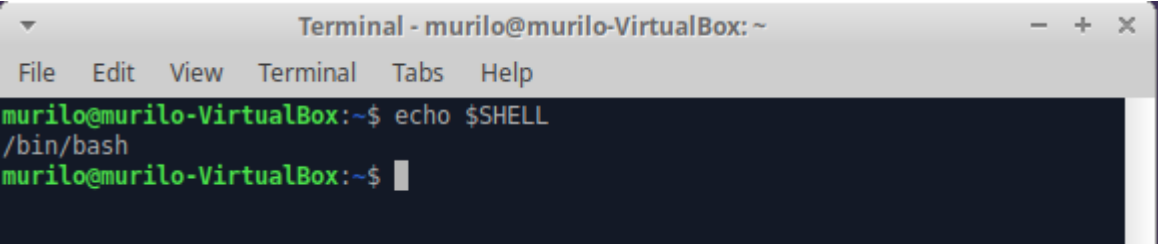
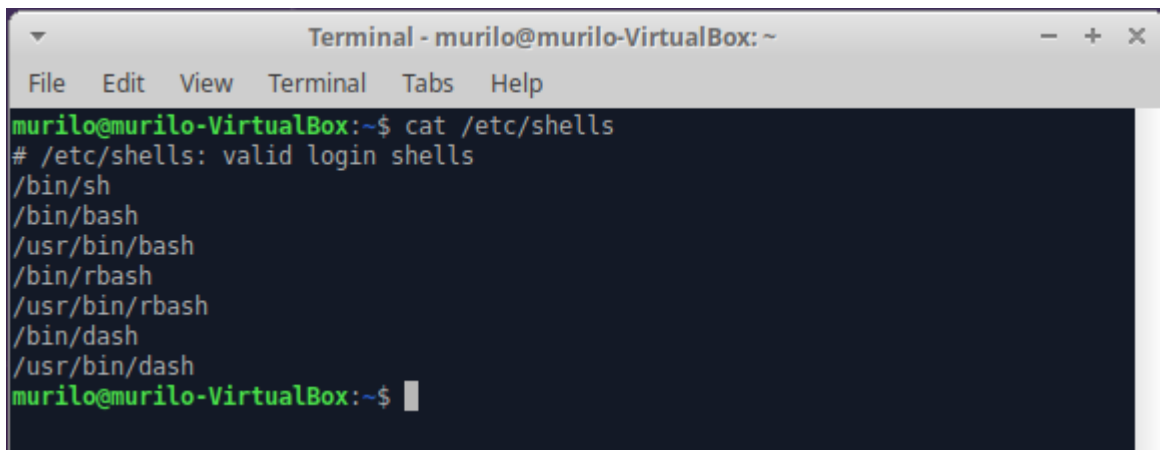## Capítulo 1

Listagem 1.2: Prompt de Login

Listagem 1.8: Shell Utilizado
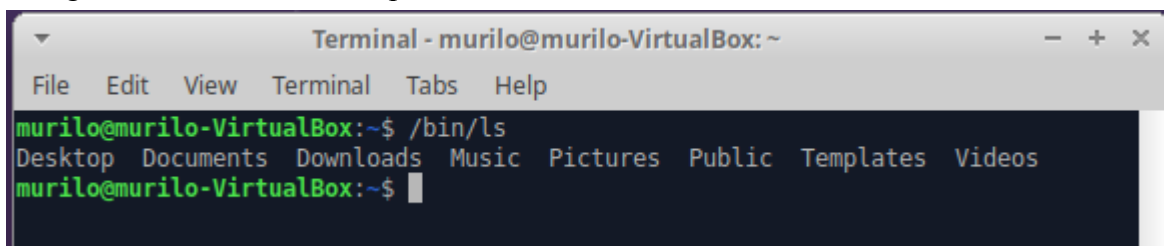
Listagem 1.9: Shells Instalados
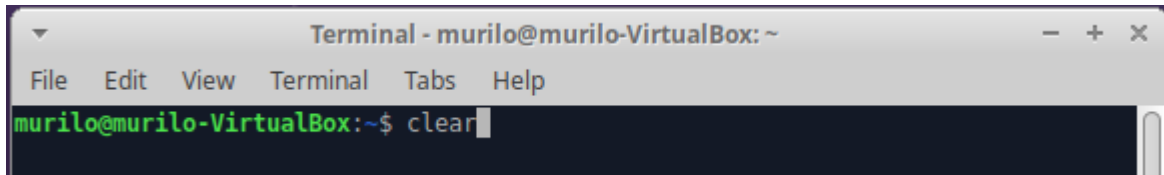
Listagem 1.10: Caminho Completo
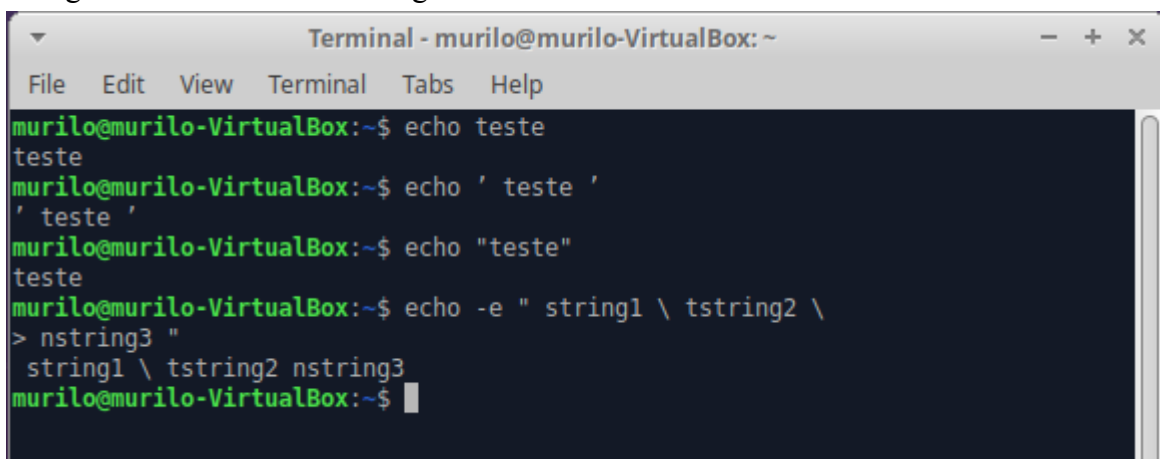
Listagem 1.11: Limpando a Tela

Listagem 1.12: Exibindo Mensagens no Terminal

Listagem 1.13: Histórico

Listagem 1.14: Comando history

Listagem 1.15: Executar um determinado comando do history

Listagem 1.16: Exemplo de busca no history
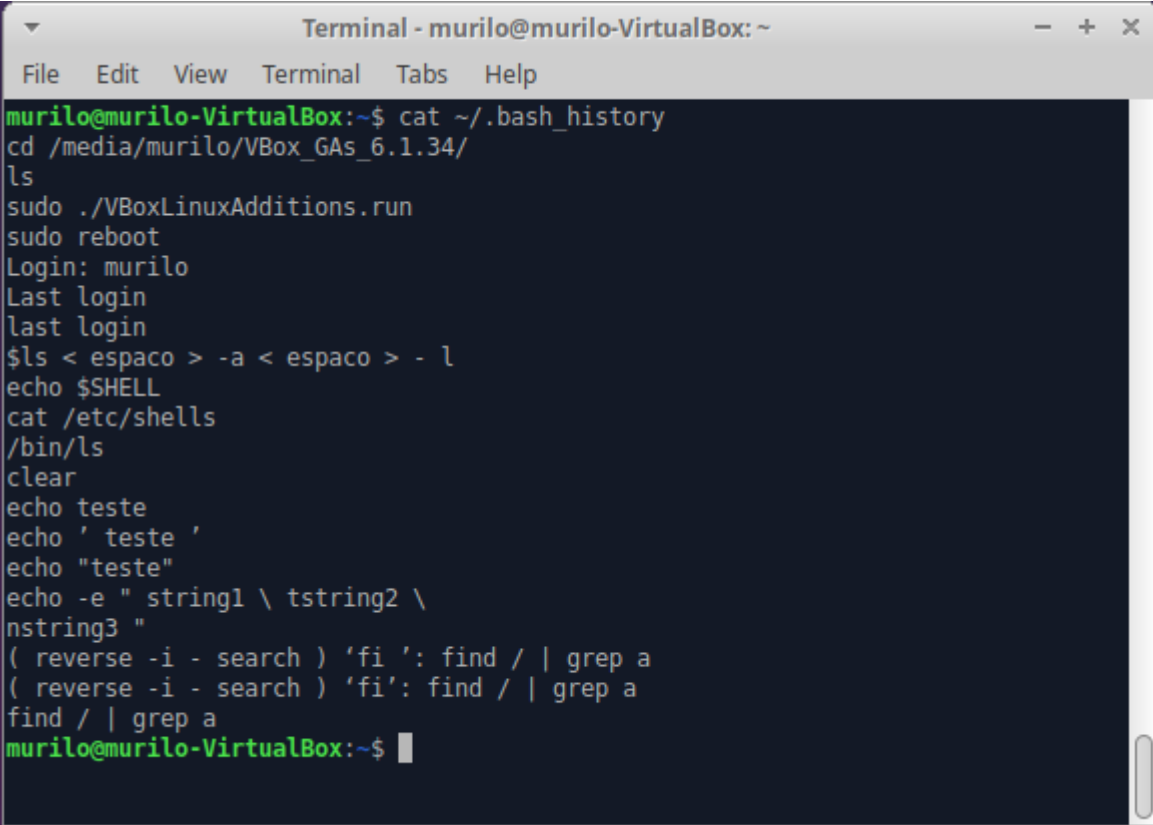
Listagem 1.17: Limpar o histórico
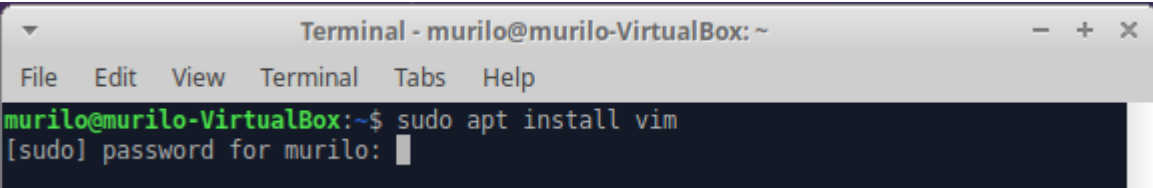
Capítulo 2

Listagem 1.21: Arquivo contendo o histórico de comandos
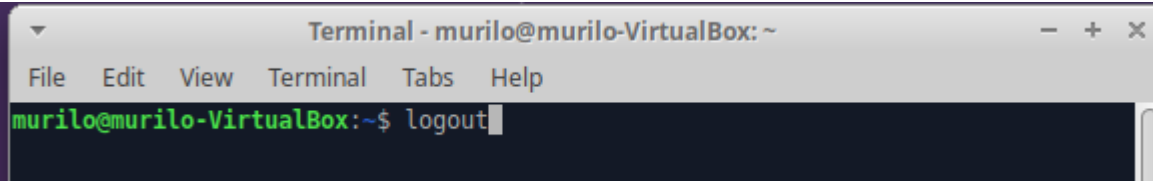
```
Terminal - murilo@murilo-VirtualBox: ~                    —  +  ×

File   Edit   View   Terminal   Tabs   Help

murilo@murilo-VirtualBox:~$ cat ~/.bash_history
cd /media/murilo/VBox_GAs_6.1.34/
ls
sudo ./VBoxLinuxAdditions.run
sudo reboot
Login: murilo
Last login
last login
$ls < espaco > -a < espaco > - l
echo $SHELL
cat /etc/shells
/bin/ls
clear
echo teste
echo ' teste '
echo "teste"
echo -e " string1 \ tstring2 \
nstring3 "
( reverse -i - search ) 'fi ': find / | grep a
( reverse -i - search ) 'fi': find / | grep a
find / | grep a
murilo@murilo-VirtualBox:~$
```

Listagem 1.23: Usuário Root no Ubuntu

```
Terminal - murilo@murilo-VirtualBox: ~                    —  +  ×

File   Edit   View   Terminal   Tabs   Help

murilo@murilo-VirtualBox:~$ sudo apt install vim
[sudo] password for murilo:
```

Listagem 2.1: Comando logout

```
Terminal - murilo@murilo-VirtualBox: ~                    —  +  ×

File   Edit   View   Terminal   Tabs   Help

murilo@murilo-VirtualBox:~$ logout
```

Listagem 2.2: Comando exit

```
Terminal - murilo@murilo-VirtualBox: ~                    —  +  ×

File   Edit   View   Terminal   Tabs   Help

murilo@murilo-VirtualBox:~$ exit
```

Listagem 2.3: Desligando Imediatamente com shutdown
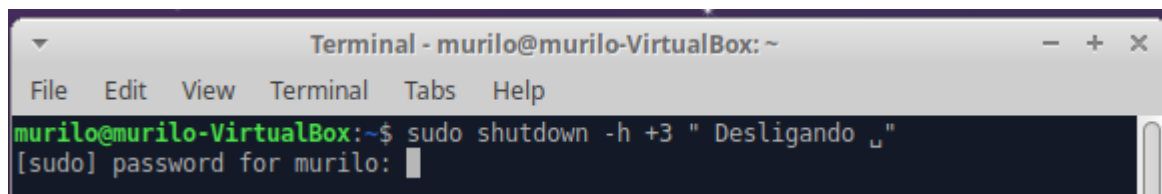
```
Terminal - murilo@murilo-VirtualBox: ~
File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ shutdown -h now
```

Listagem 2.4: Desligando Imediatamente com poweroff
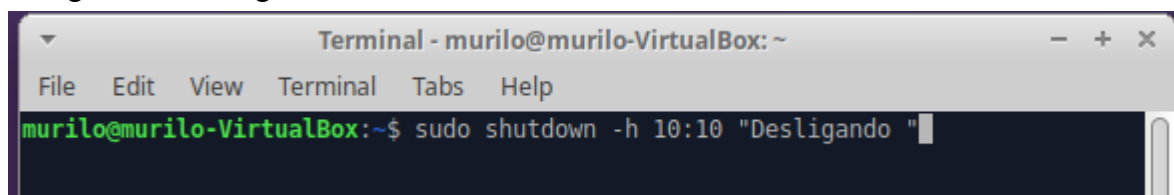
```
Terminal - murilo@murilo-VirtualBox: ~
File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ poweroff
```

Listagem 2.5: Desligando Após Determinado Intervalo de Tempo

```
Terminal - murilo@murilo-VirtualBox: ~
File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ sudo shutdown -h +3 " Desligando  "
[sudo] password for murilo:
```

Listagem 2.7: Desligando Imediatamente

```
Terminal - murilo@murilo-VirtualBox: ~
File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ sudo shutdown -h 10:10 "Desligando "
```

Listagem 2.8: Desligando em 5 minutos

```
Terminal - murilo@murilo-VirtualBox: ~
File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ sudo shutdown -h +5 "Desligando em 5 minutos "
```
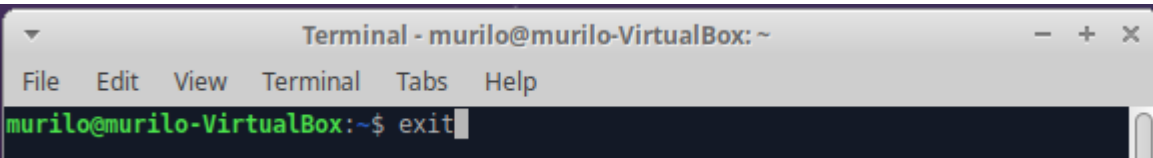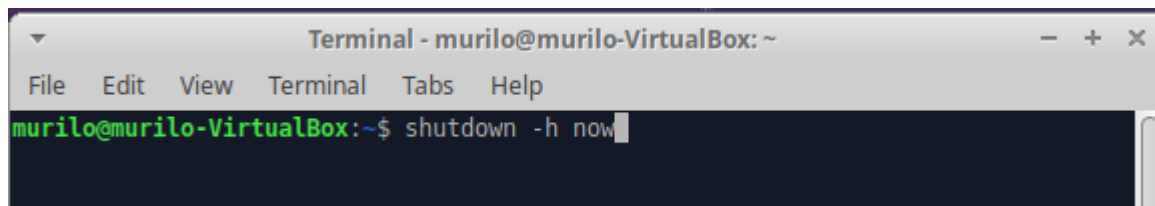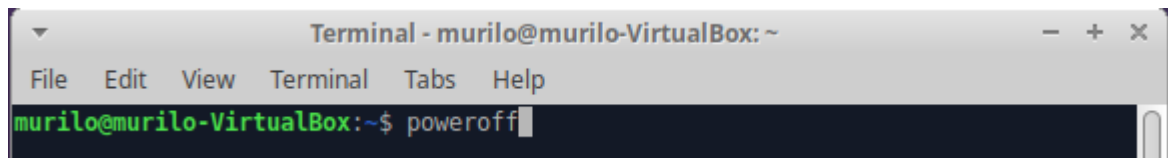
Listagem 2.9: Cancelando Shutdown

```
Terminal - murilo@murilo-VirtualBox: ~
File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ sudo shutdown -c
[sudo] password for murilo:
```

Listagem 2.10: Reinicializando com reboot
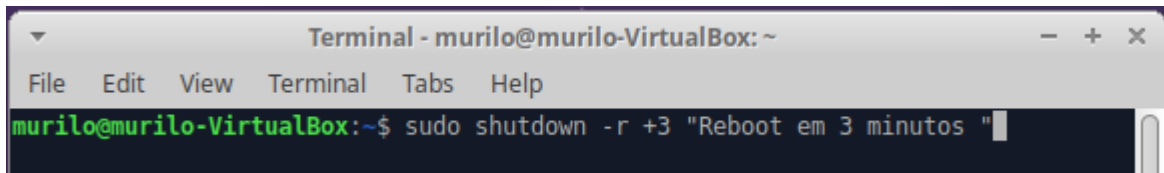
Listagem 2.11: Reinicializando com shutdown
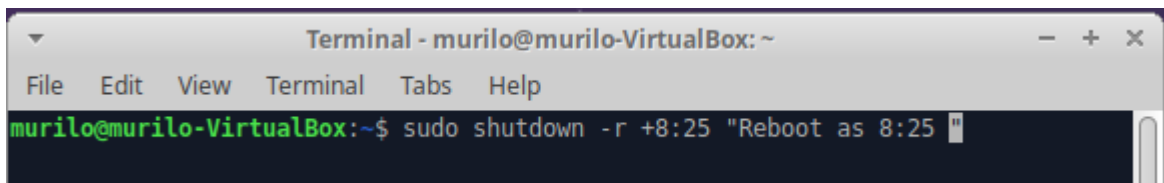
Listagem 2.12: Reinicializando a Máquina após Determinado Intervalo de Tempo
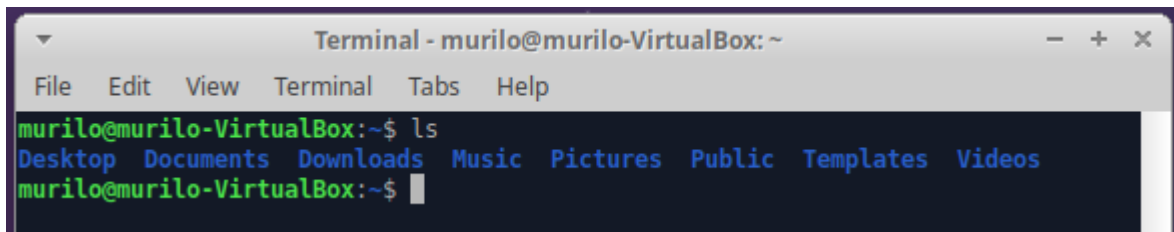
Listagem 2.13: Reinicializando a Máquina em Horário Específico
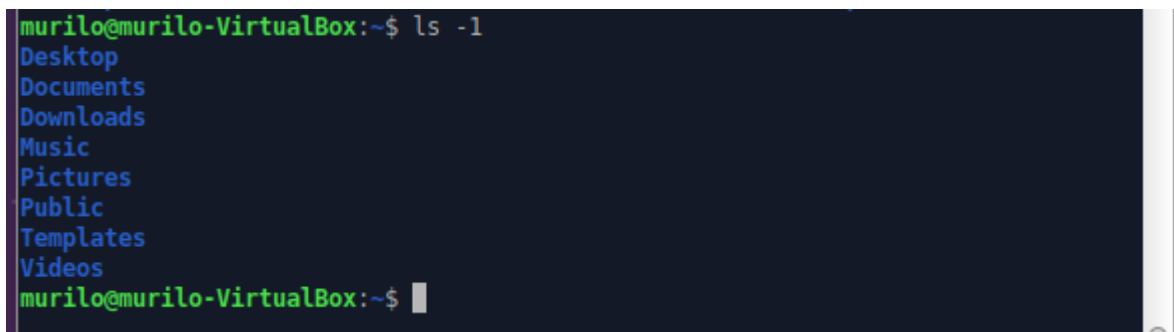
Capítulo 3

Listagem 3.1: Listando o Conteúdo de um Diretório

```
Terminal - murilo@murilo-VirtualBox: ~                    — + ×
File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ ls
Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos
murilo@murilo-VirtualBox:~$
```

Listagem 3.2: Uma Entrada por Linha
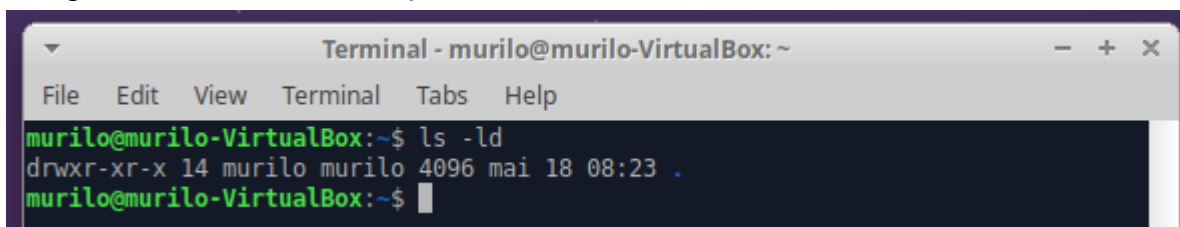
```
murilo@murilo-VirtualBox:~$ ls -1
Desktop
Documents
Downloads
Music
Pictures
Public
Templates
Videos
murilo@murilo-VirtualBox:~$
```

Listagem 3.3: Comando ls no formato longo

```
Terminal - murilo@murilo-VirtualBox: ~                    — + ×
File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ ls -l
total 32
drwxr-xr-x 2 murilo murilo 4096 mai 17 09:06 Desktop
drwxr-xr-x 2 murilo murilo 4096 mai 17 09:06 Documents
drwxr-xr-x 2 murilo murilo 4096 mai 17 09:06 Downloads
drwxr-xr-x 2 murilo murilo 4096 mai 17 09:06 Music
drwxr-xr-x 2 murilo murilo 4096 mai 17 09:06 Pictures
drwxr-xr-x 2 murilo murilo 4096 mai 17 09:06 Public
drwxr-xr-x 2 murilo murilo 4096 mai 17 09:06 Templates
drwxr-xr-x 2 murilo murilo 4096 mai 17 09:06 Videos
murilo@murilo-VirtualBox:~$
```
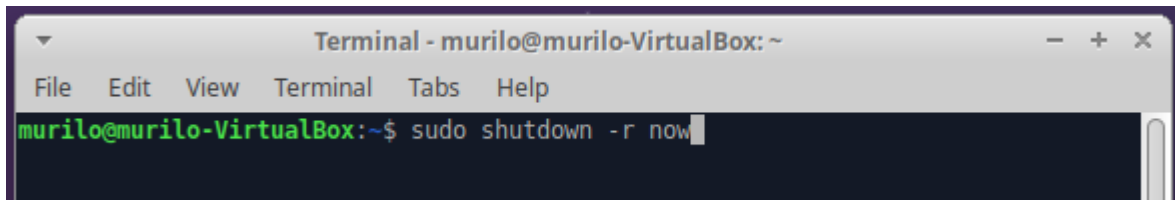
Listagem 3.7: Obtendo informações sobre diretórios

```
Terminal - murilo@murilo-VirtualBox: ~                    — + ×
File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ ls -ld
drwxr-xr-x 14 murilo murilo 4096 mai 18 08:23 .
murilo@murilo-VirtualBox:~$
```

Listagem 3.8: Listando Todos os Arquivos Inclusive os Ocultos

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

Listagem 3.9: Listando Apenas os Arquivos Ocultos

```
                Terminal - murilo@murilo-VirtualBox: ~              _  + ✕
 File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ ls -ld .?*
drwxr-xr-x  3 root    root   4096 mai 17 08:57 ..
-rw-------  1 murilo murilo  553 mai 18 08:27 .bash_history
-rw-r--r--  1 murilo murilo  220 mai 17 08:57 .bash_logout
-rw-r--r--  1 murilo murilo 3771 mai 17 08:57 .bashrc
drwxrwxr-x  9 murilo murilo 4096 mai 18 08:22 .cache
drwxr-xr-x 11 murilo murilo 4096 mai 17 09:07 .config
drwx------  3 murilo murilo 4096 mai 17 09:06 .gnupg
-rw-------  1 murilo murilo    0 mai 17 09:06 .ICEauthority
drwxrwxr-x  3 murilo murilo 4096 mai 17 09:06 .local
-rw-r--r--  1 murilo murilo  807 mai 17 08:57 .profile
-rw-r--r--  1 murilo murilo    0 mai 17 09:12 .sudo_as_admin_successful
-rw-r-----  1 murilo murilo    4 mai 18 08:22 .vboxclient-clipboard.pid
-rw-r-----  1 murilo murilo    4 mai 18 08:22 .vboxclient-display-svga-x11.pid
-rw-r-----  1 murilo murilo    4 mai 18 08:22 .vboxclient-draganddrop.pid
-rw-r-----  1 murilo murilo    4 mai 18 08:22 .vboxclient-seamless.pid
-rw-------  1 murilo murilo   62 mai 18 08:22 .Xauthority
-rw-r--r--  1 murilo murilo 1600 mai 17 08:57 .Xdefaults
-rw-r--r--  1 murilo murilo   14 mai 17 08:57 .xscreensaver
-rw-------  1 murilo murilo 6356 mai 18 08:34 .xsession-errors
-rw-------  1 murilo murilo 6596 mai 18 08:22 .xsession-errors.old
murilo@murilo-VirtualBox:~$
```

Listagem 3.10: Classificando Arquivos e Diretórios
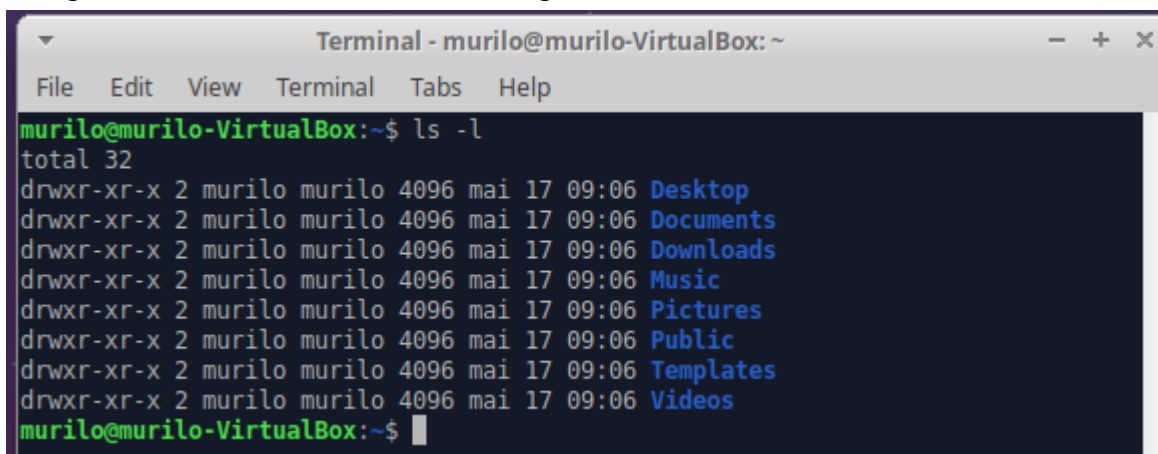
```
                Terminal - murilo@murilo-VirtualBox: ~              _  + ✕
 File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ ls -F
Desktop/     Downloads/  Pictures/   Templates/
Documents/   Music/      Public/     Videos/
murilo@murilo-VirtualBox:~$
```
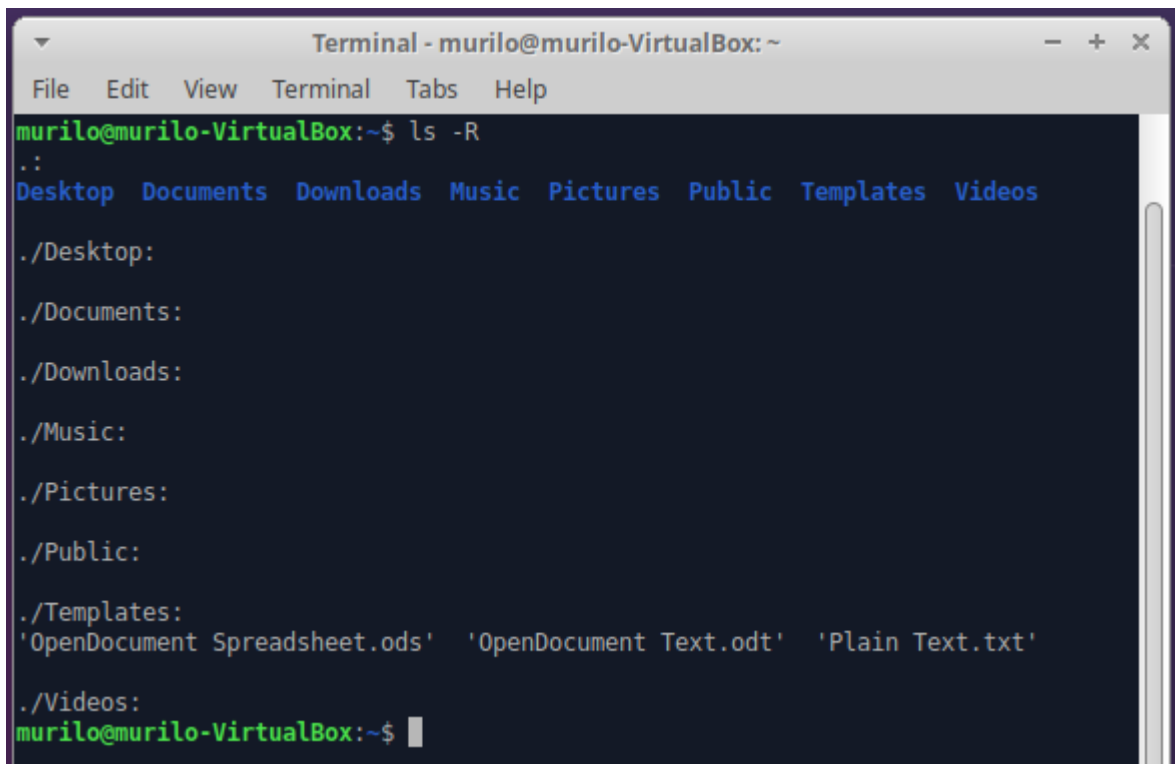
Listagem 3.11: Tamanho em Blocos

Listagem 3.13: Combinando Opções do Comando ls

Listagem 3.14: Visualizando Informações sobre o Diretório

Listagem 3.15: Listando Recursivamente
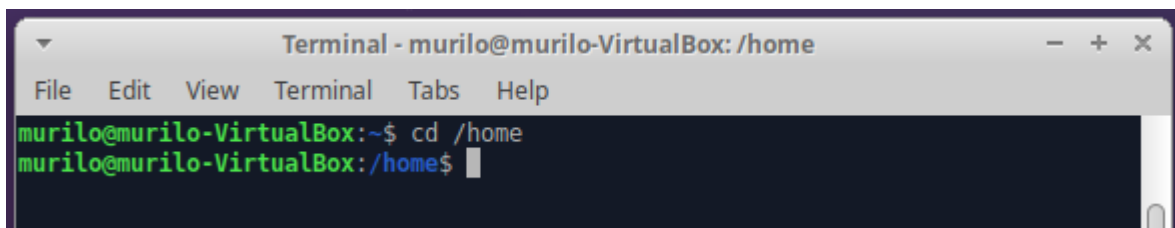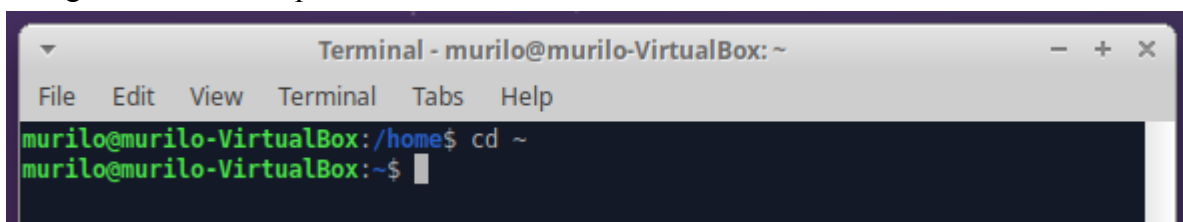
Listagem 3.16: Comando cd
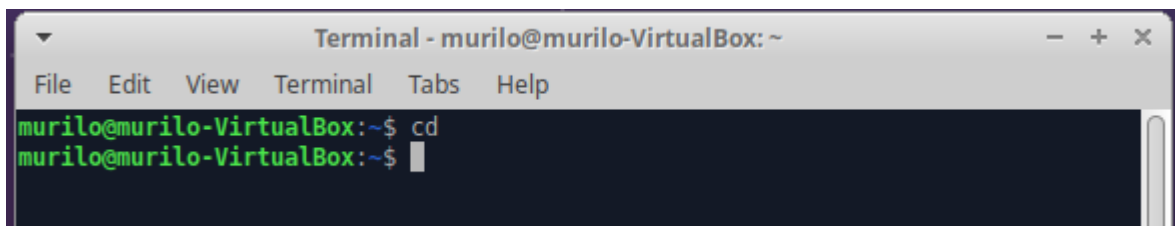
Listagem 3.17: Atalho para o Diretório Raiz do Usuário

Listagem 3.19: Comando cd Sem Opções
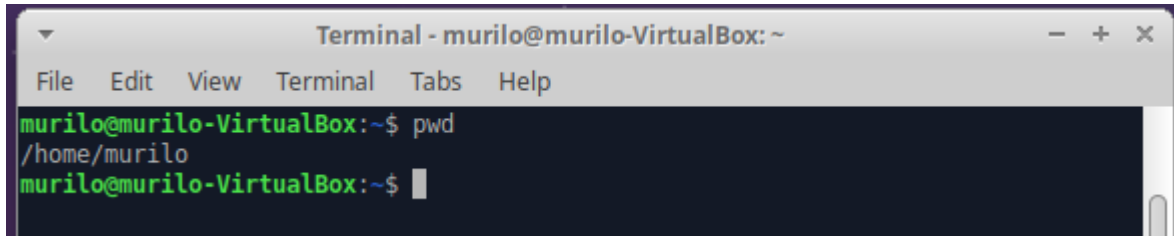
Listagem 3.20: Retornando ao Diretório do Usuário

Listagem 3.21: Comando pwd
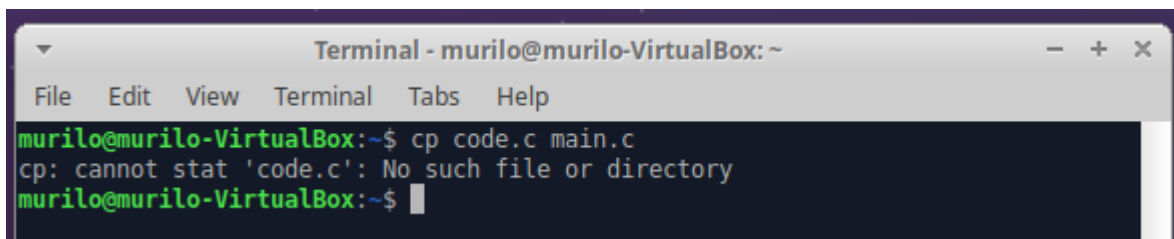
Listagem 3.24: Copiando Arquivo para Diretório

Listagem 3.27: Copiando um Arquivo em Outro

Listagem 3.28: Copiando com a Opção -i
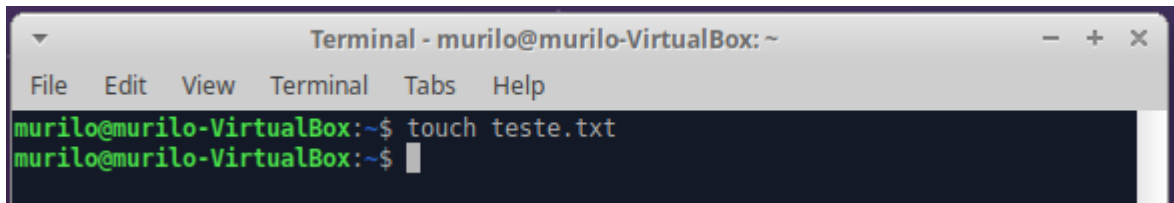
Listagem 3.30: Renomeando Arquivos com rename

Listagem 3.31: Criando Arquivos com touch
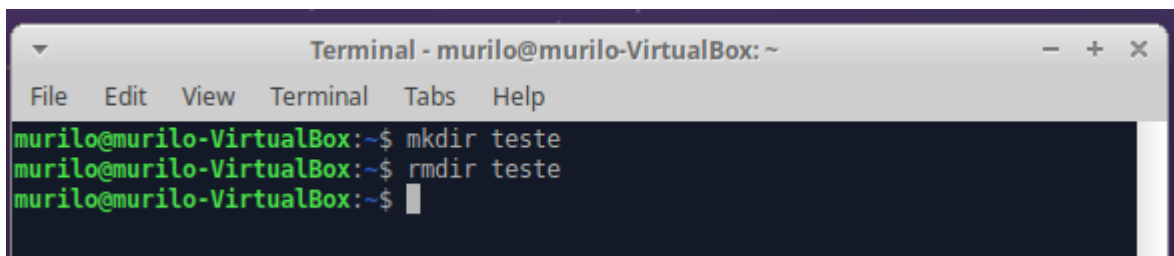
Listagem 3.33: Apagando um Arquivo
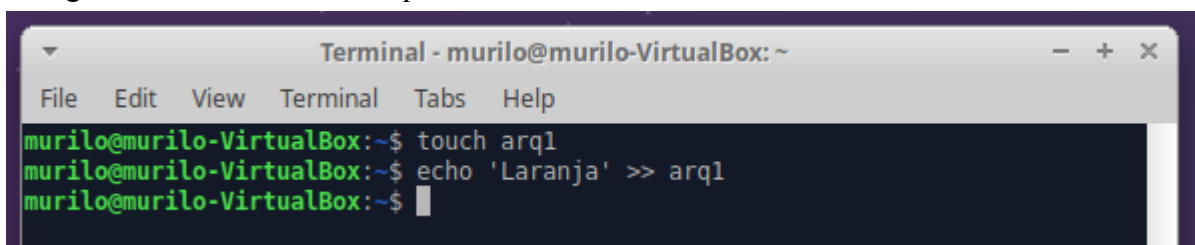
Listagem 3.36: Apagando Diretório com rmdir
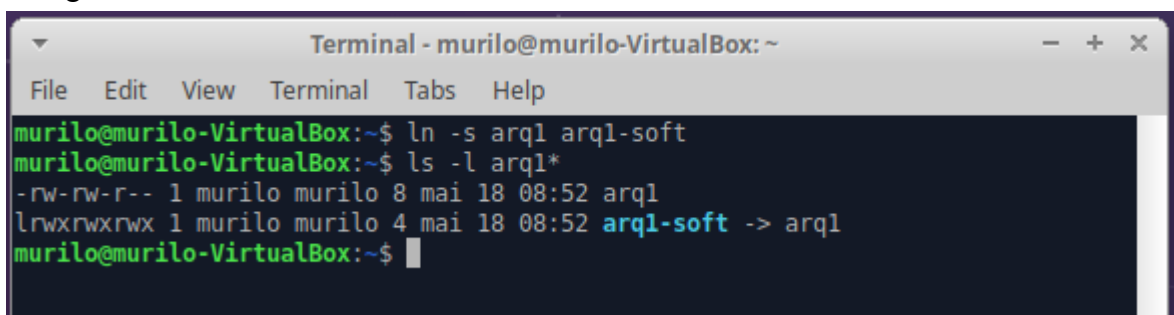
Listagem 3.42: Criando um Arquivo

Listagem 3.43: Criando um Link Simbólico

Listagem 3.44: Verificando o Conteúdo do Arquivo

```
murilo@murilo-VirtualBox:~$ cat arq1-soft
Laranja
murilo@murilo-VirtualBox:~$
```

Listagem 3.45: Movendo o Arquivo
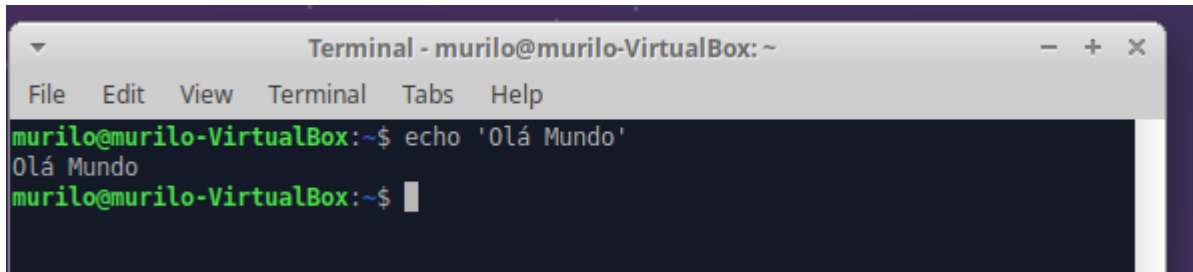
```
murilo@murilo-VirtualBox:~$ mv arq1 arq2
murilo@murilo-VirtualBox:~$ cat arq1-soft
cat: arq1-soft: No such file or directory
murilo@murilo-VirtualBox:~$
```

Listagem 3.46: Visualizando os Links

```
murilo@murilo-VirtualBox:~$ ls -l arq1-soft
lrwxrwxrwx 1 murilo murilo 4 mai 18 08:52 arq1-soft -> arq1
murilo@murilo-VirtualBox:~$
```
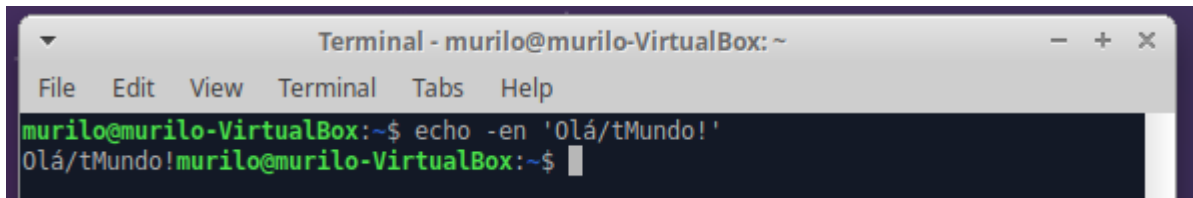
Capítulo 4

Listagem 4.1: Comando echo
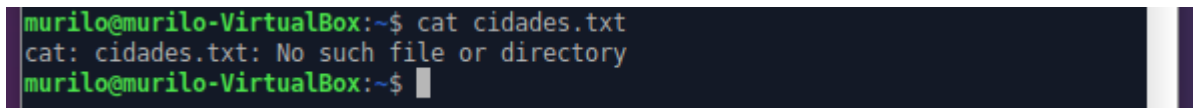
Listagem 4.2: Comando echo
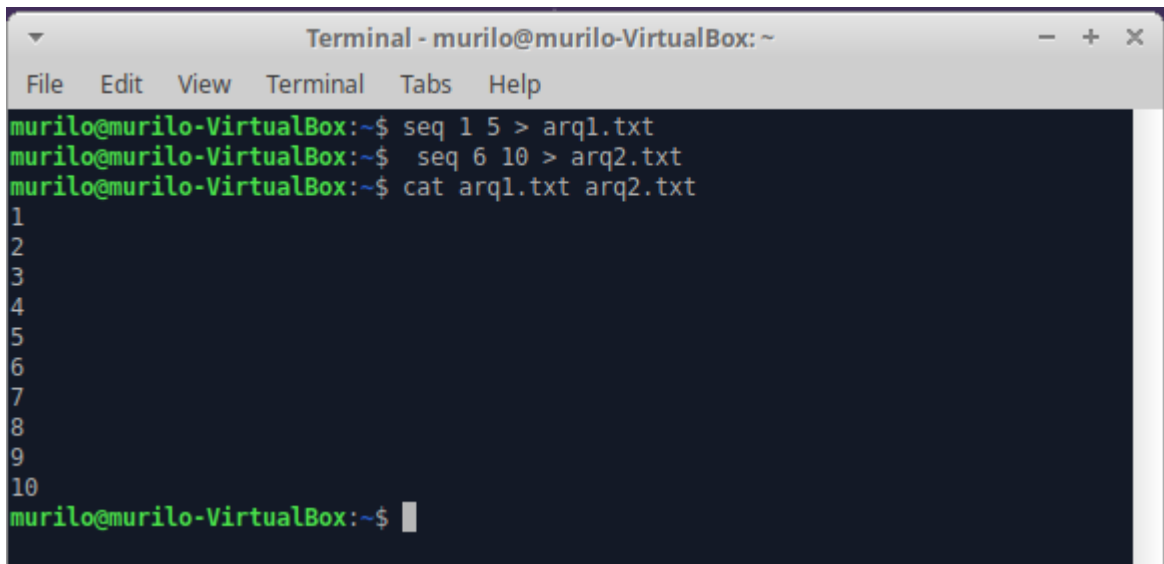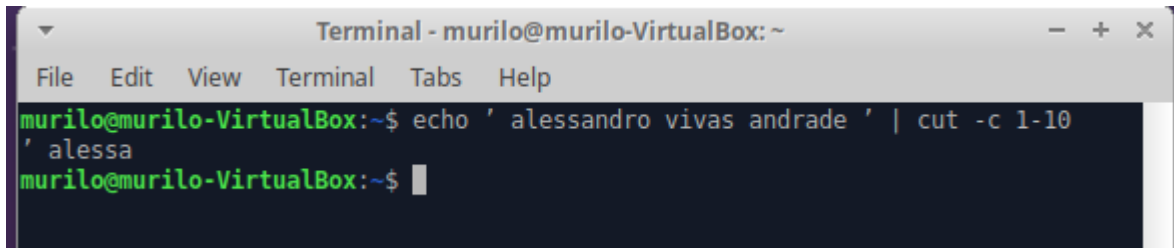
Listagem 4.3: Comando cat

Listagem 4.4: Comando cat com dois arquivos
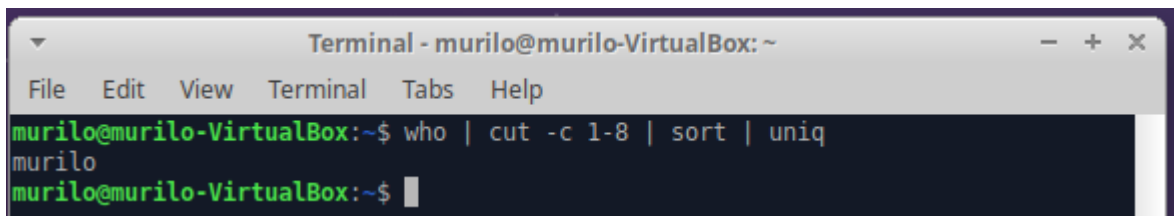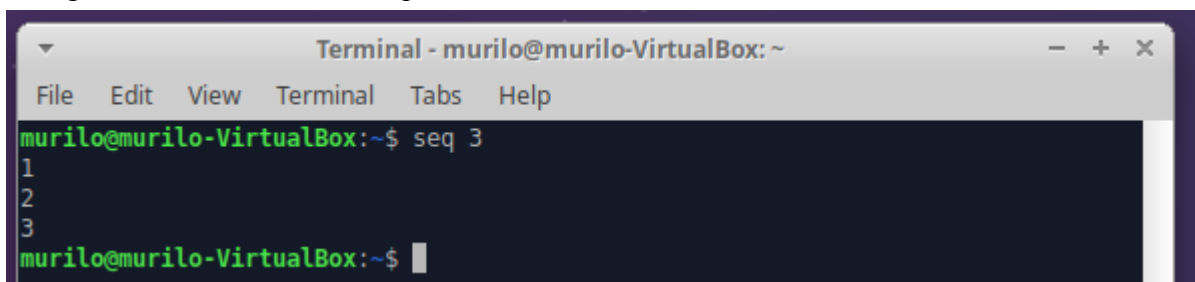
Listagem 4.5: Comando cut

Listagem 4.6: Usando o comando cut para listar os usuários logados
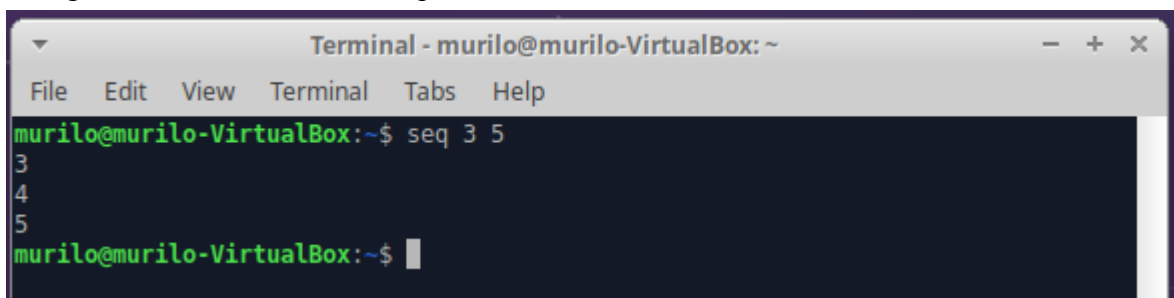
Listagem 4.9: Gerando uma sequência de números
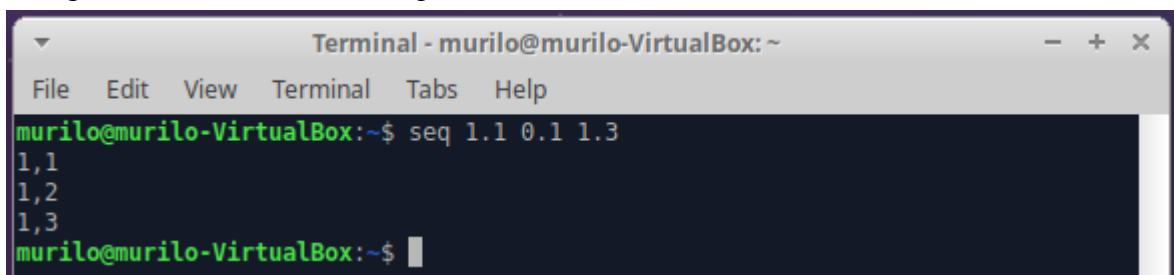
Listagem 4.10: Gerando uma sequência de números

Listagem 4.11: Gerando uma sequência de números
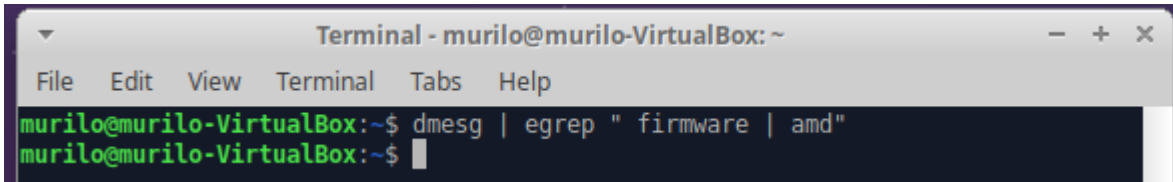
Listagem 4.20: Substituir chaves por parênteses
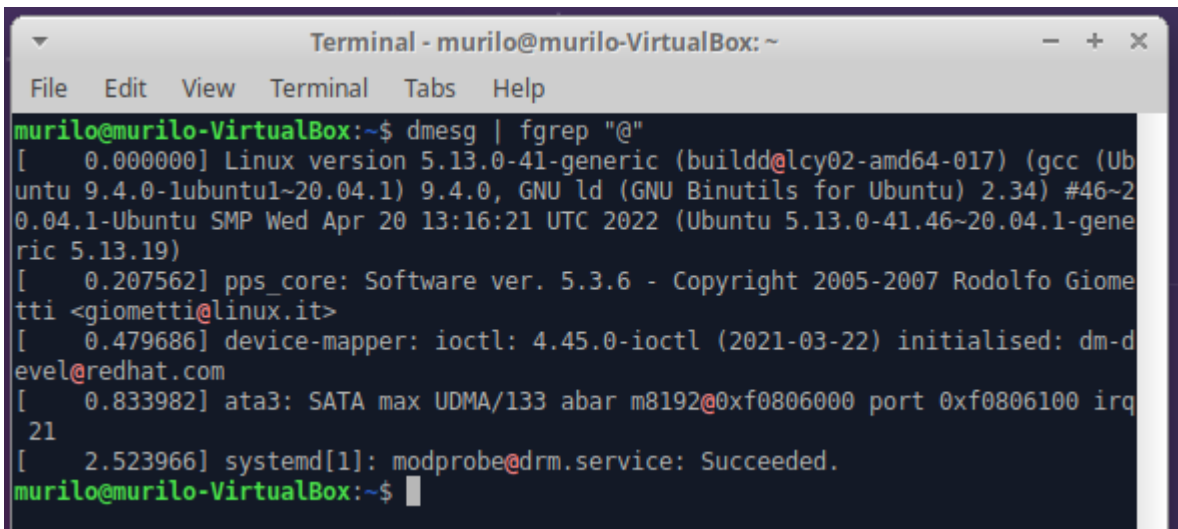
```
murilo@murilo-VirtualBox:~$ echo 'a{1}, b{2}' | tr '{}' '()'
a(1), b(2)
murilo@murilo-VirtualBox:~$
```

Listagem 4.32: Filtrando com egrep
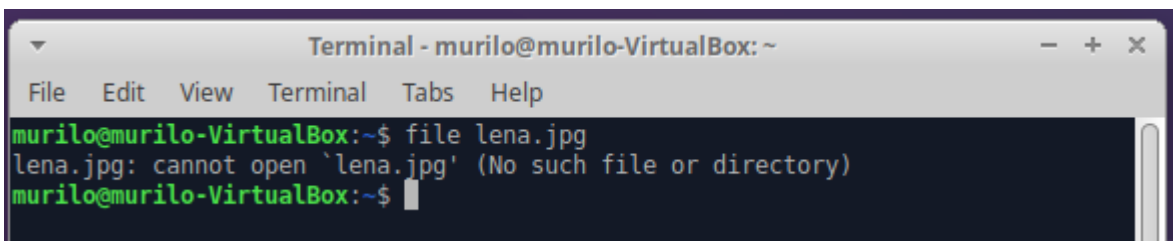
```
▽              Terminal - murilo@murilo-VirtualBox: ~              −  +  ×

File   Edit   View   Terminal   Tabs   Help

murilo@murilo-VirtualBox:~$ dmesg | egrep " firmware | amd"
murilo@murilo-VirtualBox:~$
```

Listagem 4.33: Filtrando com fgrep
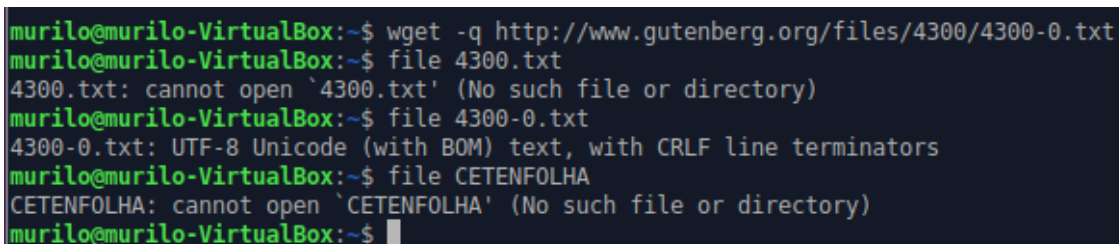
```
▽              Terminal - murilo@murilo-VirtualBox: ~              −  +  ×

File   Edit   View   Terminal   Tabs   Help

murilo@murilo-VirtualBox:~$ dmesg | fgrep "@"
[    0.000000] Linux version 5.13.0-41-generic (buildd@lcy02-amd64-017) (gcc (Ub
untu 9.4.0-1ubuntu1~20.04.1) 9.4.0, GNU ld (GNU Binutils for Ubuntu) 2.34) #46~2
0.04.1-Ubuntu SMP Wed Apr 20 13:16:21 UTC 2022 (Ubuntu 5.13.0-41.46~20.04.1-gene
ric 5.13.19)
[    0.207562] pps_core: Software ver. 5.3.6 - Copyright 2005-2007 Rodolfo Giome
tti <giometti@linux.it>
[    0.479686] device-mapper: ioctl: 4.45.0-ioctl (2021-03-22) initialised: dm-d
evel@redhat.com
[    0.833982] ata3: SATA max UDMA/133 abar m8192@0xf0806000 port 0xf0806100 irq
 21
[    2.523966] systemd[1]: modprobe@drm.service: Succeeded.
murilo@murilo-VirtualBox:~$
```

Listagem 4.38: Determinando o tipo do arquivo lena.jpg
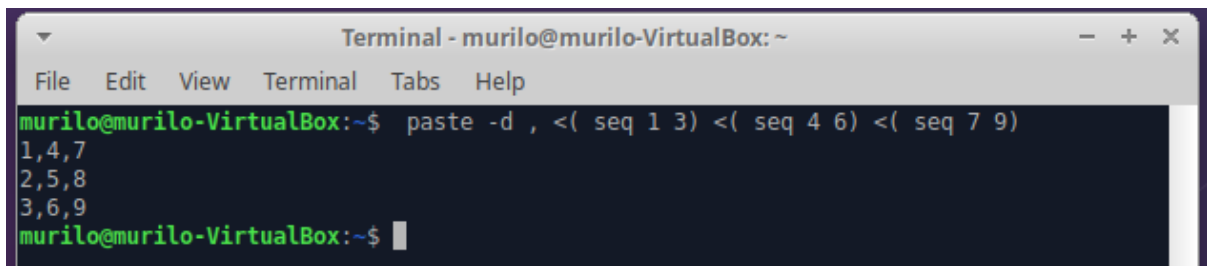
```
▽              Terminal - murilo@murilo-VirtualBox: ~              −  +  ×

File   Edit   View   Terminal   Tabs   Help

murilo@murilo-VirtualBox:~$ file lena.jpg
lena.jpg: cannot open `lena.jpg' (No such file or directory)
murilo@murilo-VirtualBox:~$
```
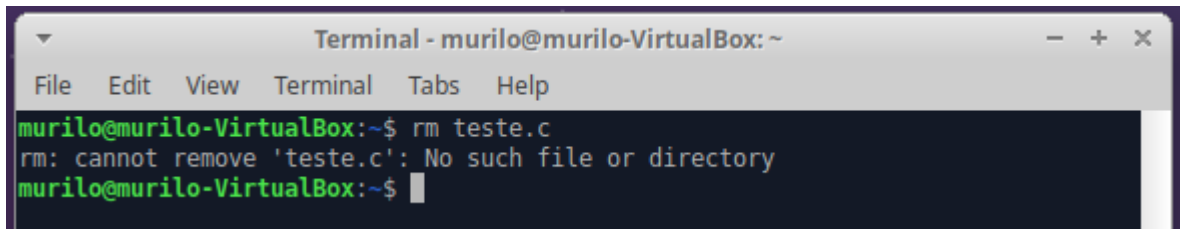
Listagem 4.39: Determinando o tipo de um arquivo .txt
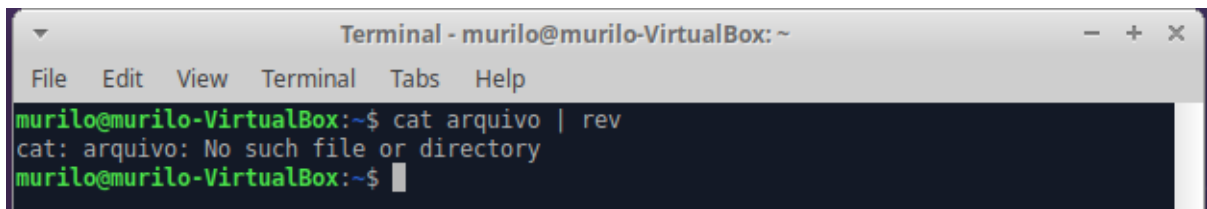
```
murilo@murilo-VirtualBox:~$ wget -q http://www.gutenberg.org/files/4300/4300-0.txt
murilo@murilo-VirtualBox:~$ file 4300.txt
4300.txt: cannot open `4300.txt' (No such file or directory)
murilo@murilo-VirtualBox:~$ file 4300-0.txt
4300-0.txt: UTF-8 Unicode (with BOM) text, with CRLF line terminators
murilo@murilo-VirtualBox:~$ file CETENFOLHA
CETENFOLHA: cannot open `CETENFOLHA' (No such file or directory)
murilo@murilo-VirtualBox:~$
```

Listagem 4.47: Combinando arquivos para formar um arquivo CSV
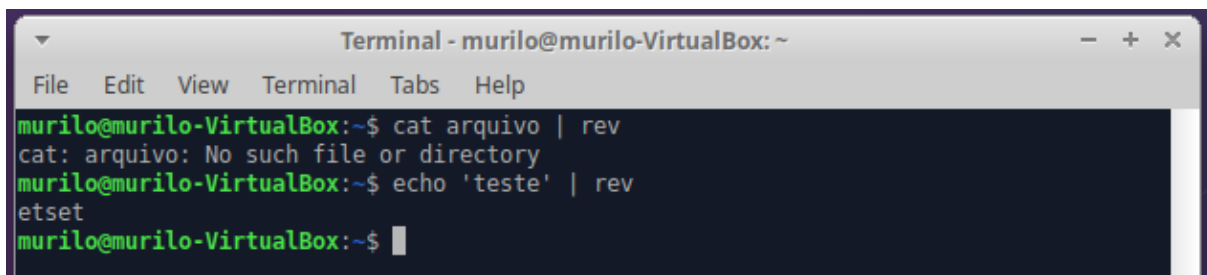
Listagem 4.48: Comando para Inverter os Caracteres - rev

Listagem 4.49: Invertendo Caracteres com rev
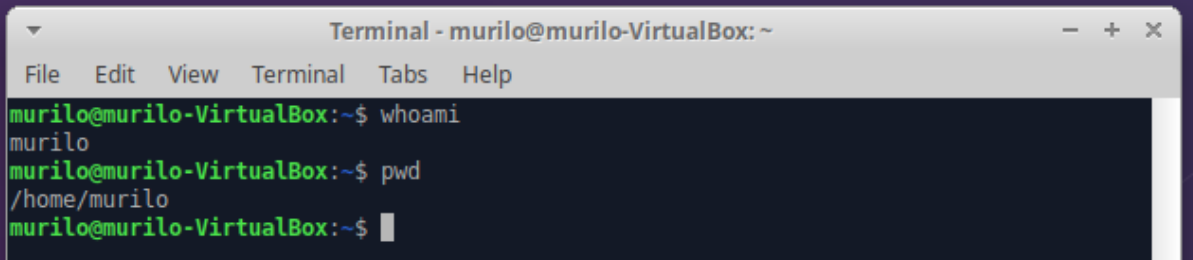
Capítulo 5

Listagem 5.1: Opções Múltiplas
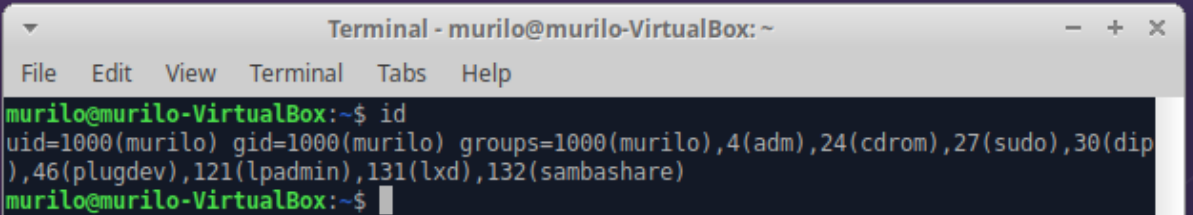
Listagem 5.2: Comando whoami e pwd

Listagem 5.4: Identificadores no Mac

Listagem 5.7: Usuários Logados

Listagem 5.8: Instalação do finger

Listagem 5.9: Comando finger

Listagem 5.11: Comando finger no Linux

Listagem 5.13: Comando free
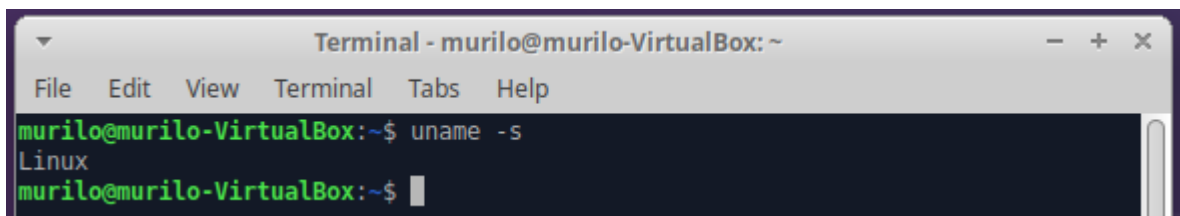
Listagem 5.14: Logar como Super Usuário

Listagem 5.15: Verificar Informações sobre o Linux

Listagem 5.17: Verificar sua Versão do kernel

Listagem 5.18: Verificando a Plataforma

Listagem 5.19: Verificar o Nome de sua Máquina

Listagem 5.20: Apresenta todas as informações sobre seu sistema operacional

Listagem 5.21: Tempo de Funcionamento

```
murilo@murilo-VirtualBox:~$ uptime
 09:55:37 up  1:32,  1 user,  load average: 0,06, 0,10, 0,09
murilo@murilo-VirtualBox:~$
```

Listagem 5.22: Versão de um comando

```
murilo@murilo-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.
murilo@murilo-VirtualBox:~$
```

Listagem 5.24: Variável PATH

```
murilo@murilo-VirtualBox:~$ echo $PATH
/usr/local/sbin:/usr/local/bin:/usr/sbin:/usr/bin:/sbin:/bin:/usr/games:/usr/loc
al/games:/snap/bin
murilo@murilo-VirtualBox:~$
```

Listagem 5.25: Comando timeout

```
                Terminal - murilo@murilo-VirtualBox: ~          _  + ×
 File   Edit   View   Terminal   Tabs   Help
murilo@murilo-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=50 time=52.0 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=2 ttl=50 time=55.1 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=3 ttl=50 time=55.3 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=4 ttl=50 time=54.8 ms
64 bytes from bulma.dr.ufu.br (200.19.145.55): icmp_seq=5 ttl=50 time=52.2 ms
murilo@murilo-VirtualBox:~$
```

Listagem 5.26: Comando w

```
murilo@murilo-VirtualBox:~$ w
 09:58:02 up  1:35,  1 user,  load average: 0,09, 0,08, 0,08
USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
murilo   tty7     :0               08:22    1:35m 22.59s  0.34s xfce4-session
murilo@murilo-VirtualBox:~$
```
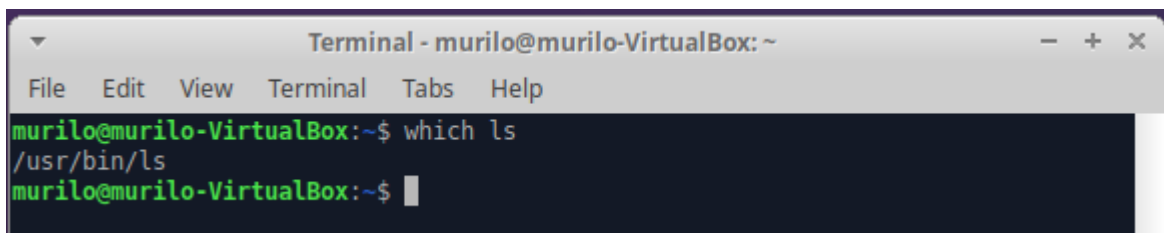
Listagem 5.27: Comando whereis

```
murilo@murilo-VirtualBox:~$ whereis gcc
gcc: /usr/lib/gcc /usr/share/gcc
murilo@murilo-VirtualBox:~$
```

Listagem 5.28: Comando locate

```
murilo@murilo-VirtualBox:~$ locate passwd
/etc/passwd
/etc/passwd-
/etc/pam.d/chpasswd
/etc/pam.d/passwd
/etc/security/opasswd
/usr/bin/gpasswd
/usr/bin/grub-mkpasswd-pbkdf2
/usr/bin/passwd
/usr/lib/libreoffice/share/config/soffice.cfg/svx/ui/passwd.ui
/usr/lib/tmpfiles.d/passwd.conf
/usr/lib/x86_64-linux-gnu/samba/libsmbpasswdparser.so.0
/usr/sbin/chgpasswd
/usr/sbin/chpasswd
/usr/sbin/update-passwd
/usr/share/base-passwd
/usr/share/base-passwd/group.master
/usr/share/base-passwd/passwd.master
/usr/share/bash-completion/completions/chpasswd
```
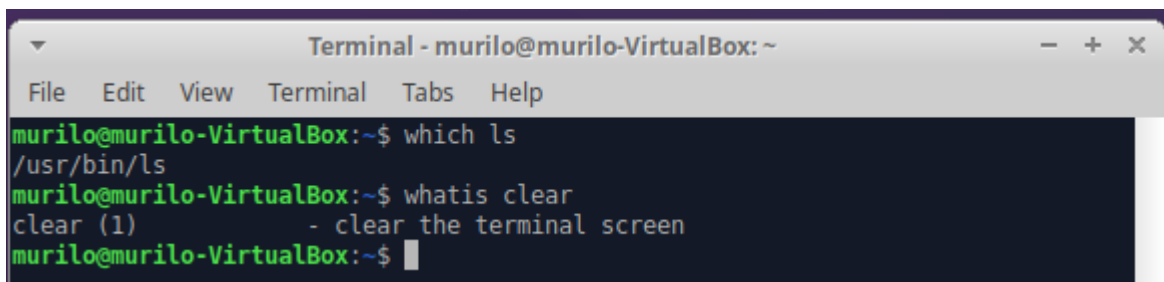
Listagem 5.29: Comando which

```
Terminal - murilo@murilo-VirtualBox: ~
File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ which ls
/usr/bin/ls
murilo@murilo-VirtualBox:~$
```
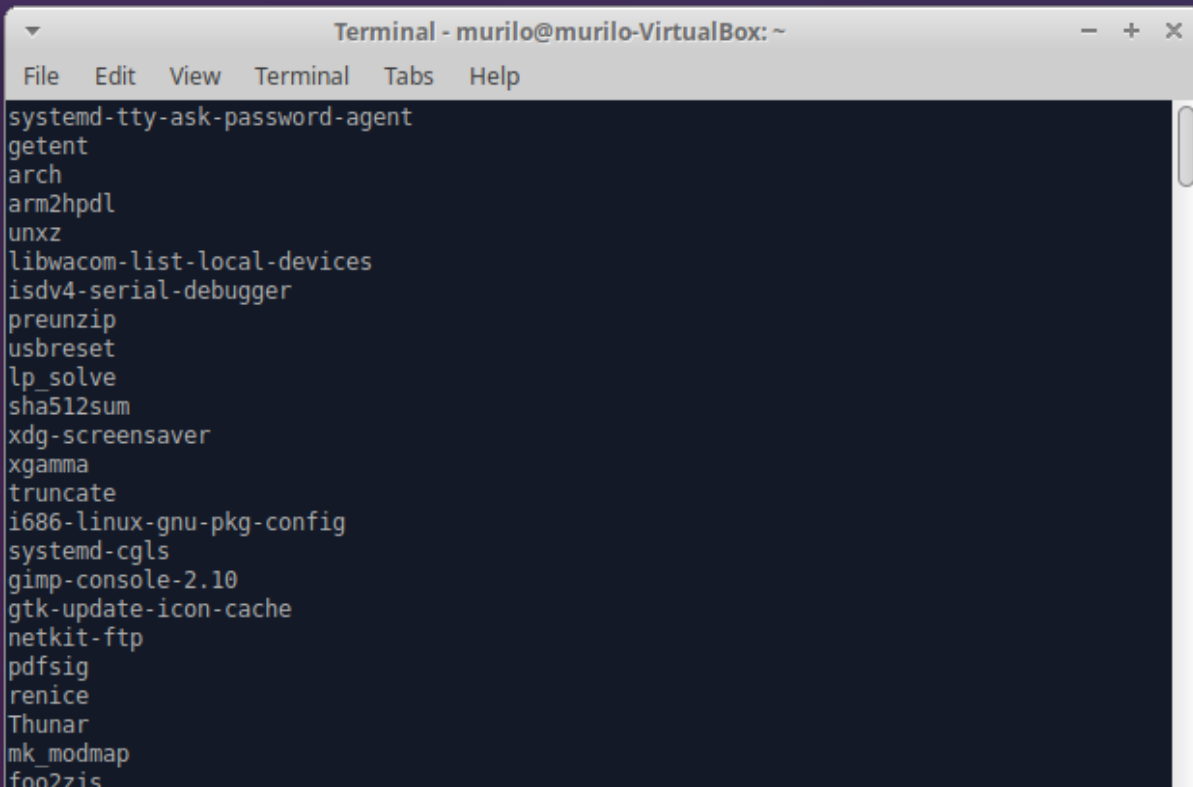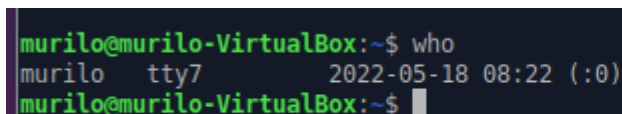
Listagem 5.30: Comando whatis

```
Terminal - murilo@murilo-VirtualBox: ~
File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ which ls
/usr/bin/ls
murilo@murilo-VirtualBox:~$ whatis clear
clear (1)            - clear the terminal screen
murilo@murilo-VirtualBox:~$
```

Listagem 5.31: Comando who

```
murilo@murilo-VirtualBox:~$ who
murilo   tty7         2022-05-18 08:22 (:0)
murilo@murilo-VirtualBox:~$
```

Listagem 5.32: Rodando Múltiplos Comandos

Listagem 5.34: Rodando Comando em Background

Capítulo 6

Listagem 6.1: Todos os Processos em Execução

Listagem 6.2: Todos os Processos em Execução de um Usuário Específico

Listagem 6.3: Processos que Mais Consomem CPU

Listagem 6.4: Processos que Mais Consomem CPU

Listagem 6.5: Obtendo Informações de um Processo Específico

Listagem 6.6: Obtendo a Lista de Processos em forma de Árvore

```
murilo@murilo-VirtualBox:~$ pstree
systemd─┬─ModemManager───2*[{ModemManager}]
        ├─NetworkManager───2*[{NetworkManager}]
        ├─3*[VBoxClient───VBoxClient───2*[{VBoxClient}]]
        ├─VBoxClient───VBoxClient───3*[{VBoxClient}]
        ├─VBoxService───8*[{VBoxService}]
        ├─accounts-daemon───2*[{accounts-daemon}]
        ├─acpid
        ├─agetty
        ├─avahi-daemon───avahi-daemon
        ├─blueman-tray───2*[{blueman-tray}]
        ├─colord───2*[{colord}]
        ├─cron
        ├─cups-browsed───2*[{cups-browsed}]
        ├─cupsd
        ├─dbus-daemon
        ├─gnome-keyring-d───3*[{gnome-keyring-d}]
        ├─irqbalance───{irqbalance}
        ├─2*[kerneloops]
        ├─lightdm─┬─Xorg───{Xorg}
        │         └─lightdm─┬─xfce4-session─┬─Thunar───2*[{Thunar}]
        │                                   ├─applet.py
```

Listagem 6.9: Comando kill

```
   ▼               Terminal - murilo@murilo-VirtualBox: ~              ─  +  ✕
 File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ kill -l
 1) SIGHUP        2) SIGINT        3) SIGQUIT       4) SIGILL        5) SIGTRAP
 6) SIGABRT       7) SIGBUS        8) SIGFPE        9) SIGKILL      10) SIGUSR1
11) SIGSEGV      12) SIGUSR2      13) SIGPIPE      14) SIGALRM      15) SIGTERM
16) SIGSTKFLT    17) SIGCHLD      18) SIGCONT      19) SIGSTOP      20) SIGTSTP
21) SIGTTIN      22) SIGTTOU      23) SIGURG       24) SIGXCPU      25) SIGXFSZ
26) SIGVTALRM    27) SIGPROF      28) SIGWINCH     29) SIGIO        30) SIGPWR
31) SIGSYS       34) SIGRTMIN     35) SIGRTMIN+1   36) SIGRTMIN+2   37) SIGRTMIN+3
38) SIGRTMIN+4   39) SIGRTMIN+5   40) SIGRTMIN+6   41) SIGRTMIN+7   42) SIGRTMIN+8
43) SIGRTMIN+9   44) SIGRTMIN+10  45) SIGRTMIN+11  46) SIGRTMIN+12  47) SIGRTMIN+13
48) SIGRTMIN+14  49) SIGRTMIN+15  50) SIGRTMAX-14  51) SIGRTMAX-13  52) SIGRTMAX-12
53) SIGRTMAX-11  54) SIGRTMAX-10  55) SIGRTMAX-9   56) SIGRTMAX-8   57) SIGRTMAX-7
58) SIGRTMAX-6   59) SIGRTMAX-5   60) SIGRTMAX-4   61) SIGRTMAX-3   62) SIGRTMAX-2
63) SIGRTMAX-1   64) SIGRTMAX
murilo@murilo-VirtualBox:~$ ▮
```

Listagem 6.10: Comando kill

```
murilo@murilo-VirtualBox:~$ ps -aef | grep paint
murilo      1355    1277  0 22:33 pts/0    00:00:00 grep --color=auto paint
murilo@murilo-VirtualBox:~$ ▮
```

Listagem 6.11: Matando o Processo Firefox

```
murilo@murilo-VirtualBox:~$ kill -9 12005
bash: kill: (12005) - No such process
murilo@murilo-VirtualBox:~$ ▮
```

Listagem 6.13: Controlando Processos

```
murilo@murilo-VirtualBox:~$ ps
    PID TTY          TIME CMD
   1277 pts/0    00:00:00 bash
   1358 pts/0    00:00:00 ps
murilo@murilo-VirtualBox:~$
```

Listagem 6.14: Controlando Processos

```
murilo@murilo-VirtualBox:~$ ps u
USER       PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
murilo    1277  0.0  0.4  10624  4780 pts/0    Ss   22:10   0:00 bash
murilo    1359  0.0  0.3  11500  3132 pts/0    R+   22:36   0:00 ps u
murilo@murilo-VirtualBox:~$
```

Listagem 6.15: Controlando Processos

```
murilo@murilo-VirtualBox:~$ top &
[1] 1360
murilo@murilo-VirtualBox:~$
```

Listagem 6.16: Controlando Processos

```
Terminal - murilo@murilo-VirtualBox:~                        –  +  ×
File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ jobs -l
[1]+  1360 Stopped (signal)        top
murilo@murilo-VirtualBox:~$
```

Listagem 6.22: Controlando Processos

```
murilo@murilo-VirtualBox:~$ ps aux
USER       PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
root         1  0.0  1.0 101540 10780 ?        Ss   22:08   0:01 /sbin/init sp
root         2  0.0  0.0      0     0 ?        S    22:08   0:00 [kthreadd]
root         3  0.0  0.0      0     0 ?        I<   22:08   0:00 [rcu_gp]
root         4  0.0  0.0      0     0 ?        I<   22:08   0:00 [rcu_par_gp]
root         6  0.0  0.0      0     0 ?        I<   22:08   0:00 [kworker/0:0H
root         9  0.0  0.0      0     0 ?        I<   22:08   0:00 [mm_percpu_wq
root        10  0.0  0.0      0     0 ?        S    22:08   0:00 [rcu_tasks_ru
root        11  0.0  0.0      0     0 ?        S    22:08   0:00 [rcu_tasks_tr
root        12  0.0  0.0      0     0 ?        S    22:08   0:00 [ksoftirqd/0]
root        13  0.0  0.0      0     0 ?        I    22:08   0:00 [rcu_sched]
root        14  0.0  0.0      0     0 ?        S    22:08   0:00 [migration/0]
root        15  0.0  0.0      0     0 ?        S    22:08   0:00 [idle_inject/
root        16  0.0  0.0      0     0 ?        S    22:08   0:00 [cpuhp/0]
root        17  0.0  0.0      0     0 ?        S    22:08   0:00 [cpuhp/1]
root        18  0.0  0.0      0     0 ?        S    22:08   0:00 [idle_inject/
root        19  0.0  0.0      0     0 ?        S    22:08   0:00 [migration/1]
root        20  0.0  0.0      0     0 ?        S    22:08   0:00 [ksoftirqd/1]
root        22  0.0  0.0      0     0 ?        I<   22:08   0:00 [kworker/1:0H
root        23  0.0  0.0      0     0 ?        S    22:08   0:00 [kdevtmpfs]
root        24  0.0  0.0      0     0 ?        I<   22:08   0:00 [netns]
```

Capítulo 7

Listagem 7.1: Listando o Proprietário e as Permissões dos Arquivos

```
Terminal - murilo@murilo-VirtualBox: ~                    −  +  ×
File  Edit  View  Terminal  Tabs  Help
murilo@murilo-VirtualBox:~$ ls -l
total 1596
-rw-rw-r-- 1 murilo murilo 1586336 mar  1  2021 4300-0.txt
lrwxrwxrwx 1 murilo murilo       4 mai 18 08:52 arq1-soft -> arq1
-rw-rw-r-- 1 murilo murilo      10 mai 18 09:23 arq1.txt
-rw-rw-r-- 1 murilo murilo       8 mai 18 08:52 arq2
-rw-rw-r-- 1 murilo murilo      11 mai 18 09:23 arq2.txt
drwxr-xr-x 2 murilo murilo    4096 mai 17 09:06 Desktop
drwxr-xr-x 2 murilo murilo    4096 mai 17 09:06 Documents
drwxr-xr-x 2 murilo murilo    4096 mai 17 09:06 Downloads
drwxr-xr-x 2 murilo murilo    4096 mai 17 09:06 Music
drwxr-xr-x 2 murilo murilo    4096 mai 17 09:06 Pictures
drwxr-xr-x 2 murilo murilo    4096 mai 17 09:06 Public
drwxr-xr-x 2 murilo murilo    4096 mai 17 09:06 Templates
-rw-rw-r-- 1 murilo murilo       0 mai 18 08:49 teste.txt
drwxr-xr-x 2 murilo murilo    4096 mai 17 09:06 Videos
murilo@murilo-VirtualBox:~$
```

Listagem 7.2: Criando arquivo cidadex.txt

```
murilo@murilo-VirtualBox:~$ touch arquivo.txt
murilo@murilo-VirtualBox:~$
```

Listagem 7.3: Criando arquivo cidadex.txt
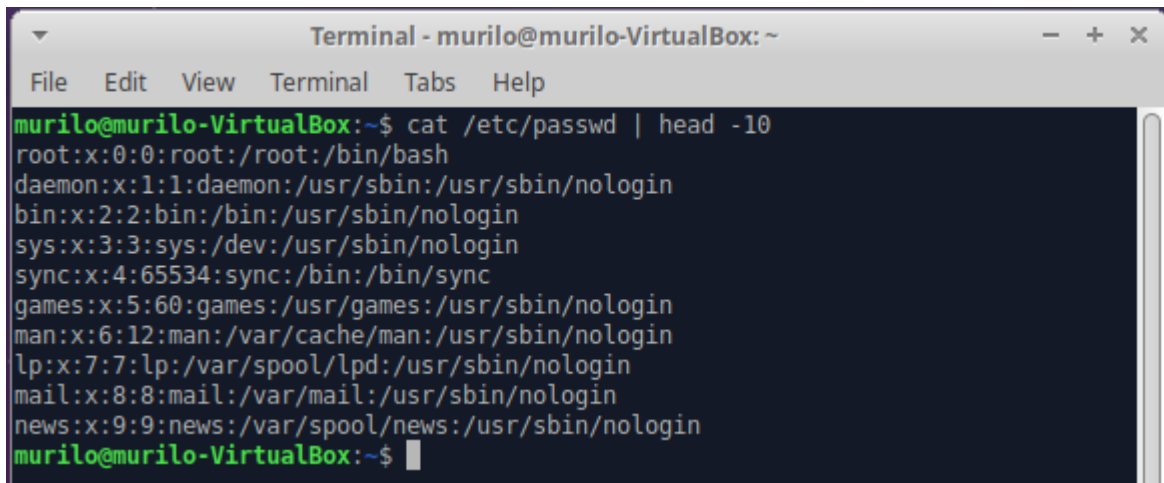
```
murilo@murilo-VirtualBox:~$ ls -l cidades.txt
ls: cannot access 'cidades.txt': No such file or directory
murilo@murilo-VirtualBox:~$
```

Listagem 7.10: Trocando as Permissões de um Arquivo

```
murilo@murilo-VirtualBox:~$ chmod 777 myfile
chmod: cannot access 'myfile': No such file or directory
murilo@murilo-VirtualBox:~$
```
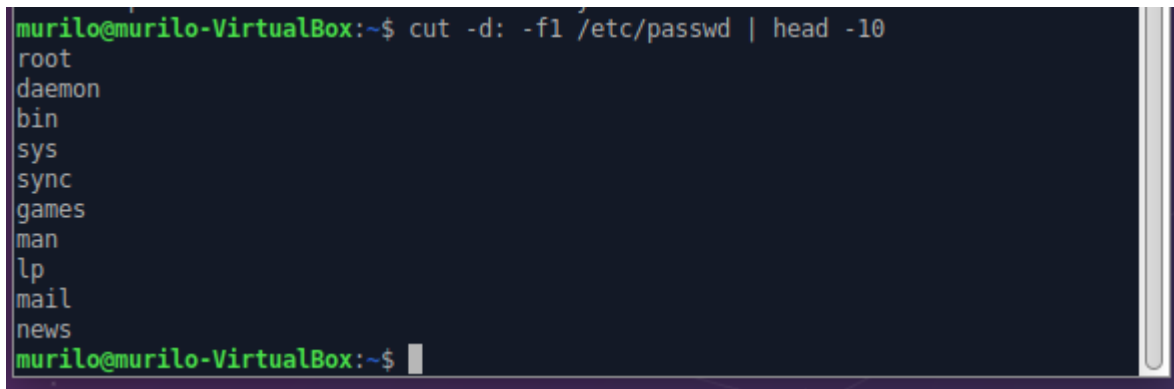
Capítulo 8

Listagem 8.1: Listando Todos os Usuários do Linux


```
murilo@murilo-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
murilo@murilo-VirtualBox:~$
```

Listagem 8.2: Listando Todos os Usuários do Linux


```
murilo@murilo-VirtualBox:~$ cut -d: -f1 /etc/passwd | head -10
root
daemon
bin
sys
sync
games
man
lp
mail
news
murilo@murilo-VirtualBox:~$
```

Listagem 8.3: Listando Todos os Usuários do Linux


```
murilo@murilo-VirtualBox:~$ cat /etc/group | head -10
root:x:0:
daemon:x:1:
bin:x:2:
sys:x:3:
adm:x:4:syslog,murilo
tty:x:5:syslog
disk:x:6:
lp:x:7:
mail:x:8:
news:x:9:
murilo@murilo-VirtualBox:~$
```

Listagem 8.9: Adicionando um Novo Grupo


```
murilo@murilo-VirtualBox:~$  sudo groupadd professores
[sudo] password for murilo:
```

Capítulo 9

Listagem 9.1: Instalação do net-tools

```
murilo@murilo-VirtualBox:~$ sudo apt install net-tools
[sudo] password for murilo:
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 56 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.aebd88e-1ubuntu1 [196 kB]
Fetched 196 kB in 1s (222 kB/s)
Selecting previously unselected package net-tools.
(Reading database ... 190550 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) ...
murilo@murilo-VirtualBox:~$
```

Listagem 9.2: Comando hostname

```
murilo@murilo-VirtualBox:~$ hostname
murilo-VirtualBox
murilo@murilo-VirtualBox:~$
```

Listagem 9.3: Nome da Máquina com cat

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

Listagem 9.4: Tabela ARP

```
murilo@murilo-VirtualBox:~$ arp -a
_gateway (10.0.2.2) at 52:54:00:12:35:02 [ether] on enp0s3
murilo@murilo-VirtualBox:~$
```

Listagem 9.5: Verificando o Endereço IP

Listagem 9.6: Verificando Status da Rede Ethernet

```
murilo@murilo-VirtualBox:~$ ifconfig eno1
eno1: error fetching interface information: Device not found
```

Listagem 9.11: Verificando MTU da Rede Ethernet

```
murilo@murilo-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::9f82:f712:733c:7745  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:45:af:a2  txqueuelen 1000  (Ethernet)
        RX packets 184  bytes 217698 (217.6 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 126  bytes 12958 (12.9 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

murilo@murilo-VirtualBox:~$
```

Listagem 9.13: Verificando o Endereço IP

```
murilo@murilo-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::9f82:f712:733c:7745  prefixlen 64  scopeid 0x20<link>
        ether 08:00:27:45:af:a2  txqueuelen 1000  (Ethernet)
        RX packets 184  bytes 217698 (217.6 KB)
        RX errors 0  dropped 0  overruns 0  frame 0
        TX packets 126  bytes 12958 (12.9 KB)
        TX errors 0  dropped 0 overruns 0  carrier 0  collisions 0

murilo@murilo-VirtualBox:~$
```

Listagem 9.15: Comando ping

Listagem 9.16: Exemplo do Comando ping

Listagem 9.17: Comando ping

Listagem 9.18: Comando ping com Opção de Tempo

Listagem 9.19: Descobrindo o Endereço Ip de um Host

Listagem 9.20: Instalação do dnsutils

Listagem 9.21: Descobrir Informações sobre um Domínio

Listagem 9.22: Utilizando o comando nslookup

Listagem 9.23: Instalação do Traceroute

Listagem 9.24: Rotas

```
murilo@murilo-VirtualBox:~$ traceroute www.google.com
traceroute to www.google.com (142.251.132.68), 30 hops max, 60 byte packets
 1  _gateway (10.0.2.2)  1.452 ms  1.494 ms  1.525 ms
 2  * * *
 3  * * *
 4  * * *
 5  * * *
 6  * * *
 7  * * *
 8  * * *
 9  * * *
10  * * *
11  * * *
12  * * *
13  * * *
14  * * *
15  * * *
16  * * *
17  * * *
```

Listagem 9.26: Rotas com tracepath

```
murilo@murilo-VirtualBox:~$ tracepath www.ufu.br
 1?: [LOCALHOST]                        pmtu 1500
 1:  _gateway                                          0.658ms
 1:  _gateway                                          0.267ms
 2:  no reply
 3:  no reply
 4:  no reply
 5:  no reply
^C
murilo@murilo-VirtualBox:~$
```

Listagem 9.27: Estatísticas de Rede com netstat

```
murilo@murilo-VirtualBox:~$ netstat -s
Ip:
    Forwarding: 2
    323 total packets received
    1 with invalid addresses
    0 forwarded
    0 incoming packets discarded
    320 incoming packets delivered
    480 requests sent out
Icmp:
    64 ICMP messages received
    0 input ICMP message failed
    ICMP input histogram:
        timeout in transit: 5
        echo replies: 59
    222 ICMP messages sent
    0 ICMP messages failed
    ICMP output histogram:
        echo requests: 222
```

Listagem 9.28: Comando netstat -i

```
murilo@murilo-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    1500     328      0      0 0          402      0      0      0 BMRU
lo       65536     123      0      0 0          123      0      0      0 LRU
murilo@murilo-VirtualBox:~$
```

Listagem 9.29: Visualizando Tabela de Roteamento com netstat

```
murilo@murilo-VirtualBox:~$ netstat -rn
Kernel IP routing table
Destination     Gateway         Genmask         Flags   MSS Window  irtt Iface
0.0.0.0         10.0.2.2        0.0.0.0         UG        0 0           0 enp0s3
10.0.2.0        0.0.0.0         255.255.255.0   U         0 0           0 enp0s3
169.254.0.0     0.0.0.0         255.255.0.0     U         0 0           0 enp0s3
murilo@murilo-VirtualBox:~$
```

Listagem 9.30: Instalação do nmap

```
murilo@murilo-VirtualBox:~$ sudo apt-get install nmap
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  liblinear4 liblua5.3-0 lua-lpeg nmap-common
Suggested packages:
  liblinear-tools liblinear-dev ncat ndiff zenmap
The following NEW packages will be installed:
  liblinear4 liblua5.3-0 lua-lpeg nmap nmap-common
0 upgraded, 5 newly installed, 0 to remove and 56 not upgraded.
Need to get 5.528 kB of archives.
After this operation, 26,3 MB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://br.archive.ubuntu.com/ubuntu focal/universe amd64 liblinear4 amd64
2.3.0+dfsg-3build1 [41,7 kB]
Get:2 http://br.archive.ubuntu.com/ubuntu focal/main amd64 liblua5.3-0 amd64 5.3
.3-1.1ubuntu2 [116 kB]
Get:3 http://br.archive.ubuntu.com/ubuntu focal/universe amd64 lua-lpeg amd64 1.
```

Listagem 9.31: Verificando Portas Abertas

```
murilo@murilo-VirtualBox:~$ nmap www.ufu.br
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-18 23:21 -03
Nmap scan report for www.ufu.br (200.19.145.55)
Host is up (0.062s latency).
rDNS record for 200.19.145.55: bulma.dr.ufu.br
Not shown: 997 filtered ports
PORT     STATE SERVICE
80/tcp   open  http
443/tcp  open  https
8008/tcp open  http

Nmap done: 1 IP address (1 host up) scanned in 10.42 seconds
murilo@murilo-VirtualBox:~$
```

Listagem 9.32: Comando nmap com opção -v

```
murilo@murilo-VirtualBox:~$ nmap -v localhost
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-18 23:22 -03
Initiating Ping Scan at 23:22
Scanning localhost (127.0.0.1) [2 ports]
Completed Ping Scan at 23:22, 0.00s elapsed (1 total hosts)
Initiating Connect Scan at 23:22
Scanning localhost (127.0.0.1) [1000 ports]
Discovered open port 631/tcp on 127.0.0.1
Completed Connect Scan at 23:22, 0.02s elapsed (1000 total ports)
Nmap scan report for localhost (127.0.0.1)
Host is up (0.000093s 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 0.07 seconds
murilo@murilo-VirtualBox:~$
```

Listagem 9.34: Rastreando Múltiplos Domínios

```
murilo@murilo-VirtualBox:~$ nmap www.google.com www.facebook.com
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-18 23:23 -03
Nmap scan report for www.google.com (142.250.218.36)
Host is up (0.059s latency).
Other addresses for www.google.com (not scanned): 2800:3f0:4004:80d::2004
rDNS record for 142.250.218.36: rio06s12-in-f4.1e100.net
Not shown: 998 filtered ports
PORT     STATE SERVICE
80/tcp  open  http
443/tcp open  https

Nmap scan report for www.facebook.com (31.13.74.35)
Host is up (0.058s latency).
Other addresses for www.facebook.com (not scanned): 2a03:2880:f133:83:face:b00c
0:25de
rDNS record for 31.13.74.35: edge-star-mini-shv-01-gig2.facebook.com
Not shown: 998 filtered ports
PORT     STATE SERVICE
80/tcp  open  http
443/tcp open  https

Nmap done: 2 IP addresses (2 hosts up) scanned in 51.38 seconds
murilo@murilo-VirtualBox:~$
```

Listagem 9.35: Rastreando uma Sub-rede

```
murilo@murilo-VirtualBox:~$ nmap 192.168.0.*
Starting Nmap 7.80 ( https://nmap.org ) at 2022-05-18 23:39 -03
Nmap scan report for 192.168.0.1
Host is up (0.031s latency).
Not shown: 998 filtered ports
PORT     STATE SERVICE
80/tcp   open  http
5431/tcp open  park-agent

Nmap done: 256 IP addresses (1 host up) scanned in 16.84 seconds
murilo@murilo-VirtualBox:~$
```

Listagem 9.36: Visualizando a Tabela de Roteamento

```
murilo@murilo-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
murilo@murilo-VirtualBox:~$
```

Listagem 9.37: Uso do Telnet

```
murilo@murilo-VirtualBox:~$ telnet www.ufu.br 80
Trying 200.19.145.55...
Connected to www.ufu.br.
Escape character is '^]'.
```

Listagem 9.41: Instalando ssh

```
murilo@murilo-VirtualBox:~$ sudo apt-get install openssh-client
[sudo] password for murilo:
Reading package lists... Done
Building dependency tree
Reading state information... Done
Suggested packages:
  keychain libpam-ssh monkeysphere ssh-askpass
The following packages will be upgraded:
  openssh-client
1 upgraded, 0 newly installed, 0 to remove and 55 not upgraded.
Need to get 671 kB of archives.
After this operation, 0 B of additional disk space will be used.
Get:1 http://br.archive.ubuntu.com/ubuntu focal-updates/main amd64 opens
t amd64 1:8.2p1-4ubuntu0.5 [671 kB]
Fetched 671 kB in 1s (668 kB/s)
(Reading database ... 191504 files and directories currently installed.)
Preparing to unpack .../openssh-client_1%3a8.2p1-4ubuntu0.5_amd64.deb ..
Unpacking openssh-client (1:8.2p1-4ubuntu0.5) over (1:8.2p1-4ubuntu0.4)
Setting up openssh-client (1:8.2p1-4ubuntu0.5) ...
Processing triggers for man-db (2.9.1-1) ...
murilo@murilo-VirtualBox:~$ sudo apt-get install openssh-server
Reading package lists... Done
```

Listagem 9.46: Abrindo Firefox Remotamente

```
Terminal - murilo@murilo-VirtualBox: ~
File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ firefox &
[1] 6937
murilo@murilo-VirtualBox:~$
```

Listagem 9.49: Instalação do tcpdump

```
murilo@murilo-VirtualBox:~$ sudo apt install tcpdump
Reading package lists... Done
Building dependency tree
Reading state information... Done
tcpdump is already the newest version (4.9.3-4ubuntu0.1).
tcpdump set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 55 not upgraded.
murilo@murilo-VirtualBox:~$
```
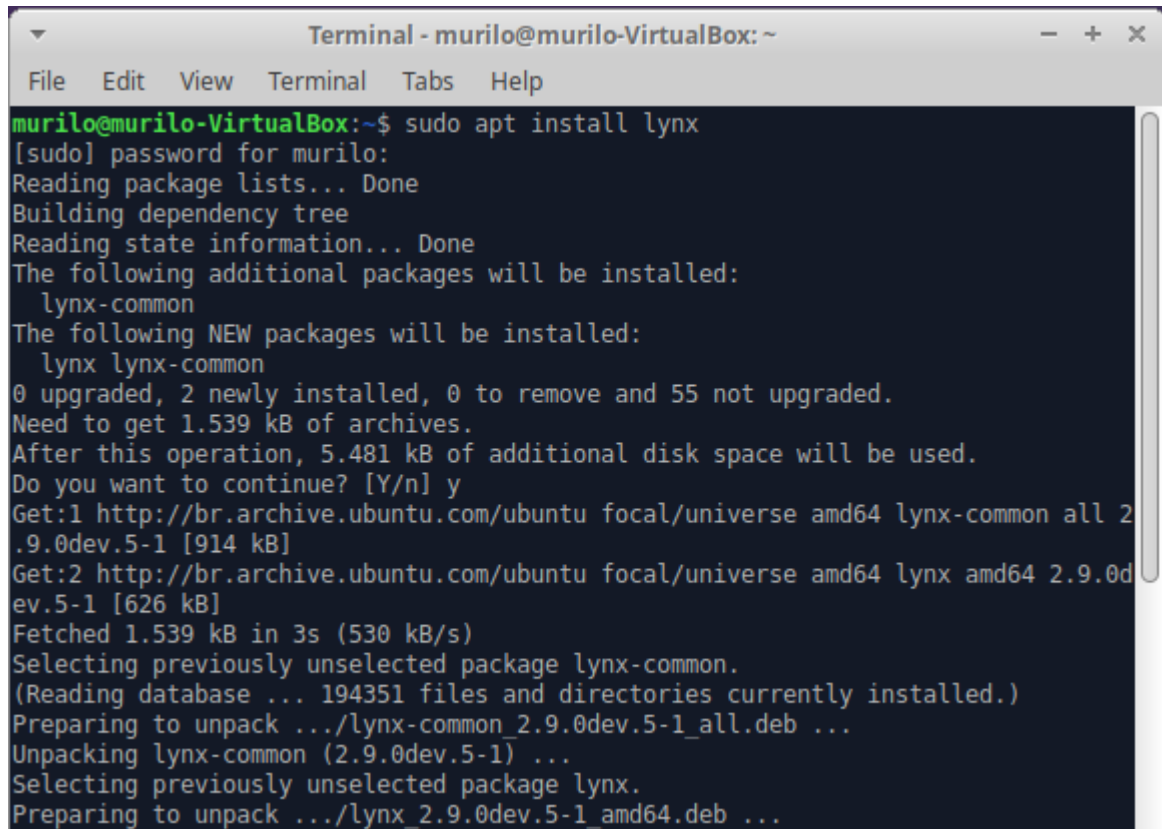
Listagem 9.50: Interfaces que podem ser utilizadas com tcpdump

```
murilo@murilo-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]
murilo@murilo-VirtualBox:~$
```

Listagem 9.51: Capturando Pacotes da Interface de Rede

```
murilo@murilo-VirtualBox:~$ tcpdump -i enp0s3
tcpdump: enp0s3: You don't have permission to capture on that device
(socket: Operation not permitted)
murilo@murilo-VirtualBox:~$
```
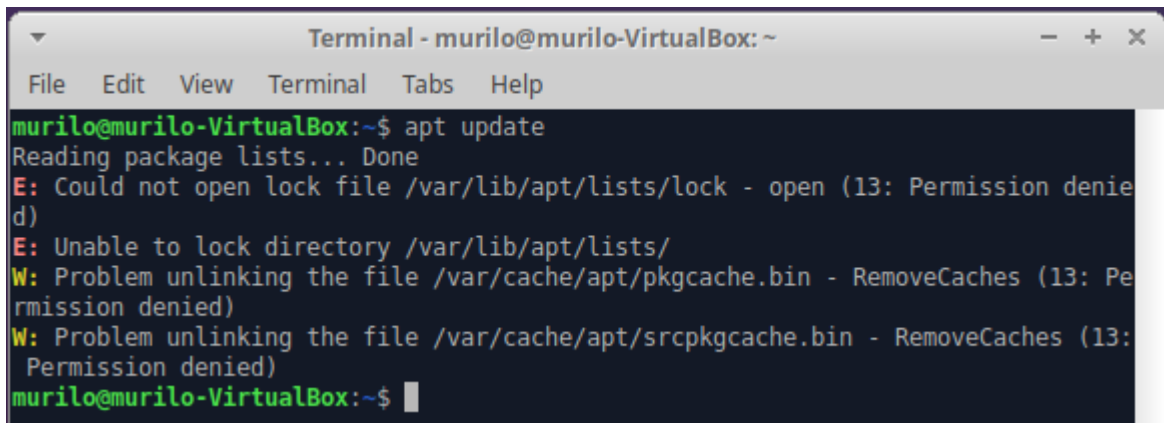
Listagem 9.53: Instalação do lynx

```
Terminal - murilo@murilo-VirtualBox: ~                    — + ×

 File   Edit   View   Terminal   Tabs   Help

murilo@murilo-VirtualBox:~$ sudo apt install lynx
[sudo] password for murilo:
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  lynx-common
The following NEW packages will be installed:
  lynx lynx-common
0 upgraded, 2 newly installed, 0 to remove and 55 not upgraded.
Need to get 1.539 kB of archives.
After this operation, 5.481 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://br.archive.ubuntu.com/ubuntu focal/universe amd64 lynx-common all 2
.9.0dev.5-1 [914 kB]
Get:2 http://br.archive.ubuntu.com/ubuntu focal/universe amd64 lynx amd64 2.9.0d
ev.5-1 [626 kB]
Fetched 1.539 kB in 3s (530 kB/s)
Selecting previously unselected package lynx-common.
(Reading database ... 194351 files and directories currently installed.)
Preparing to unpack .../lynx-common_2.9.0dev.5-1_all.deb ...
Unpacking lynx-common (2.9.0dev.5-1) ...
Selecting previously unselected package lynx.
Preparing to unpack .../lynx_2.9.0dev.5-1_amd64.deb ...
```

Listagem 9.54: Utilizando o lynx

Listagem 9.55: Baixando Sites com wget
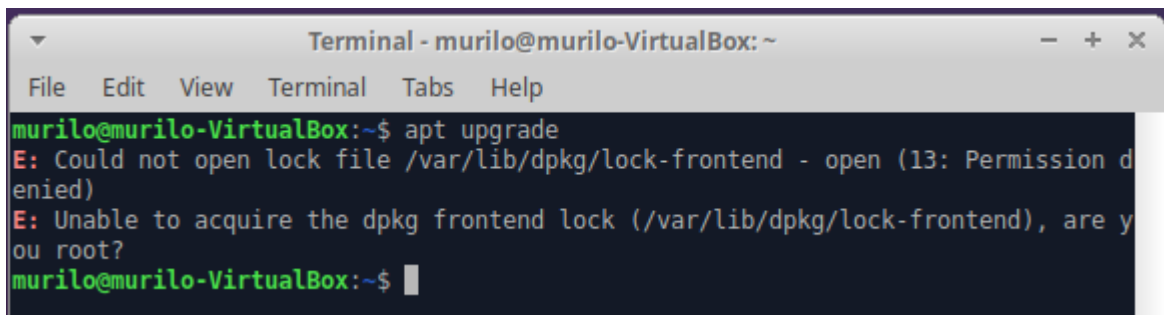
Capítulo 10

Listagem 10.1: Atualização da Lista de Pacotes Disponíveis

Listagem 10.2: Atualização de Pacotes

Listagem 10.3: Lista de Pacotes para Upgrade

Listagem 10.4: Instalação do Pacote vim
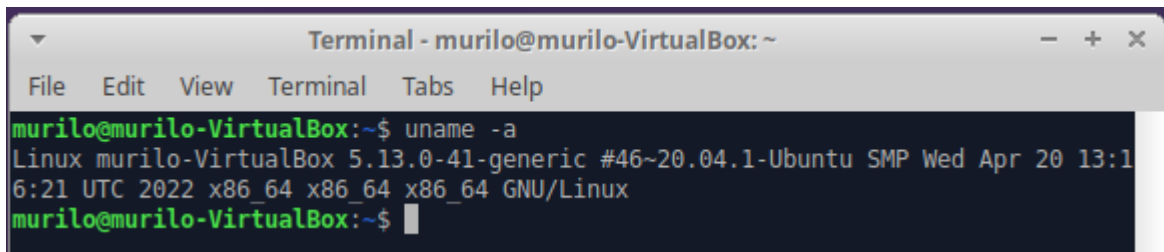
Listagem 10.5: Removendo o Pacote vim

Capítulo 14

Listagem 14.1: Versão do Kernel

```
Terminal - murilo@murilo-VirtualBox: ~
File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ uname -a
Linux murilo-VirtualBox 5.13.0-41-generic #46~20.04.1-Ubuntu SMP Wed Apr 20 13:1
6:21 UTC 2022 x86_64 x86_64 x86_64 GNU/Linux
murilo@murilo-VirtualBox:~$
```

Listagem 14.2: Versão do Kernel

```
murilo@murilo-VirtualBox:~$ uname -s
Linux
murilo@murilo-VirtualBox:~$ uname -n
murilo-VirtualBox
murilo@murilo-VirtualBox:~$ uname -r
5.13.0-41-generic
murilo@murilo-VirtualBox:~$ uname -v
#46~20.04.1-Ubuntu SMP Wed Apr 20 13:16:21 UTC 2022
murilo@murilo-VirtualBox:~$
```
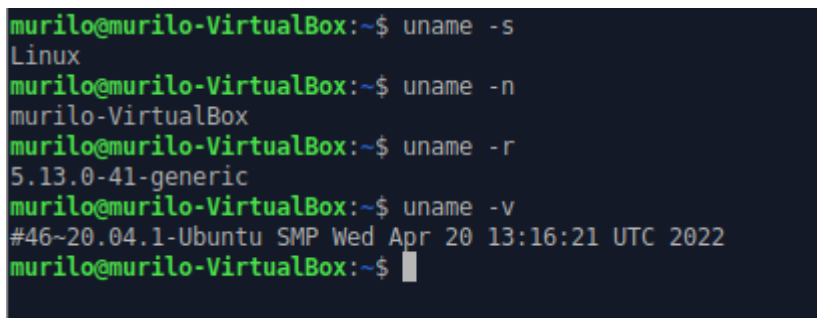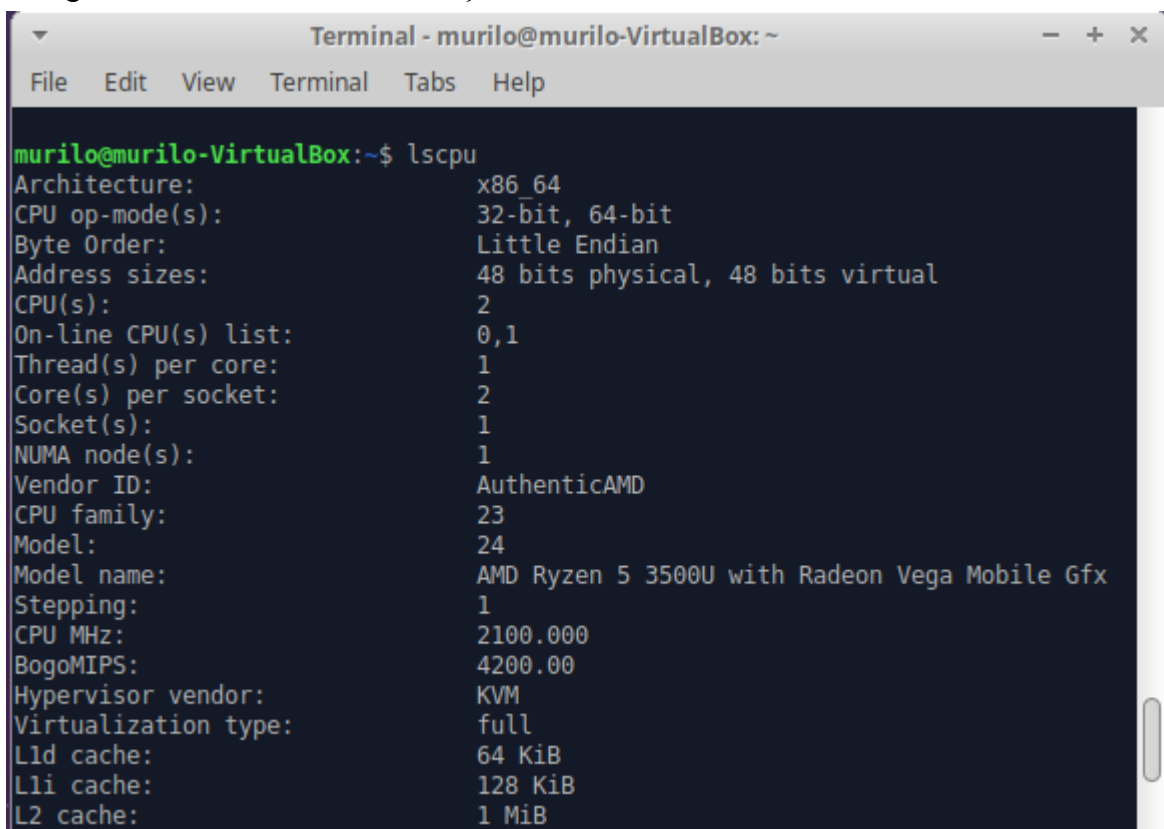
Listagem 14.4: Verificando Informações sobre a CPU

```
Terminal - murilo@murilo-VirtualBox: ~
File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ lscpu
Architecture:              x86_64
CPU op-mode(s):            32-bit, 64-bit
Byte Order:                Little Endian
Address sizes:             48 bits physical, 48 bits virtual
CPU(s):                    2
On-line CPU(s) list:       0,1
Thread(s) per core:        1
Core(s) per socket:        2
Socket(s):                 1
NUMA node(s):              1
Vendor ID:                 AuthenticAMD
CPU family:                23
Model:                     24
Model name:                AMD Ryzen 5 3500U with Radeon Vega Mobile Gfx
Stepping:                  1
CPU MHz:                   2100.000
BogoMIPS:                  4200.00
Hypervisor vendor:         KVM
Virtualization type:       full
L1d cache:                 64 KiB
L1i cache:                 128 KiB
L2 cache:                  1 MiB
```

Listagem 14.5: Verificando a CPU

Listagem 14.6: Verificando a CPU

Listagem 14.7: Listando Dispositivos PCI

Listagem 14.8: Listando Dispositivos Bloco

Listagem 14.9: Imprimindo as Partições

```
murilo@murilo-VirtualBox:~$ cat /proc/partitions
major minor  #blocks  name

  11        0      60096 sr0
   8        0   41943040 sda
   8        1     999424 sda1
   8        2   40941568 sda2
murilo@murilo-VirtualBox:~$
```

Listagem 14.11: Instalando o pacote pacmciautils

```
murilo@murilo-VirtualBox:~$ sudo apt-get install pcmciautils
[sudo] password for murilo:
Reading package lists... Done
Building dependency tree
Reading state information... Done
pcmciautils is already the newest version (018-11).
pcmciautils set to manually installed.
0 upgraded, 0 newly installed, 0 to remove and 55 not upgraded.
murilo@murilo-VirtualBox:~$
```

Listagem 14.12: Listando Dispositivos PCMCIA

```
Terminal - murilo@murilo-VirtualBox: ~          – + ×

File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$  lspcmcia
murilo@murilo-VirtualBox:~$
```

Listagem 14.13: Listando Informações sobre a Memória

```
Terminal - murilo@murilo-VirtualBox: ~          – + ×

File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ free
              total        used        free      shared  buff/cache   available
Mem:         994548      418864      134124        1584      441560      423308
Swap:        999420        8508      990912
murilo@murilo-VirtualBox:~$
```

Listagem 14.14: Listando Informações sobre a Memória

```
murilo@murilo-VirtualBox:~$ free -m
              total        used        free      shared  buff/cache   available
Mem:            971         409         130           1         431         413
Swap:           975           8         967
murilo@murilo-VirtualBox:~$
```

Listagem 14.15: Listando Informações sobre a Memória

Listagem 14.16: Listando Informações sobre a Memória

Listagem 14.17: Listando Informações sobre a Memória
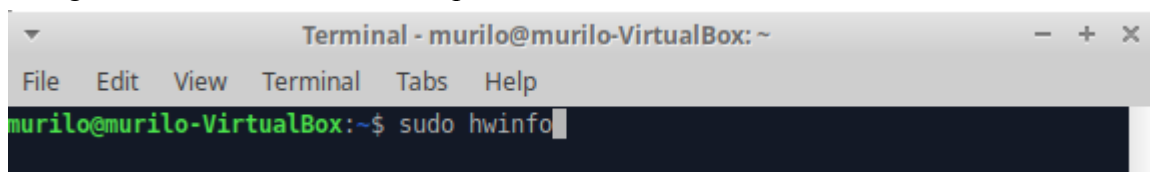
Listagem 14.19: Instalando hwinfo

```
murilo@murilo-VirtualBox:~$ sudo apt-get install hwinfo
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  libhd21 libx86emu2
The following NEW packages will be installed:
  hwinfo libhd21 libx86emu2
0 upgraded, 3 newly installed, 0 to remove and 55 not upgraded.
Need to get 793 kB of archives.
After this operation, 3.498 kB of additional disk space will be used.
Do you want to continue? [Y/n] y
Get:1 http://br.archive.ubuntu.com/ubuntu focal/universe amd64 libx86emu2 amd64
2.4-1 [45,5 kB]
Get:2 http://br.archive.ubuntu.com/ubuntu focal/universe amd64 libhd21 amd64 21.
68-1 [729 kB]
Get:3 http://br.archive.ubuntu.com/ubuntu focal/universe amd64 hwinfo amd64 21.6
8-1 [18,0 kB]
Fetched 793 kB in 1s (575 kB/s)
Selecting previously unselected package libx86emu2:amd64.
(Reading database ... 194459 files and directories currently installed.)
Preparing to unpack .../libx86emu2_2.4-1_amd64.deb ...
Unpacking libx86emu2:amd64 (2.4-1) ...
```

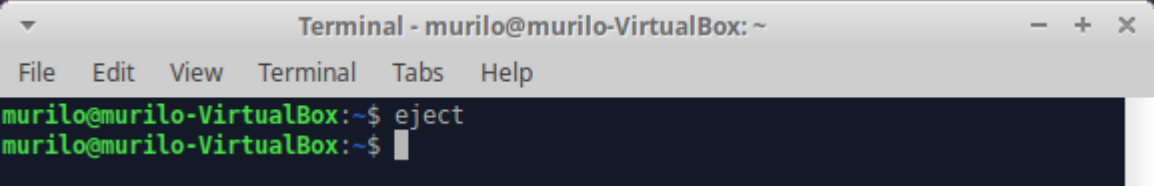Listagem 14.20: Analisando os Dispositivos de Hardware

```
Terminal - murilo@murilo-VirtualBox:~
File   Edit   View   Terminal   Tabs   Help
murilo@murilo-VirtualBox:~$ sudo hwinfo
```

Listagem 14.21: Versão Resumida do Relatório do lshw

```
murilo@murilo-VirtualBox:~$ sudo hwinfo --short
cpu:
                        AMD Ryzen 5 3500U with Radeon Vega Mobile Gfx, 2100 MHz
                        AMD Ryzen 5 3500U with Radeon Vega Mobile Gfx, 2100 MHz
keyboard:
  /dev/input/event2     AT Translated Set 2 keyboard
mouse:
  /dev/input/mice       VirtualBox USB Tablet
  /dev/input/mice       Mouse
  /dev/input/mice       VirtualBox mouse integration
graphics card:
                        VMware VMWARE0405
sound:
                        Intel 82801AA AC'97 Audio Controller
storage:
                        Intel 82801HM/HEM (ICH8M/ICH8M-E) SATA Controller [AHCI m
ode]
                        Intel 82371AB/EB/MB PIIX4 IDE
network:
  enp0s3                Intel PRO/1000 MT Desktop Adapter
network interface:
  enp0s3                Ethernet network interface
  lo                    Loopback network interface
```

Listagem 14.22: Comando para remover CDROM