Universidade Federal de Uberlândia
FEELT - Faculdade de Engenharia Elétrica

SISTEMAS EMBARCADOS II

Tarefa 01

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Uberlândia/MG

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Sumário

Objetivos

O objetivo desse roteiro é explorar as ferramentas básicas de interação de um usuário como o sistema, por meio da linha de comando. À primeira vista, a linha de comando pode parecer um sistema arcaico e difícil, entretanto, esse meio representa uma das maiores vantagens dos sistemas Linux/Unix.

Utilizando o livro: "Linux: Comandos Básicos e Avançados" (2ª edição) de Vivas, Araújo, Pitangui e Assis, fora reproduzido os comandos apresentados do capítulo 1 ao 10 e 14. Através de *printscreens* dos resultados dos comandos apresentados, foi elaborado este relatório.

Prática

Acessando o sistema

```
Ubuntu 20.04.3 LTS user-VirtualBox tty1

user-VirtualBox login: user
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.
Last login: Wed Dec  8 00:28:56 -03 2021 on tty4
user@user-VirtualBox:~$
```

Prompt de login

```
Ubuntu 20.04.3 LTS user-VirtualBox tty1

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

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user@user-VirtualBox:~$
```

Explicando a Padronização de Apresentação

```
user@user-VirtualBox:~$ /home
bash: /home: Is a directory
```

Formato dos Comandos

```
user@user-VirtualBox:~$ ls
Desktop  Documents  Downloads  Music  Pictures  Public  Templates  Videos
```

Opções dos Comandos

```
user@user-VirtualBox:~$ la -a -l
total 124
drwxr-xr-x 15 user user 4096 dez  8 19:43 .
drwxr-xr-x  3 root root 4096 dez  7 21:17 ..
-rw-------  1 user user  412 dez  8 00:43 .bash_history
-rw-r--r--  1 user user  220 dez  7 21:17 .bash_logout
-rw-r--r--  1 user user 3771 dez  7 21:17 .bashrc
drwxrwxr-x  9 user user 4096 dez  8 19:38 .cache
drwxr-xr-x 11 user user 4096 dez  7 22:28 .config
drwxr-xr-x  2 user user 4096 dez  7 22:27 Desktop
-rw-r--r--  1 user user   26 dez  7 22:27 .dmrc
drwxr-xr-x  2 user user 4096 dez  7 22:27 Documents
drwxr-xr-x  2 user user 4096 dez  7 22:27 Downloads
drwx------  3 user user 4096 dez  7 22:27 .gnupg
-rw-------  1 user user    0 dez  7 22:27 .ICEauthority
drwxrwxr-x  3 user user 4096 dez  7 22:27 .local
drwxr-xr-x  2 user user 4096 dez  7 22:27 Music
drwxrwxr-x  2 user user 4096 dez  8 19:43 Origem
drwxr-xr-x  2 user user 4096 dez  7 22:27 Pictures
-rw-r--r--  1 user user  807 dez  7 21:17 .profile
drwxr-xr-x  2 user user 4096 dez  7 22:27 Public
-rw-r--r--  1 user user    0 dez  7 22:53 .sudo_as_admin_successful
drwxr-xr-x  2 user user 4096 dez  7 22:27 Templates
-rw-r-----  1 user user    4 dez  8 19:38 .vboxclient-clipboard.pid
-rw-r-----  1 user user    5 dez  8 19:38 .vboxclient-display-svga-x11.pid
-rw-r-----  1 user user    5 dez  8 19:38 .vboxclient-draganddrop.pid
-rw-r-----  1 user user    5 dez  8 19:38 .vboxclient-seamless.pid
drwxr-xr-x  2 user user 4096 dez  7 22:27 Videos
-rw-------  1 user user   60 dez  8 19:38 .Xauthority
-rw-r--r--  1 user user 1600 dez  7 21:17 .Xdefaults
-rw-r--r--  1 user user   14 dez  7 21:17 .xscreensaver
-rw-------  1 user user 6367 dez  8 19:39 .xsession-errors
-rw-------  1 user user 5782 dez  8 00:37 .xsession-errors.old
```

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

```
user@user-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.
```

Shell Utilizado

```
user@user-VirtualBox:~$ echo $SHELL
/bin/bash
```

```
user@user-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
```

Caminho Completo

```
user@user-VirtualBox:~$ /bin/ls
Desktop    Downloads  Origem    Public     Videos
Documents  Music      Pictures  Templates
```

Limpando a tela

```
user@user-VirtualBox:~$ clear
```

Exibindo Mensagens no Terminal

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

Histórico

```
user@user-VirtualBox:~$ history
    1  cd media/user/vObx_GAs_6.1.18/
    2  cd media/user/VBox_GAs_6.1.30/
    3  cd /media/user/VBox_GAs_6.1.30/
    4  ls
    5  sudo
    6  sudo ./
    7  sudo ./VBox
    8  sudo
    9  sudo./
   10  sudo ./
   11  cd /media/user/VBox_GAs_6.1.30/
   12  ls
   13  sudo
   14  sudo ./VBox
   15  sudo /VBox
   16  cd /media/user/VBox_GAs_6.1.30/
   17  ls
   18  sudo
   19  sudo
   20  sudo /
   21  sudo ./VBoxLinuxAdditions.run
   22  sudo rebot
   23  sudo reboot
   24  su -
   25  ls
   26  ls -lF
   27  /home
   28  /home/videos/
   29  /Home
   30  /home/user/
   31  -p /home/user/
   32  cp -p /home/user/
   33  ls -a -l
   34  -su
   35  cd /home/music
   36  /home
   37  ls
```

```
  38  cp -p /home/Templates/Plain Text.txt
  39  cp -p /home
  40  cp--help
  41  cp --help
  42  cleaar
  43  clear
  44  la -a -l
  45  /usr/local$ grep -- -a/ etc/ hosts
  46  / user
  47  /user
  48  / home / user
  49  / home / user / Templates / Plain Text.txt
  50  cd / home
  51  ls --all
  52  pwd --version
  53  cd --help
  54  pwd --version
  55  echo $SHELL
  56  cat /etc/shells
  57  /bin/ls
  58  clear
  59  echo teste
  60  echo 'teste'
  61  wcho"teste"
  62  clear
  63  echo teste
  64  echo 'teste'
  65  echo"teste"
  66  echo "teste"
  67  clear
  68  echo teste
  69  echo 'teste'
  70  echo "teste"
  71  echo -e "string1\tstring2\nstring3"
  72  (reverse-i-serach)'fi'
  73  (reverse-i-search)'':
  74  (reverse-i-search)''
  75  history
user@user-VirtualBox:~$ S
```

Executar um determinado comando do history

```
user@user-VirtualBox:~$ history | grep ls
   4  ls
  12  ls
  17  ls
  25  ls
  26  ls -lF
  33  ls -a -l
  37  ls
  51  ls --all
  56  cat /etc/shells
  57  /bin/ls
  77  history grep ls
  78  histoy grep ls
  79  history | grep ls
user@user-VirtualBox:~$
```

Limpar Histórico

```
user@user-VirtualBox:~$ history -c
user@user-VirtualBox:~$ history
    1  history
user@user-VirtualBox:~$
```

Tamanho do Histórico

```
user@user-VirtualBox:~$ echo $HISTSIZE
1000
user@user-VirtualBox:~$
```

Aumentando o Tamanho dos comandos armazenados

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

Reduzindo o Tamanho dos comandos armazenados

```
user@user-VirtualBox:~$ export HISTSIZE=0
user@user-VirtualBox:~$ echo $HISTSIZE
0
user@user-VirtualBox:~$
```

Arquivo contendo histórico de comandos

```
user@user-VirtualBox:~$ cat ~/.bash_history
cd media/user/vObx_GAs_6.1.18/
cd media/user/VBox_GAs_6.1.30/
cd /media/user/VBox_GAs_6.1.30/
ls
sudo
sudo ./
sudo ./VBox
sudo
sudo./
sudo ./
cd /media/user/VBox_GAs_6.1.30/
ls
sudo
sudo ./VBox
sudo /VBox
cd /media/user/VBox_GAs_6.1.30/
ls
sudo
sudo
sudo /
sudo ./VBoxLinuxAdditions.run
sudo rebot
sudo reboot
su -
ls
ls -lF
/home
/home/videos/
/Home
/home/user/
-p /home/user/
cp -p /home/user/
ls -a -l
-su
user@user-VirtualBox:~$
```

Usuário Root no Ubuntu

```
user@user-VirtualBox:~$ sudo apt install vim
Reading package lists... Done
Building dependency tree
Reading state information... Done
The following additional packages will be installed:
  vim-runtime
Suggested packages:
  ctags vim-doc vim-scripts
The following NEW packages will be installed:
  vim vim-runtime
0 upgraded, 2 newly installed, 0 to remove and 71 not upgraded.
Need to get 7.114 kB of archives.
After this operation, 34,6 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-updates/main amd64 vim-runtime a
ll 2:8.1.2269-1ubuntu5.4 [5.875 kB]
Get:2 http://br.archive.ubuntu.com/ubuntu focal-updates/main amd64 vim amd64 2:8
.1.2269-1ubuntu5.4 [1.239 kB]
Fetched 7.114 kB in 4s (1.951 kB/s)
Selecting previously unselected package vim-runtime.
(Reading database ... 196806 files and directories currently installed.)
Preparing to unpack .../vim-runtime_2%3a8.1.2269-1ubuntu5.4_all.deb ...
Adding 'diversion of /usr/share/vim/vim81/doc/help.txt to /usr/share/vim/vim81/d
oc/help.txt.vim-tiny by vim-runtime'
```

```
Adding 'diversion of /usr/share/vim/vim81/doc/tags to /usr/share/vim/vim81/doc/t
ags.vim-tiny by vim-runtime'
Unpacking vim-runtime (2:8.1.2269-1ubuntu5.4) ...
Selecting previously unselected package vim.
Preparing to unpack .../vim_2%3a8.1.2269-1ubuntu5.4_amd64.deb ...
Unpacking vim (2:8.1.2269-1ubuntu5.4) ...
Setting up vim-runtime (2:8.1.2269-1ubuntu5.4) ...
Setting up vim (2:8.1.2269-1ubuntu5.4) ...
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vim (vim) in a
uto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vimdiff (vimdi
ff) in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/rvim (rvim) in
 auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/rview (rview)
in auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/vi (vi) in aut
o mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/view (view) in
 auto mode
update-alternatives: using /usr/bin/vim.basic to provide /usr/bin/ex (ex) in aut
o mode
Processing triggers for man-db (2.9.1-1) ...
user@user-VirtualBox:~$ 
```

LogOut e Exit

```
user@user-VirtualBox:~$ logout
bash: logout: not login shell: use `exit'
user@user-VirtualBox:~$ exit
```

Desligando Imediatamente com shutdown

```
user@user-VirtualBox:~$ shutdown -h now
```

Desligando Imediatamente com poweroff

```
user@user-VirtualBox:~$ sudo poweroff
```

Desligando Em 3 Minutos

```
user@user-VirtualBox:~$ sudo shutdown -h +3
```

Desligando em uma hora específica

```
user@user-VirtualBox:~$ sudo shutdown -h 10:10
```

Reinicializando a máquina

```
user@user-VirtualBox:~$ sudo reboot
```

Reinicializando com shutdown

```
user@user-VirtualBox:~$ sudo shutdown -r now
```

Reinicializando em uma hora específica

```
user@user-VirtualBox:~$ sudo shutown -r 8:40
```

Reinicializando em 3 Minutos

```
user@user-VirtualBox:~$ sudo shutown -r +3
```

Cancelando shutdown

```
user@user-VirtualBox:~$ sudo shutown -c
```

Listando o Conteúdo em um Diretório

```
user@user-VirtualBox:~$ ls
Desktop    Downloads  Origem    Public     Videos
Documents  Music      Pictures  Templates
user@user-VirtualBox:~$
```

Listando uma única entrada por linha

```
user@user-VirtualBox:~$ ls -1
Desktop
Documents
Downloads
Music
Origem
Pictures
Public
Templates
Videos
user@user-VirtualBox:~$
```

Listando o conteúdo no Formato Longo

```
user@user-VirtualBox:~$ ls -l
total 36
drwxr-xr-x 2 user user 4096 dez  7 22:27 Desktop
drwxr-xr-x 2 user user 4096 dez  7 22:27 Documents
drwxr-xr-x 2 user user 4096 dez  7 22:27 Downloads
drwxr-xr-x 2 user user 4096 dez  7 22:27 Music
drwxrwxr-x 2 user user 4096 dez  8 19:43 Origem
drwxr-xr-x 2 user user 4096 dez  7 22:27 Pictures
drwxr-xr-x 2 user user 4096 dez  7 22:27 Public
drwxr-xr-x 2 user user 4096 dez  7 22:27 Templates
drwxr-xr-x 2 user user 4096 dez  7 22:27 Videos
user@user-VirtualBox:~$
```

Informações Sobre Arquivos e Diretórios (-)

```
user@user-VirtualBox:~$ ls -l /home
total 4
drwxr-xr-x 15 user user 4096 dez  8 20:53 user
user@user-VirtualBox:~$
```

Informações Sobre Arquivos e Diretórios (d)

```
user@user-VirtualBox:~$ ls dl /home
ls: cannot access 'dl': No such file or directory
/home:
user
user@user-VirtualBox:~$
```

Informações Sobre Diretórios

```
user@user-VirtualBox:~$ ls -ld /home
drwxr-xr-x 3 root root 4096 dez  7 21:17 /home
user@user-VirtualBox:~$
```

Listando Todos os arquivos Inclusive os Ocultos

```
user@user-VirtualBox:~$ ls -all /home
total 12
drwxr-xr-x  3 root root 4096 dez  7 21:17 .
drwxr-xr-x 20 root root 4096 dez  7 21:06 ..
drwxr-xr-x 15 user user 4096 dez  8 20:53 user
user@user-VirtualBox:~$
```

Listando Apenas Arquivos Ocultos

```
user@user-VirtualBox:~$ ls -ls .?*
4 -rw-------  1 user user  494 dez  8 20:43 .bash_history
4 -rw-r--r--  1 user user  220 dez  7 21:17 .bash_logout
4 -rw-r--r--  1 user user 3771 dez  7 21:17 .bashrc
4 -rw-r--r--  1 user user   26 dez  7 22:27 .dmrc
0 -rw-------  1 user user    0 dez  7 22:27 .ICEauthority
4 -rw-r--r--  1 user user  807 dez  7 21:17 .profile
0 -rw-r--r--  1 user user    0 dez  7 22:53 .sudo_as_admin_successful
4 -rw-r-----  1 user user    5 dez  8 20:53 .vboxclient-clipboard.pid
4 -rw-r-----  1 user user    5 dez  8 20:53 .vboxclient-display-svga-x11.pid
4 -rw-r-----  1 user user    5 dez  8 20:53 .vboxclient-draganddrop.pid
4 -rw-r-----  1 user user    5 dez  8 20:53 .vboxclient-hostversion.pid
4 -rw-r-----  1 user user    5 dez  8 20:53 .vboxclient-seamless.pid
4 -rw-------  1 user user   60 dez  8 20:53 .Xauthority
4 -rw-r--r--  1 user user 1600 dez  7 21:17 .Xdefaults
4 -rw-r--r--  1 user user   14 dez  7 21:17 .xscreensaver
8 -rw-------  1 user user 6135 dez  8 20:54 .xsession-errors
8 -rw-------  1 user user 6135 dez  8 20:50 .xsession-errors.old


..:
total 4
4 drwxr-xr-x 15 user user 4096 dez  8 20:53 user

.cache:
total 40
4 -rw-rw-r-- 1 user user    6 dez  8 20:54 blueman-applet-1000
4 -rw-rw-r-- 1 user user    6 dez  8 20:54 blueman-tray-1000
4 drwxr-xr-x 2 user user 4096 dez  8 20:12 fontconfig
4 drwxrwxr-x 2 user user 4096 dez  8 20:54 gstreamer-1.0
4 drwxr-xr-x 3 user user 4096 dez  7 22:28 gtk-3.0
4 drwxr-xr-x 2 user user 4096 dez  7 22:27 mesa_shader_cache
0 -rw-r--r-- 1 user user    0 dez  8 00:03 motd.legal-displayed
4 drwx------ 2 user user 4096 dez  7 22:27 obexd
4 drwx------ 2 user user 4096 dez  7 22:27 sessions
4 drwxrwxr-x 2 user user 4096 dez  7 22:27 update-manager-core
4 -rw-rw-r-- 1 user user  490 dez  8 20:54 xfce4-indicator-plugin.log
```

```
4 drwxrwxr-x 2 user user 4096 dez  7 22:27 update-manager-core
4 -rw-rw-r-- 1 user user  490 dez  8 20:54 xfce4-indicator-plugin.log

.config:
total 48
4 drwxr-xr-x 2 user user 4096 dez  7 21:17 atril
4 drwx------ 2 user user 4096 dez  7 22:28 dconf
4 drwx------ 2 user user 4096 dez  8 20:54 gtk-3.0
4 drwxr-xr-x 3 user user 4096 dez  7 21:17 libreoffice
4 drwx------ 2 user user 4096 dez  7 22:27 pulse
4 drwx------ 2 user user 4096 dez  7 22:28 Thunar
4 -rw-r--r-- 1 user user   98 dez  7 21:17 Trolltech.conf
4 drwx------ 2 user user 4096 dez  7 22:27 update-notifier
4 -rw------- 1 user user  633 dez  7 22:27 user-dirs.dirs
4 -rw-rw-r-- 1 user user    5 dez  7 22:27 user-dirs.locale
4 drwxr-xr-x 7 user user 4096 dez  7 22:46 xfce4
4 drwxrwxr-x 2 user user 4096 dez  7 22:27 xubuntu

.gnupg:
total 4
4 drwx------ 2 user user 4096 dez  7 22:27 private-keys-v1.d

.local:
total 4
4 drwx------ 4 user user 4096 dez  7 22:27 share
user@user-VirtualBox:~$
```

Classificando Arquivos e Diretórios

```
user@user-VirtualBox:~$ ls -F
Desktop/    Downloads/  Origem/    Public/     Videos/
Documents/  Music/      Pictures/  Templates/
user@user-VirtualBox:~$
```

Tamanho em Blocos

```
user@user-VirtualBox:~$ ls -s
total 36
4 Desktop    4 Downloads  4 Origem    4 Public    4 Videos
4 Documents  4 Music      4 Pictures  4 Templates
user@user-VirtualBox:~$
```

Tamanho dos Arquivos

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

Visualizando Informações Sobre o Diretório

```
user@user-VirtualBox:~$ ls -ld
drwxr-xr-x 15 user user 4096 dez  8 20:53 .
user@user-VirtualBox:~$
```

Navegando

```
user@user-VirtualBox:~$ cd /home
user@user-VirtualBox:/home$
```

Atalho Para Diretório Raíz do Usuário

```
user@user-VirtualBox:/home$ cd ~
user@user-VirtualBox:~$
```

Comando pwd

```
user@user-VirtualBox:~$ pwd /home/user/Public
/home/user
user@user-VirtualBox:~$
```

Copiando Arquivos

```
user@user-VirtualBox:~$ cp Plain_Text.txt /home/user/Templates
```

Comando echo

```
user@user-VirtualBox:~$ echo 'Olá, Bruno!'
Olá, Bruno!
user@user-VirtualBox:~$
```

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```
user@user-VirtualBox:~$ echo -en 'Olá,\t Bruno!'
Olá,      Bruno!user@user-VirtualBox:~$ ▉
```

Comando cut

```
user@user-VirtualBox:~$ echo 'Bruno Damasceno Reis' | cut -c 1-10
Bruno Dama
user@user-VirtualBox:~$ ▉
```

Comando cut para Listar Usuários

```
user@user-VirtualBox:~$ who | cut -c1-8 | sort | uniq
user
user@user-VirtualBox:~$ ▉
```

Comando seq

```
user@user-VirtualBox:~$ seq 3
1
2
3
user@user-VirtualBox:~$ seq 3 6
3
4
5
6
user@user-VirtualBox:~$ seq 1.1 0.1 1.5
1,1
1,2
1,3
1,4
1,5
user@user-VirtualBox:~$ ▉
```

Comando substituir

```
user@user-VirtualBox:~$ echo 'L{1}, K{2}' | tr '{}' '()'
L(1), K(2)
user@user-VirtualBox:~$ ▉
```

Comando paste

```
user@user-VirtualBox:~$ paste -d , <(seq 1 3) <(seq 4 6) <(seq 7 9)
1,4,7
2,5,8
3,6,9
user@user-VirtualBox:~$ ▉
```

Contando número de bytes

```
user@user-VirtualBox:~$ echo "áéíúó" | wc -c
11
user@user-VirtualBox:~$ echo "áéíúó" | wc -m
6
user@user-VirtualBox:~$
```

Gerando todos os comandos

```
sgt-sixteen
sgt-unruly
sgt-twiddle
sgt-tracks
sgt-galaxies
sgt-lightup
sgt-loopy
sgt-bridges
sgt-untangle
gnome-sudoku
sgt-flip
sgt-fifteen
sgt-pattern
sgt-palisade
sgt-guess
sgt-inertia
sgt-mines
sgt-slant
sgt-towers
sgt-rect
sgt-launcher
sgt-pearl
sgt-map
sgt-tents
sgt-net
sgt-signpost
sgt-solo
user@user-VirtualBox:~$
```

Quem sou eu?

```
user@user-VirtualBox:~$ whoami
user
user@user-VirtualBox:~$ pwd
/home/user
user@user-VirtualBox:~$
```

Arquivo passwd

```
user@user-VirtualBox:~$ cat /etc/passwd
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
uucp:x:10:10:uucp:/var/spool/uucp:/usr/sbin/nologin
proxy:x:13:13:proxy:/bin:/usr/sbin/nologin
www-data:x:33:33:www-data:/var/www:/usr/sbin/nologin
backup:x:34:34:backup:/var/backups:/usr/sbin/nologin
list:x:38:38:Mailing List Manager:/var/list:/usr/sbin/nologin
irc:x:39:39:ircd:/var/run/ircd:/usr/sbin/nologin
gnats:x:41:41:Gnats Bug-Reporting System (admin):/var/lib/gnats:/usr/sbin/n
ologin
nobody:x:65534:65534:nobody:/nonexistent:/usr/sbin/nologin
systemd-network:x:100:102:systemd Network Management,,,:/run/systemd:/usr/s
bin/nologin
systemd-resolve:x:101:103:systemd Resolver,,,:/run/systemd:/usr/sbin/nologi
n
```

Comando id

```
user@user-VirtualBox:~$ id
uid=1000(user) gid=1000(user) groups=1000(user),4(adm),24(cdrom),27(sudo),3
0(dip),46(plugdev),121(lpadmin),131(lxd),132(sambashare)
user@user-VirtualBox:~$
```

Alterando senha

```
user@user-VirtualBox:~$ passwd
Changing password for user.
Current password:
New password:
Retype new password:
```

Comando free

```
user@user-VirtualBox:~$ free
              total        used        free      shared  buff/cache   availab
le
Mem:        2479412      514256     1166196        8392      798960       17976
52
Swap:       2440188           0     2440188
user@user-VirtualBox:~$
```

Comando uname

```
user@user-VirtualBox:~$ uname -s
Linux
user@user-VirtualBox:~$ uname -r
5.11.0-41-generic
user@user-VirtualBox:~$ uname -m
x86_64
user@user-VirtualBox:~$ uname -n
user-VirtualBox
user@user-VirtualBox:~$ uname -a
Linux user-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
user@user-VirtualBox:~$
```

Comando uptime

```
user@user-VirtualBox:~$ uptime
 22:57:39 up  2:05,  1 user,  load average: 0,17, 0,09, 0,08
user@user-VirtualBox:~$
```

Verificação de versão

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

Comando w

```
user@user-VirtualBox:~$ w
 23:01:11 up  2:09,  1 user,  load average: 0,00, 0,04, 0,06
USER     TTY      FROM             LOGIN@   IDLE   JCPU   PCPU WHAT
user     tty7     :0               20:53    2:08m 43.56s  0.64s xfce4-sessio
user@user-VirtualBox:~$
```

Lista de arquivos que contenham o texto dado

```
user@user-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
/usr/share/bash-completion/completions/gpasswd
/usr/share/bash-completion/completions/grub-mkpasswd-pbkdf2
/usr/share/bash-completion/completions/htpasswd
/usr/share/bash-completion/completions/ldappasswd
/usr/share/bash-completion/completions/passwd
/usr/share/bash-completion/completions/smbpasswd
/usr/share/doc/base-passwd
/usr/share/doc/passwd
/usr/share/doc/base-passwd/README
/usr/share/doc/base-passwd/changelog.gz
```

Comando witch

```
user@user-VirtualBox:~$ which ls
/usr/bin/ls
user@user-VirtualBox:~$
```

Comando whatis

```
user@user-VirtualBox:~$ whatis clear
clear (1)              - clear the terminal screen
user@user-VirtualBox:~$
```

Verificar quem está logado

```
user@user-VirtualBox:~$ who
user      tty7          2021-12-08 20:53 (:0)
user@user-VirtualBox:~$
```

Múltiplos Comandos

```
user@user-VirtualBox:~$ hostname; date; ls;
user-VirtualBox
qua 08 dez 2021 23:05:25 -03
Desktop     Downloads  Origem     Public     Videos
Documents  Music      Pictures  Templates
user@user-VirtualBox:~$
```

Visualizando os processos em execução

```
user@user-VirtualBox:~$ ps -aef
UID         PID    PPID  C STIME TTY          TIME CMD
root          1       0  0 20:52 ?        00:00:02 /sbin/init splash
root          2       0  0 20:52 ?        00:00:00 [kthreadd]
root          3       2  0 20:52 ?        00:00:00 [rcu_gp]
root          4       2  0 20:52 ?        00:00:00 [rcu_par_gp]
root          6       2  0 20:52 ?        00:00:00 [kworker/0:0H-kblockd]
root          9       2  0 20:52 ?        00:00:00 [mm_percpu_wq]
root         10       2  0 20:52 ?        00:00:00 [rcu_tasks_rude_]
root         11       2  0 20:52 ?        00:00:00 [rcu_tasks_trace]
root         12       2  0 20:52 ?        00:00:00 [ksoftirqd/0]
root         13       2  0 20:52 ?        00:00:00 [rcu_sched]
root         14       2  0 20:52 ?        00:00:00 [migration/0]
root         15       2  0 20:52 ?        00:00:00 [idle_inject/0]
root         16       2  0 20:52 ?        00:00:00 [cpuhp/0]
root         17       2  0 20:52 ?        00:00:00 [cpuhp/1]
root         18       2  0 20:52 ?        00:00:00 [idle_inject/1]
root         19       2  0 20:52 ?        00:00:00 [migration/1]
root         20       2  0 20:52 ?        00:00:00 [ksoftirqd/1]
root         22       2  0 20:52 ?        00:00:00 [kworker/1:0H-events_high
root         23       2  0 20:52 ?        00:00:00 [kdevtmpfs]
root         24       2  0 20:52 ?        00:00:00 [netns]
root         25       2  0 20:52 ?        00:00:00 [inet_frag_wq]
root         26       2  0 20:52 ?        00:00:00 [kauditd]
root         27       2  0 20:52 ?        00:00:00 [khungtaskd]
root         28       2  0 20:52 ?        00:00:00 [oom_reaper]
root         29       2  0 20:52 ?        00:00:00 [writeback]
root         30       2  0 20:52 ?        00:00:00 [kcompactd0]
root         31       2  0 20:52 ?        00:00:00 [ksmd]
root         32       2  0 20:52 ?        00:00:00 [khugepaged]
```

Visualizando os processos em execução de um usuário específico

```
user@user-VirtualBox:~$ ps -u user
  PID TTY          TIME CMD
  904 ?        00:00:00 systemd
  905 ?        00:00:00 (sd-pam)
  910 ?        00:00:00 pulseaudio
  913 ?        00:00:00 gnome-keyring-d
  916 ?        00:00:00 xfce4-session
  918 ?        00:00:02 dbus-daemon
 1002 ?        00:00:00 VBoxClient
 1003 ?        00:00:00 VBoxClient
 1014 ?        00:00:00 VBoxClient
 1015 ?        00:00:00 VBoxClient
 1019 ?        00:00:00 VBoxClient
 1021 ?        00:00:12 VBoxClient
 1026 ?        00:00:00 VBoxClient
 1027 ?        00:00:00 VBoxClient
 1035 ?        00:00:00 ssh-agent
 1053 ?        00:00:00 at-spi-bus-laun
 1056 ?        00:00:00 gvfsd
 1061 ?        00:00:00 gvfsd-fuse
 1065 ?        00:00:00 dbus-daemon
 1073 ?        00:00:00 xfconfd
 1079 ?        00:00:00 at-spi2-registr
 1084 ?        00:00:00 xfce4-screensav
 1092 ?        00:00:11 xfwm4
 1104 ?        00:00:01 xfsettingsd
 1105 ?        00:00:02 xfce4-panel
 1123 ?        00:00:01 panel-1-whisker
 1124 ?        00:00:00 panel-5-systray
 1125 ?        00:00:00 panel-6-notific
```

Lista de Processos Ordenada pelo consumo de CPU

```
user@user-VirtualBox:~$ ps -aef -r | head -5
    PID TTY      STAT    TIME COMMAND
   1818 pts/0    R+      0:00 ps -aef -r SHELL=/bin/bash SESSION_MANAGER=lo
/user-VirtualBox:@/tmp/.ICE-unix/916,unix/user-VirtualBox:/tmp/.ICE-unix/9
WINDOWID=73400323 QT_ACCESSIBILITY=1 COLORTERM=truecolor XDG_CONFIG_DIRS=/
/xdg/xdg-xubuntu:/etc/xdg:/etc/xdg XDG_SESSION_PATH=/org/freedesktop/Displ
anager/Session0 XDG_MENU_PREFIX=xfce- CLUTTER_BACKEND=x11 LANGUAGE=en_US L
DDRESS=pt_BR.UTF-8 LC_NAME=pt_BR.UTF-8 SSH_AUTH_SOCK=/run/user/1000/keyrin
sh DESKTOP_SESSION=xubuntu LC_MONETARY=pt_BR.UTF-8 SSH_AGENT_PID=1035 XDG_
T=seat0 PWD=/home/user LOGNAME=user XDG_SESSION_DESKTOP=xubuntu QT_QPA_PLA
RMTHEME=gtk2 XDG_SESSION_TYPE=x11 PANEL_GDK_CORE_DEVICE_EVENTS=0 GPG_AGENT
FO=/run/user/1000/gnupg/S.gpg-agent:0:1 XAUTHORITY=/home/user/.Xauthority
_GREETER_DATA_DIR=/var/lib/lightdm-data/user GDM_LANG=en_US HOME=/home/use
C_PAPER=pt_BR.UTF-8 LANG=en_US.UTF-8 LS_COLORS=rs=0:di=01;34:ln=01;36:mh=0
i=40;33:so=01;35:do=01;35:bd=40;33;01:cd=40;33;01:or=40;31;01:mi=00:su=37;
sg=30;43:ca=30;41:tw=30;42:ow=34;42:st=37;44:ex=01;32:*.tar=01;31:*.tgz=01
:*.arc=01;31:*.arj=01;31:*.taz=01;31:*.lha=01;31:*.lz4=01;31:*.lzh=01;31:*
ma=01;31:*.tlz=01;31:*.txz=01;31:*.tzo=01;31:*.t7z=01;31:*.zip=01;31:*.z=0
1:*.dz=01;31:*.gz=01;31:*.lrz=01;31:*.lz=01;31:*.lzo=01;31:*.xz=01;31:*.zs
1;31:*.tzst=01;31:*.bz2=01;31:*.bz=01;31:*.tbz=01;31:*.tbz2=01;31:*.tz=01;
*.deb=01;31:*.rpm=01;31:*.jar=01;31:*.war=01;31:*.ear=01;31:*.sar=01;31:*.
=01;31:*.alz=01;31:*.ace=01;31:*.zoo=01;31:*.cpio=01;31:*.7z=01;31:*.rz=01
:*.cab=01;31:*.wim=01;31:*.swm=01;31:*.dwm=01;31:*.esd=01;31:*.jpg=01;35:*
eg=01;35:*.mjpg=01;35:*.mjpeg=01;35:*.gif=01;35:*.bmp=01;35:*.pbm=01;35:*.
=01;35:*.ppm=01;35:*.tga=01;35:*.xbm=01;35:*.xpm=01;35:*.tif=01;35:*.tiff=
35:*.png=01;35:*.svg=01;35:*.svgz=01;35:*.mng=01;35:*.pcx=01;35:*.mov=01;3
.mpg=01;35:*.mpeg=01;35:*.m2v=01;35:*.mkv=01;35:*.webm=01;35:*.ogm=01;35:*
4=01;35:*.m4v=01;35:*.mp4v=01;35:*.vob=01;35:*.qt=01;35:*.nuv=01;35:*.wmv=
35:*.asf=01;35:*.rm=01;35:*.rmvb=01;35:*.flc=01;35:*.avi=01;35:*.fli=01;35
```

Lista de Processos que mais consomem memória

```
user@user-VirtualBox:~$ ps -aef -m | head -5
UID          PID    PPID  C STIME TTY          TIME CMD
root           1       0  0 20:52 ?        00:00:02 /sbin/init splash
root           -       -  0 20:52 -        00:00:02 -
root           2       0  0 20:52 ?        00:00:00 [kthreadd]
root           -       -  0 20:52 -        00:00:00 -
user@user-VirtualBox:~$ ps -aef -r | head -5
```

Informações de um processo específo

```
user@user-VirtualBox:~$ ps -aef | grep firefox
user        1821    1374  0 23:29 pts/0    00:00:00 grep --color=auto firefox
user@user-VirtualBox:~$
```

Comandos em execução em formato de árvore

```
user@user-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───4*[dbus]
        ├─dbus-daemon
        ├─gnome-keyring-d───3*[{gnome-keyring-d}]
        ├─irqbalance───{irqbalance}
        ├─2*[kerneloops]
        ├─lightdm─┬─Xorg───9*[{Xorg}]
        │         └─lightdm─┬─xfce4-session─┬─Thunar───2*[{Thunar}]
        │                                   ├─applet.py
        │                                   ├─blueman-applet───3*[{blueman-a+
        │                                   ├─nm-applet───3*[{nm-applet}]
        │                                   ├─polkit-gnome-au───2*[{polkit-g+
        │                                   ├─ssh-agent
        │                                   ├─update-notifier───3*[{update-n+
        │                                   ├─xfce4-panel─┬─panel-1-whisker─+
++
        │         │         │               │            ├─panel-10-pulsea─+
++
```

Comando top

```
user@user-VirtualBox:~$ top

top - 23:33:55 up  2:41,  1 user,  load average: 0,12, 0,10, 0,02
top - 23:34:04 up  2:41,  1 user,  load average: 0,32, 0,14, 0,04
top - 23:34:06 up  2:41,  1 user,  load average: 0,32, 0,14, 0,04
top - 23:34:07 up  2:41,  1 user,  load average: 0,32, 0,14, 0,04
top - 23:34:09 up  2:41,  1 user,  load average: 0,32, 0,14, 0,04
top - 23:34:13 up  2:42,  1 user,  load average: 0,30, 0,14, 0,04
Tasks: 168 total,   1 running, 167 sleeping,   0 stopped,   0 zombie
%Cpu(s):  1,2 us,  0,3 sy,  0,0 ni, 98,2 id,  0,0 wa,  0,0 hi,  0,3 si,  0,0
MiB Mem :   2421,3 total,   1126,5 free,    503,0 used,    791,8 buff/cache
MiB Swap:   2383,0 total,   2383,0 free,      0,0 used.   1752,9 avail Mem

   PID USER      PR  NI    VIRT    RES    SHR S  %CPU  %MEM     TIME+
   780 root      20   0  874596  87448  43920 S   1,3   3,5   0:49.46
  1363 user      20   0  397548  39076  30556 S   1,3   1,6   0:17.03
   764 root      20   0  305760   2588   2220 S   0,3   0,1   0:01.69
   918 user      20   0    7828   5060   3912 S   0,3   0,2   0:02.95
  1092 user      20   0  975368  84604  63944 S   0,3   3,4   0:11.49
  1480 root      20   0       0      0      0 I   0,3   0,0   0:03.75
  1826 user      20   0   22200   3796   3280 R   0,3   0,2   0:00.28
     1 root      20   0  167188  11048   8244 S   0,0   0,4   0:25.39
     2 root      20   0       0      0      0 S   0,0   0,0   0:00.00
     3 root       0 -20       0      0      0 I   0,0   0,0   0:00.00
     4 root       0 -20       0      0      0 I   0,0   0,0   0:00.00
     6 root       0 -20       0      0      0 I   0,0   0,0   0:00.00
     9 root       0 -20       0      0      0 I   0,0   0,0   0:00.00
```

Listando todos os sinais com comando

```
user@user-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
user@user-VirtualBox:~$
```

Controlando Processos

```
user@user-VirtualBox:~$ ps -u user
    PID TTY          TIME CMD
    904 ?        00:00:00 systemd
    905 ?        00:00:00 (sd-pam)
    910 ?        00:00:00 pulseaudio
    913 ?        00:00:00 gnome-keyring-d
    916 ?        00:00:00 xfce4-session
    918 ?        00:00:03 dbus-daemon
   1002 ?        00:00:00 VBoxClient
   1003 ?        00:00:00 VBoxClient
   1014 ?        00:00:00 VBoxClient
   1015 ?        00:00:00 VBoxClient
   1019 ?        00:00:00 VBoxClient
   1021 ?        00:00:14 VBoxClient
   1026 ?        00:00:00 VBoxClient
   1027 ?        00:00:00 VBoxClient
   1035 ?        00:00:00 ssh-agent
   1053 ?        00:00:00 at-spi-bus-laun
   1056 ?        00:00:00 gvfsd
   1061 ?        00:00:00 gvfsd-fuse
   1065 ?        00:00:00 dbus-daemon
   1073 ?        00:00:00 xfconfd
   1079 ?        00:00:00 at-spi2-registr
   1084 ?        00:00:00 xfce4-screensav
   1092 ?        00:00:11 xfwm4
   1104 ?        00:00:01 xfsettingsd
   1105 ?        00:00:02 xfce4-panel
   1123 ?        00:00:01 panel-1-whisker
   1124 ?        00:00:00 panel-5-systray
   1125 ?        00:00:00 panel-6-notific
```

```
user@user-VirtualBox:~$ ps u
USER       PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
user      1374  0.0  0.2  21724  5608 pts/0    Ss   20:55   0:00 bash
user      1842  0.0  0.1  21840  3304 pts/0    R+   23:42   0:00 ps u
user@user-VirtualBox:~$
```

```
user@user-VirtualBox:~$ ps u
USER       PID %CPU %MEM    VSZ   RSS TTY      STAT START   TIME COMMAND
user      1374  0.0  0.2  21724  5608 pts/0    Ss   20:55   0:00 bash
user      1844  0.0  0.1  21592  3396 pts/0    T    23:43   0:00 top
user      1845  0.0  0.1  21840  3384 pts/0    R+   23:43   0:00 ps u
user@user-VirtualBox:~$ jobs -l
[1]+  1844 Stopped (signal)        top
user@user-VirtualBox:~$
```

```
user@user-VirtualBox:~$ ps x --forest
   PID TTY      STAT   TIME COMMAND
   916 ?        Ssl    0:00 xfce4-session
  1035 ?        Ss     0:00  \_ /usr/bin/ssh-agent /usr/bin/im-launch startx
  1092 ?        Sl     0:11  \_ xfwm4 --replace
  1105 ?        Sl     0:02  \_ xfce4-panel
  1123 ?        Sl     0:01  |   \_ /usr/lib/x86_64-linux-gnu/xfce4/panel/wr
  1124 ?        Sl     0:00  |   \_ /usr/lib/x86_64-linux-gnu/xfce4/panel/wr
  1125 ?        Sl     0:00  |   \_ /usr/lib/x86_64-linux-gnu/xfce4/panel/wr
  1126 ?        Sl     0:00  |   \_ /usr/lib/x86_64-linux-gnu/xfce4/panel/wr
  1127 ?        Sl     0:00  |   \_ /usr/lib/x86_64-linux-gnu/xfce4/panel/wr
  1128 ?        Sl     0:00  |   \_ /usr/lib/x86_64-linux-gnu/xfce4/panel/wr
  1129 ?        Sl     0:10  |   \_ /usr/lib/x86_64-linux-gnu/xfce4/panel/wr
  1136 ?        Sl     0:16  \_ Thunar --daemon
  1149 ?        Sl     0:10  \_ xfdesktop
  1171 ?        Sl     0:00  \_ xiccd
  1177 ?        S      0:00  \_ /usr/bin/python3 /usr/share/system-config-pr
  1188 ?        Sl     0:01  \_ /usr/bin/python3 /usr/bin/blueman-applet
  1206 ?        Sl     0:00  \_ nm-applet
  1223 ?        Sl     0:00  \_ /usr/lib/policykit-1-gnome/polkit-gnome-auth
  1239 ?        Sl     0:00  \_ update-notifier
  1363 ?        Sl     0:17 /usr/bin/xfce4-terminal
  1374 pts/0    Ss     0:00  \_ bash
  1844 pts/0    T      0:00      \_ top
  1853 pts/0    R+     0:00      \_ ps x --forest
  1303 ?        Sl     0:00 /usr/bin/python3 /usr/bin/blueman-tray
  1189 ?        Ssl    0:00 xfce4-power-manager
  1104 ?        Ssl    0:01 xfsettingsd
  1026 ?        S      0:00 /usr/bin/VBoxClient --vmsvga
  1027 ?        Sl     0:00  \_ /usr/bin/VBoxClient --vmsvga
  1019 ?        S      0:00 /usr/bin/VBoxClient --draganddrop
```

Listar proprietário e permissões do arquivo

```
user@user-VirtualBox:~$ ls -l
total 36
drwxr-xr-x 2 user user 4096 dez  7 22:27 Desktop
drwxr-xr-x 2 user user 4096 dez  7 22:27 Documents
drwxr-xr-x 2 user user 4096 dez  7 22:27 Downloads
drwxr-xr-x 2 user user 4096 dez  7 22:27 Music
drwxrwxr-x 2 user user 4096 dez  8 19:43 Origem
drwxr-xr-x 2 user user 4096 dez  7 22:27 Pictures
drwxr-xr-x 2 user user 4096 dez  7 22:27 Public
drwxr-xr-x 2 user user 4096 dez  7 22:27 Templates
drwxr-xr-x 2 user user 4096 dez  7 22:27 Videos
user@user-VirtualBox:~$ 
```

Listando usuários do Linux

```
user@user-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
user@user-VirtualBox:~$
```

Listando grupos

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

Uname

```
user@user-VirtualBox:~$ uname -s
Linux
user@user-VirtualBox:~$ uname -n
user-VirtualBox
user@user-VirtualBox:~$ uname -r
5.11.0-41-generic
user@user-VirtualBox:~$ uname -v
#45~20.04.1-Ubuntu SMP Wed Nov 10 10:20:10 UTC 2021
```

Infos sobre processadores

```
user@user-VirtualBox:~$ lscpu
Architecture:                        x86_64
CPU op-mode(s):                      32-bit, 64-bit
Byte Order:                          Little Endian
Address sizes:                       39 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:                           GenuineIntel
CPU family:                          6
Model:                               61
Model name:                          Intel(R) Core(TM) i7-5500U CPU @ 2.40GHz
Stepping:                            4
CPU MHz:                             2394.456
BogoMIPS:                            4788.91
Hypervisor vendor:                   KVM
Virtualization type:                 full
L1d cache:                           64 KiB
L1i cache:                           64 KiB
L2 cache:                            512 KiB
```

Listando dispositivos USB e todos dispositivos PCI

```
user@user-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
user@user-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 Controll
er (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 Contr
oller (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) US
B2 EHCI Controller
00:0d.0 SATA controller: Intel Corporation 82801HM/HEM (ICH8M/ICH8M-E) SATA Cont
roller [AHCI mode] (rev 02)
user@user-VirtualBox:~$
```

Listando dispositivos de bloco

```
user@user-VirtualBox:~$ lsblk
NAME    MAJ:MIN RM   SIZE RO TYPE MOUNTPOINT
sda       8:0    0   150G  0 disk
├─sda1    8:1    0   2,3G  0 part [SWAP]
└─sda2    8:2    0 147,7G  0 part /
sr0      11:0    1  58,3M  0 rom
```

Verificando todas as partições

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

   11        0     59672 sr0
    8        0 157286400 sda
    8        1   2440192 sda1
    8        2 154844160 sda2
user@user-VirtualBox:~$
```

Informações sobre memória

```
user@user-VirtualBox:~$ free
              total        used        free      shared  buff/cache   available
Mem:        2479412      514276     1147996        8392      817140     1795576
Swap:       2440188           0     2440188
user@user-VirtualBox:~$ free -m
              total        used        free      shared  buff/cache   available
Mem:           2421         501        1121           8         797        1753
Swap:          2382           0        2382
user@user-VirtualBox:~$
```

```
user@user-VirtualBox:~$ cat /proc/meminfo
MemTotal:        2479412 kB
MemFree:         1148196 kB
MemAvailable:    1795776 kB
Buffers:           40388 kB
Cached:           720912 kB
SwapCached:            0 kB
Active:           281556 kB
Inactive:         901988 kB
Active(anon):       1264 kB
Inactive(anon):   429372 kB
Active(file):     280292 kB
Inactive(file):   472616 kB
Unevictable:          32 kB
Mlocked:              32 kB
SwapTotal:       2440188 kB
SwapFree:        2440188 kB
Dirty:             10716 kB
Writeback:             0 kB
AnonPages:        422304 kB
Mapped:           157508 kB
Shmem:              8392 kB
KReclaimable:      55840 kB
Slab:              92048 kB
SReclaimable:      55840 kB
SUnreclaim:        36208 kB
KernelStack:        5136 kB
PageTables:        10004 kB
NFS_Unstable:          0 kB
Bounce:                0 kB
WritebackTmp:          0 kB
CommitLimit:     3679892 kB
```

```
user@user-VirtualBox:~$ vmstat -s
      2479412 K total memory
       514024 K used memory
       281560 K active memory
       902156 K inactive memory
      1148216 K free memory
        40388 K buffer memory
       776784 K swap cache
      2440188 K total swap
            0 K used swap
      2440188 K free swap
        14875 non-nice user cpu ticks
          846 nice user cpu ticks
         7488 system cpu ticks
      2524557 idle cpu ticks
        21162 IO-wait cpu ticks
            0 IRQ cpu ticks
         5200 softirq cpu ticks
            0 stolen cpu ticks
       748767 pages paged in
        24016 pages paged out
            0 pages swapped in
            0 pages swapped out
      2956541 interrupts
      2453189 CPU context switches
   1639007530 boot time
         2180 forks
user@user-VirtualBox:~$
```

Memória disponível

```
user@user-VirtualBox:~$ lsmem
RANGE                                      SIZE  STATE REMOVABLE BLOCK
0x0000000000000000-0x000000009fffffff      2,5G online       yes  0-19

Memory block size:       128M
Total online memory:     2,5G
Total offline memory:      0B
user@user-VirtualBox:~$
```

Comando para ejetar CDROM's ou DVD's

```
user@user-VirtualBox:~$ eject
user@user-VirtualBox:~$
```