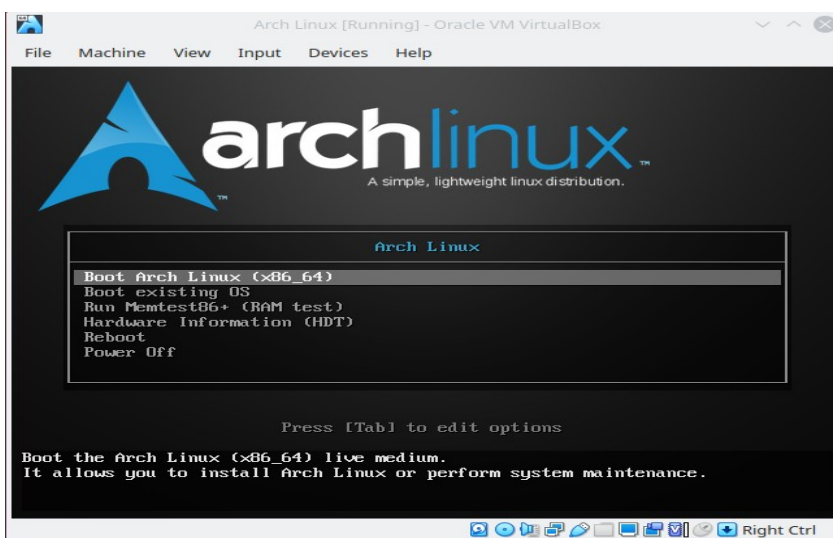


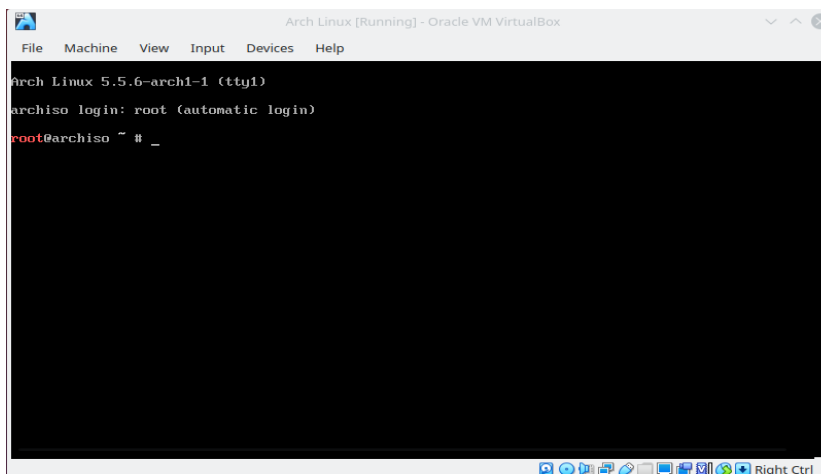
Universidade Federal do Rio de Janeiro (UFRJ)  
Processo Seletivo do Grupo de Resposta a Incidentes de Segurança (GRIS) - 2020  
Tag de Linux  
Avaliador: João de Lacerda  
Candidato: Felipe de Jesus

## Relatório de instalação de Arch Linux em Máquina Virtual

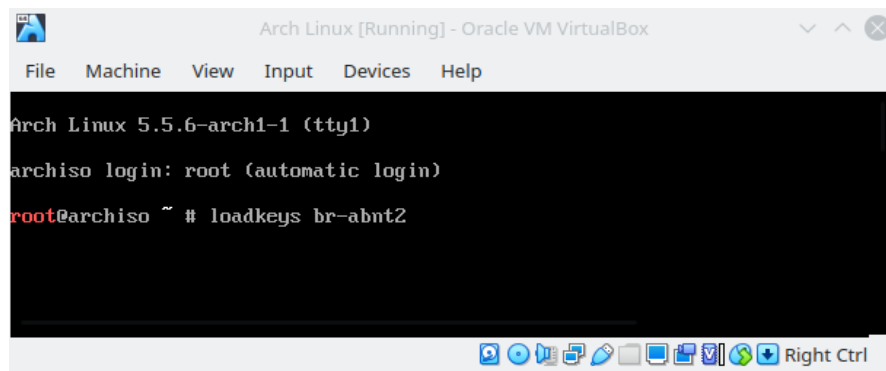
O primeiro passo é baixar ISO mais recente do site(<https://www.archlinux.org/download/>), em seguida temos que configurar uma máquina virtual para executar essa ISO. Estarei utilizando o Virtual Box.



Iniciando pela primeira opção temos a tela inicial do sistema

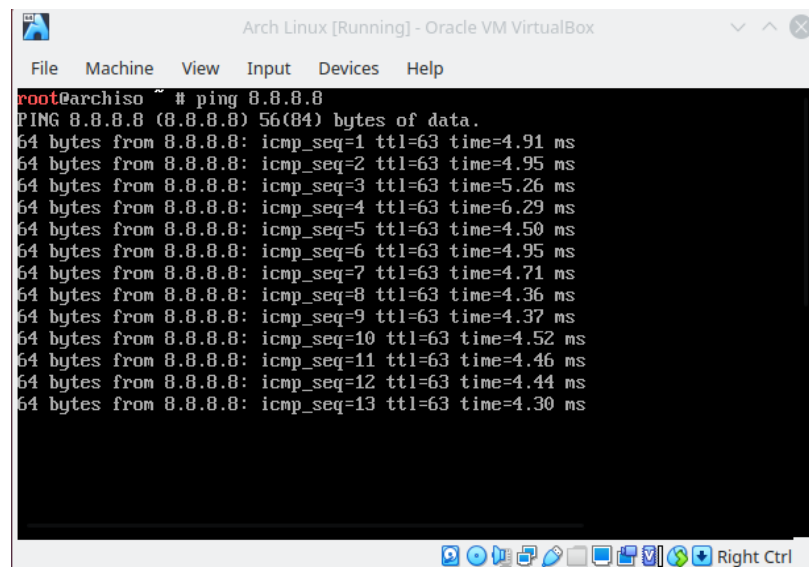


Configurar teclado para português do Brasil



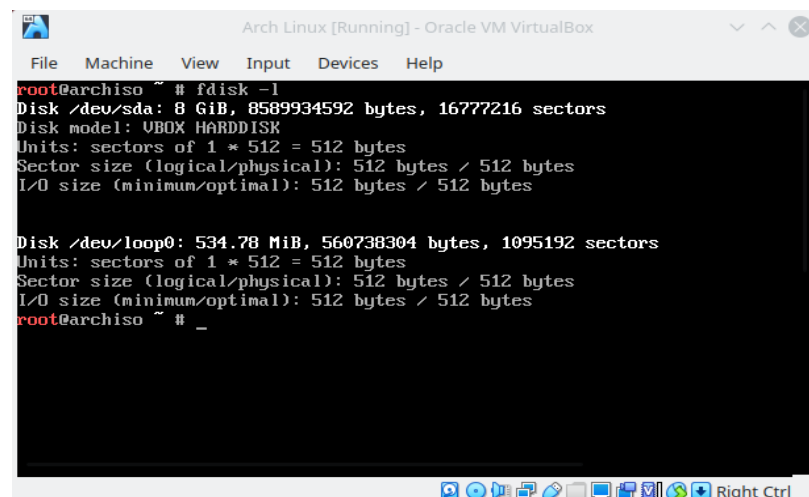
```
Arch Linux 5.5.6-arch1-1 (tty1)
archiso login: root (automatic login)
root@archiso ~ # loadkeys br-abnt2
```

Verificar se internet está funcionando. Para isso podemos usar o comando “ping”. Logo, fazendo ping com o DNS do google(8.8.8.8) podemos perceber que a internet está funcionando normalmente.



```
root@archiso ~ # ping 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data.
64 bytes from 8.8.8.8: icmp_seq=1 ttl=63 time=4.91 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=63 time=4.95 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=63 time=5.26 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=63 time=6.29 ms
64 bytes from 8.8.8.8: icmp_seq=5 ttl=63 time=4.50 ms
64 bytes from 8.8.8.8: icmp_seq=6 ttl=63 time=4.95 ms
64 bytes from 8.8.8.8: icmp_seq=7 ttl=63 time=4.71 ms
64 bytes from 8.8.8.8: icmp_seq=8 ttl=63 time=4.36 ms
64 bytes from 8.8.8.8: icmp_seq=9 ttl=63 time=4.37 ms
64 bytes from 8.8.8.8: icmp_seq=10 ttl=63 time=4.52 ms
64 bytes from 8.8.8.8: icmp_seq=11 ttl=63 time=4.46 ms
64 bytes from 8.8.8.8: icmp_seq=12 ttl=63 time=4.44 ms
64 bytes from 8.8.8.8: icmp_seq=13 ttl=63 time=4.30 ms
```

Rodando o comando fdisk -l para ver os discos e partições temos:



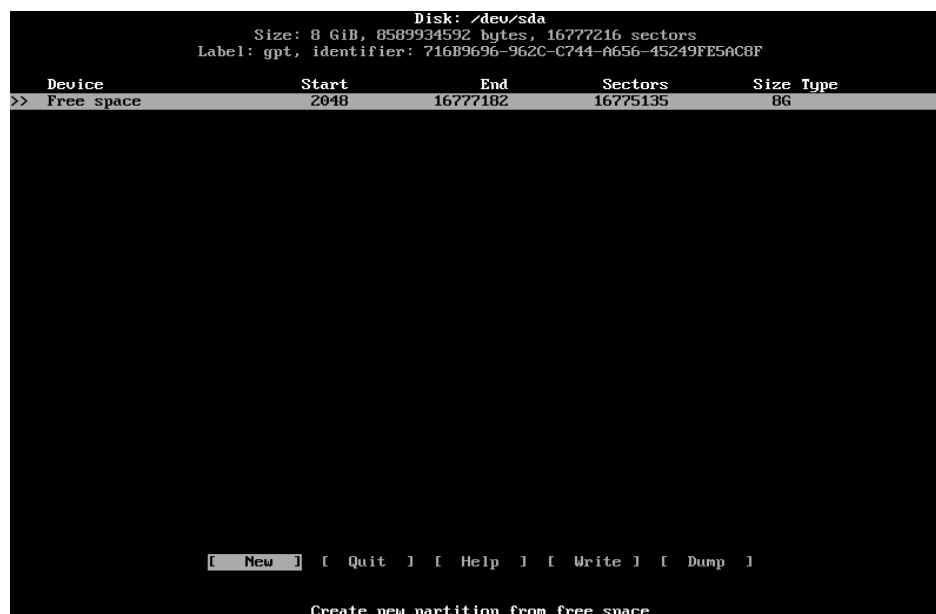
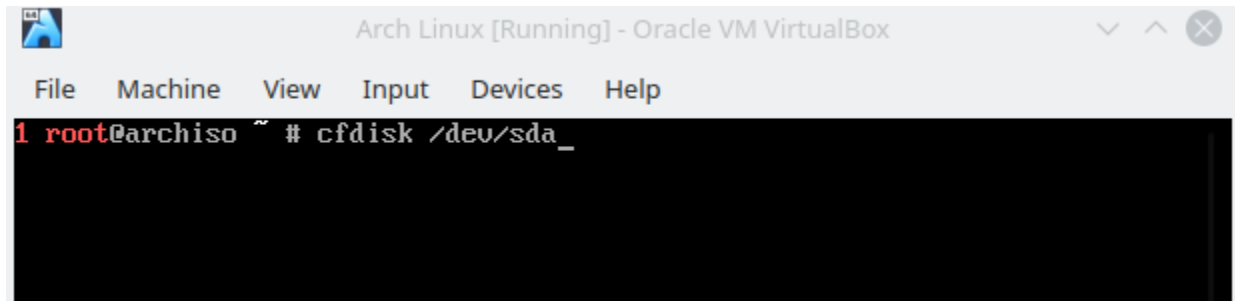
```
root@archiso ~ # fdisk -l
Disk /dev/sda: 8 GiB, 8589934592 bytes, 16777216 sectors
Disk model: VBOX HARDISK
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes

Disk /dev/loop0: 534.78 MiB, 560738304 bytes, 1095192 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
root@archiso ~ # _
```

O próximo passo é criar as partições para o sistema. Vamos criar três partições inicialmente. Neste caso temos:

- /dev/sda1 (500MB para o /boot/efi) --> Boot UEFI
- /dev/sda2 (2GB para swap)
- /dev/sda3 (todo o resto para /)

Esta criação de partições pode ser vista no fluxo de imagens abaixo ...



```

Disk: /dev/sda
Size: 8 GiB, 8589934592 bytes, 16777216 sectors
Label: gpt, identifier: 716B9696-962C-C744-A656-45249FE5ACBF

```

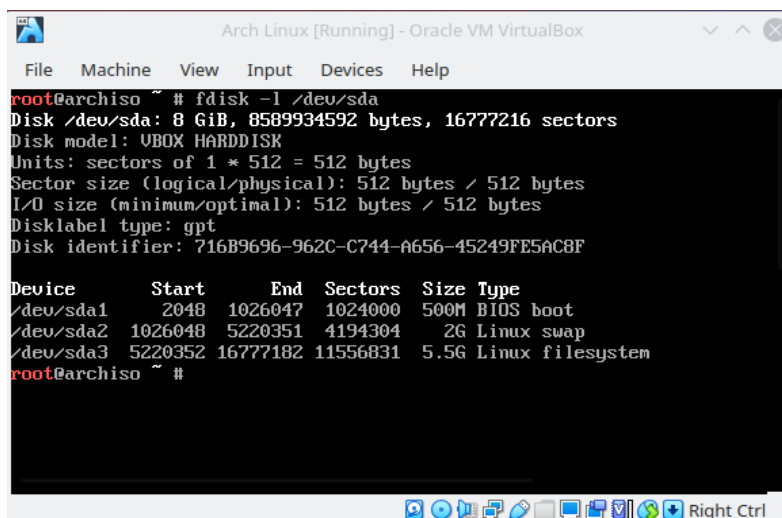
Device	Start	End	Sectors	Size	Type
/dev/sda1	2048	1026047	1024000	500M	BIOS boot
/dev/sda2	1026048	5220351	4194304	2G	Linux swap
/dev/sda3	5220352	16777182	11556831	5.5G	Linux filesystem

```

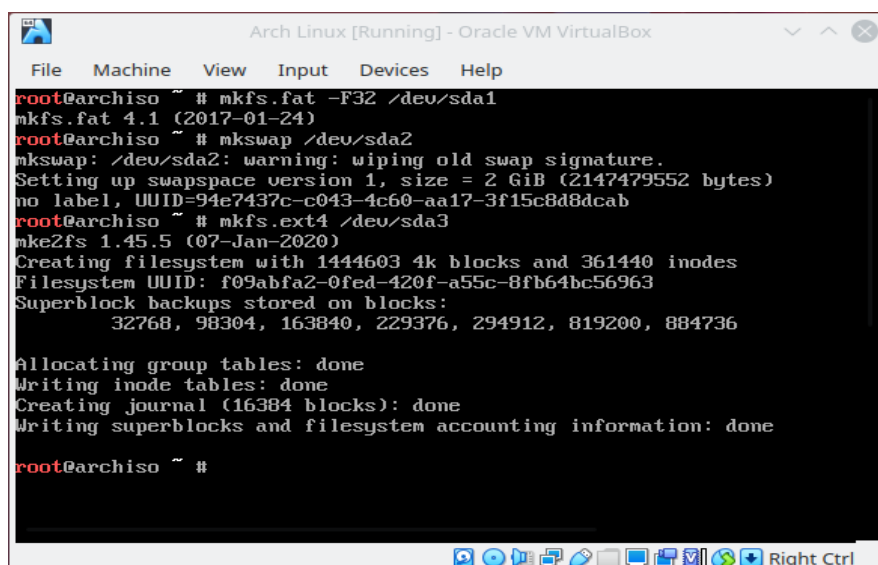
Partition UUID: 4185a09d-49f0-314c-b5d5-e039480eb180
Partition type: BIOS boot (21686148-6449-6E6F-744E-656564454649)
[ Delete ] [ Resize ] [ Quit ] [ Type ] [ Help ] [ Write ] [ Dump ]
Quit program without writing changes

```

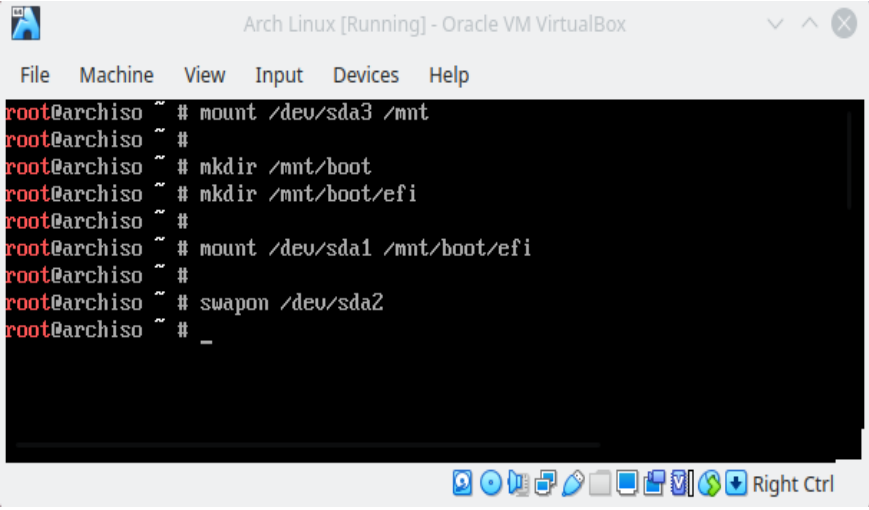
Ao término podemos ver o resultado com o comando na imagem abaixo:



O próximo passo é formatar as partições



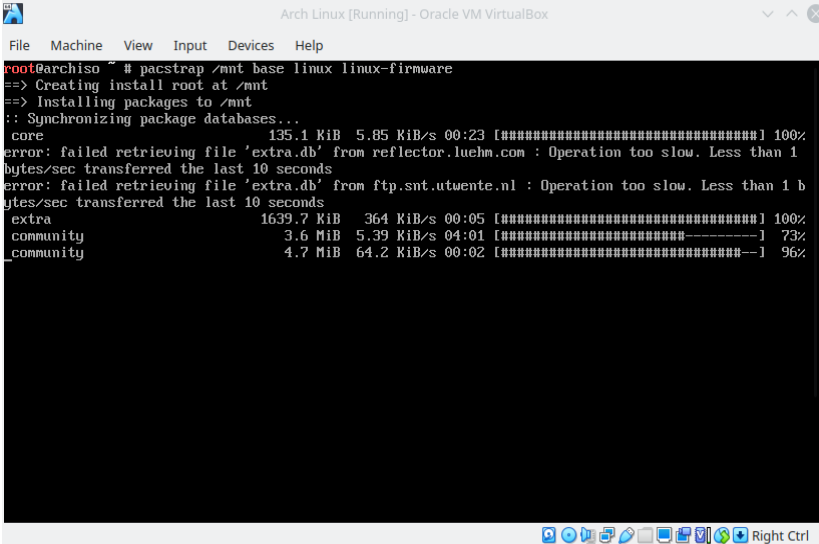
Montar partições no sistema:



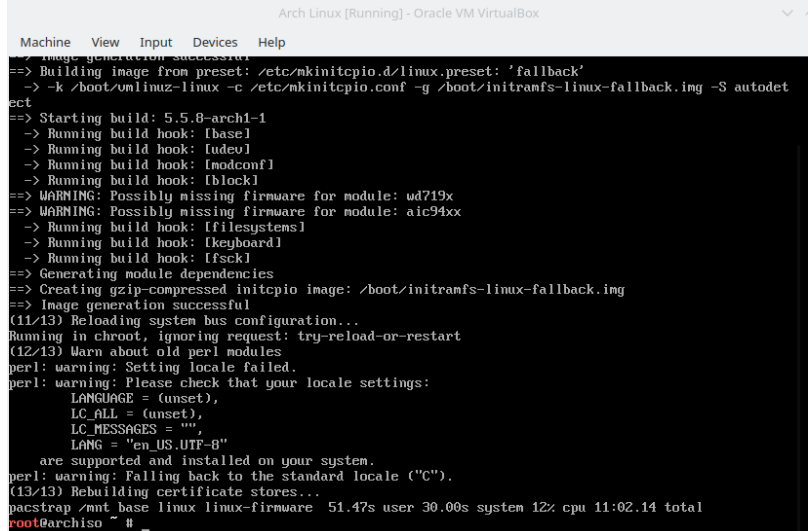
```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
root@archiso ~ # mount /dev/sda3 /mnt
root@archiso ~ #
root@archiso ~ # mkdir /mnt/boot
root@archiso ~ # mkdir /mnt/boot/efi
root@archiso ~ #
root@archiso ~ # mount /dev/sda1 /mnt/boot/efi
root@archiso ~ #
root@archiso ~ # swapon /dev/sda2
root@archiso ~ #
root@archiso ~ # _
```

Instalação dos pacotes da base do Arch na partição ext4 com o comando:

`pacstrap /mnt base linux linux-firmware`

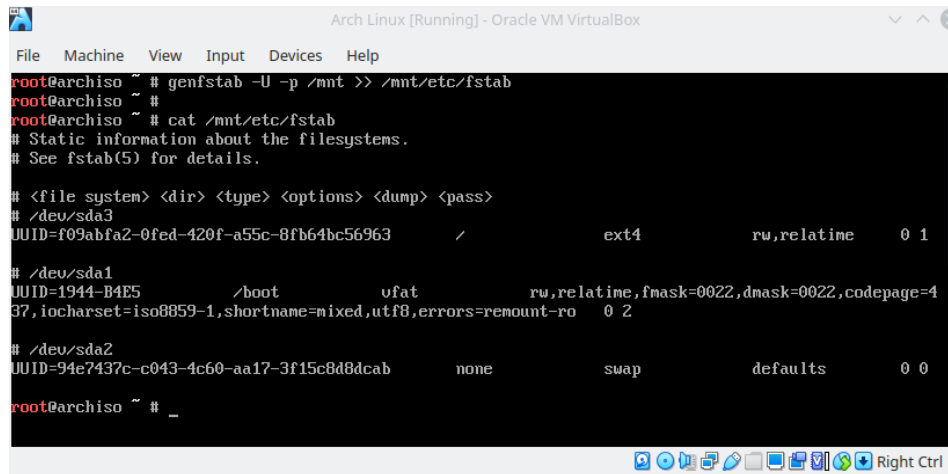


```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
root@archiso ~ # pacstrap /mnt base linux linux-firmware
==> Creating install root at /mnt
==> Installing packages to /mnt
:: Synchronizing package databases...
core                 135.1 KiB   5.85 KiB/s 00:23 [#####] 100%
error: failed retrieving file 'extra.db' from reflector.luehm.com : Operation too slow. Less than 1
bytes/sec transferred the last 10 seconds
error: failed retrieving file 'extra.db' from ftp.snt.utwente.nl : Operation too slow. Less than 1 b
ytes/sec transferred the last 10 seconds
extra                1639.7 KiB   364 KiB/s 00:05 [#####] 100%
community            3.6 MiB    5.39 KiB/s 04:01 [#####] 73%
community            4.7 MiB    64.2 KiB/s 00:02 [#####] 96%
```



```
Arch Linux [Running] - Oracle VM VirtualBox
Machine View Input Devices Help
==> Image generation successful
==> Building image from preset: /etc/mkinitcpio.d/linux.preset: 'fallback'
-> -k /boot/vmlinuz-linux -c /etc/mkinitcpio.conf -g /boot/initramfs-linux-fallback.img -S autodet
ect
==> Starting build: 5.5.8-arch1-1
-> Running build hook: [base]
-> Running build hook: [udev]
-> Running build hook: [modconf]
-> Running build hook: [block]
==> WARNING: Possibly missing firmware for module: wd719x
==> WARNING: Possibly missing firmware for module: aic94xx
-> Running build hook: [filesystems]
-> Running build hook: [keyboard]
-> Running build hook: [fsck]
==> Generating module dependencies
==> Creating gzip-compressed initcpio image: /boot/initramfs-linux-fallback.img
==> Image generation successful
(11/13) Reloading system bus configuration...
Running in chroot, ignoring request: try-reload-or-restart
(12/13) Warn about old perl modules
perl: warning: Setting locale failed.
perl: warning: Please check that your locale settings:
    LANGUAGE = (unset),
    LC_ALL = (unset),
    LC_MESSAGES = "",
    LANG = "en_US.UTF-8"
are supported and installed on your system.
perl: warning: Falling back to the standard locale ("C").
(13/13) Rebuilding certificate stores...
pacstrap /mnt base linux linux-firmware 51.47s user 30.00s system 12% cpu 11:02.14 total
root@archiso ~ # _
```

Gerar tabela FSTAB, com comando: `genfstab -U -p /mnt >> /mnt/etc/fstab`



```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
root@archiso ~ # genfstab -U -p /mnt >> /mnt/etc/fstab
root@archiso ~ #
root@archiso ~ # cat /mnt/etc/fstab
# Static information about the filesystems.
# See fstab(5) for details.

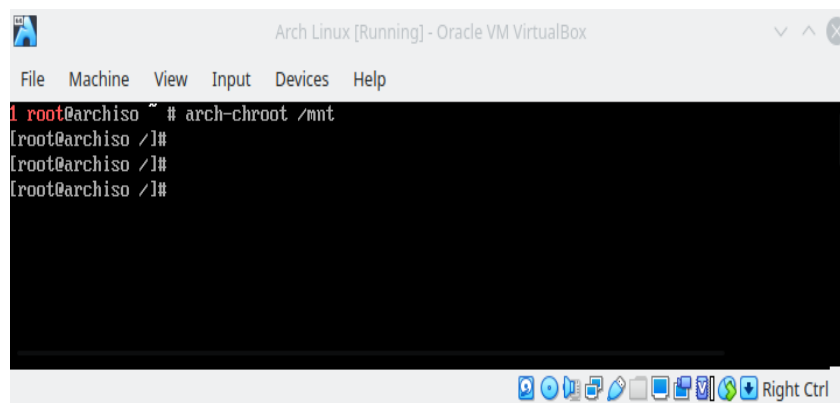
# <file system> <dir> <type> <options> <dump> <pass>
# /dev/sda3
UUID=f09abfa2-0fed-420f-a55c-8fb64bc56963 / ext4 rw,relatime 0 1

# /dev/sda1
UUID=1944-B4E5 /boot ufat rw,relatime,fmask=0022,dmask=0022,codepage=437,iocharset=iso8859-1,shortname=mixed,utf8,errors=remount-ro 0 2

# /dev/sda2
UUID=94e7437c-c043-4c60-aa17-3f15c8d8dcab none swap defaults 0 0

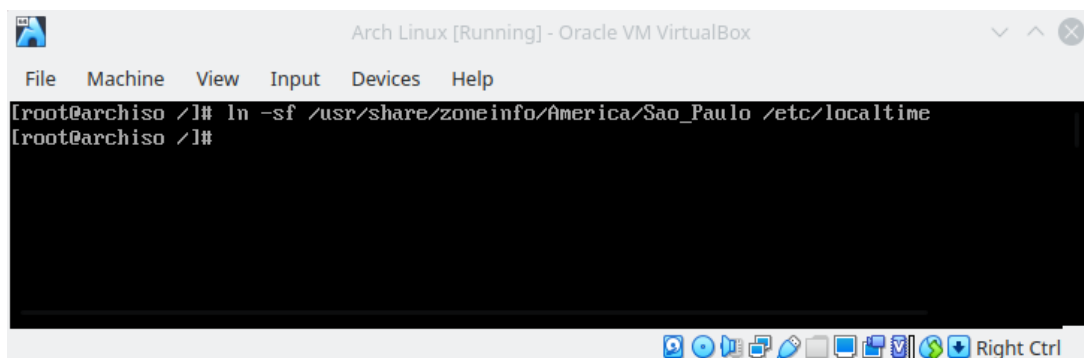
root@archiso ~ # _
```

Agora vamos logar no sistema para fazer alterações internas. Podemos logar com o comando: `arch-chroot /mnt`



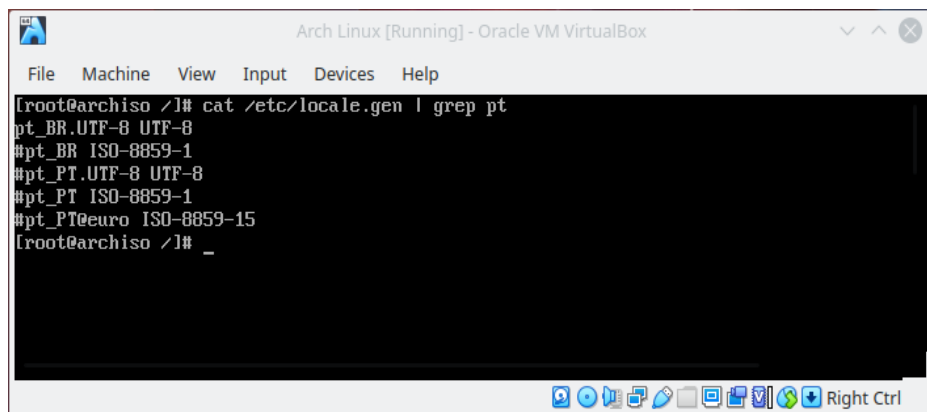
```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
root@archiso ~ # arch-chroot /mnt
[root@archiso /]#
[root@archiso /]#
[root@archiso /]#
```

Alterar data e hora do sistema:



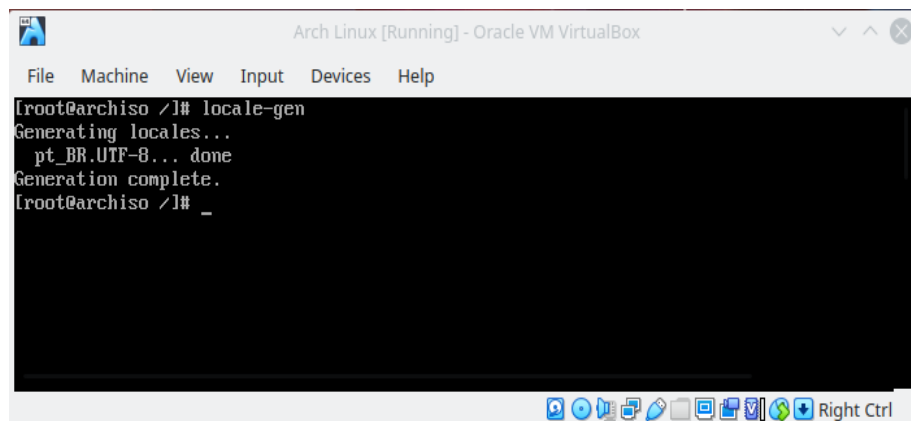
```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
[root@archiso /]# ln -sf /usr/share/zoneinfo/America/Sao_Paulo /etc/localtime
[root@archiso /]#
```

Vamos alterar o idioma do sistema para português brasileiro. Para isso utilizando o nano(editor de texto de terminal) temos que descomentar a linha “`pt_BR.UTF-8 UTF-8`” do arquivo `/etc/locale.gen`. Na primeira linha da imagem abaixo podemos perceber que a linha foi descomentada com sucesso.



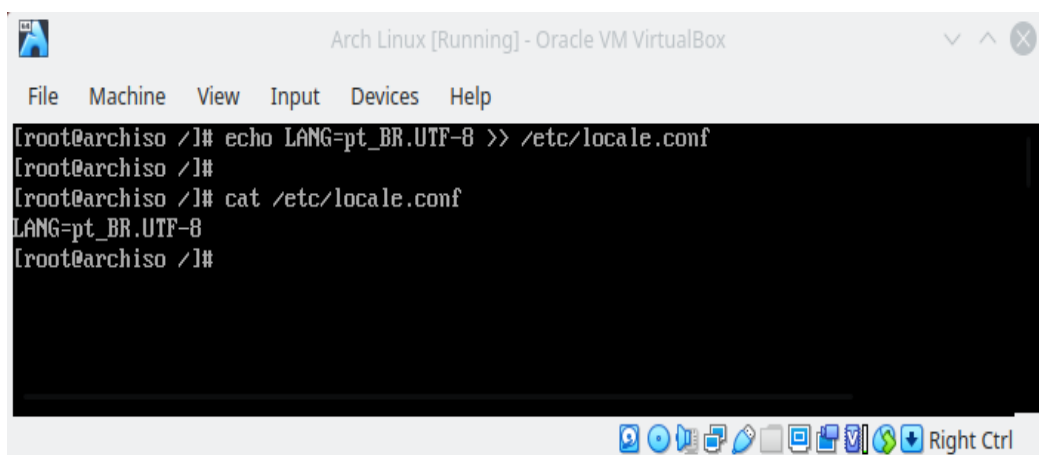
```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
[root@archiso /]# cat /etc/locale.gen | grep pt
pt_BR.UTF-8 UTF-8
#pt_BR ISO-8859-1
#pt_PT.UTF-8 UTF-8
#pt_PT ISO-8859-1
#pt_PT@euro ISO-8859-15
[root@archiso /]# _
```

Quando isso for feito, precisamos rodar o comando abaixo:



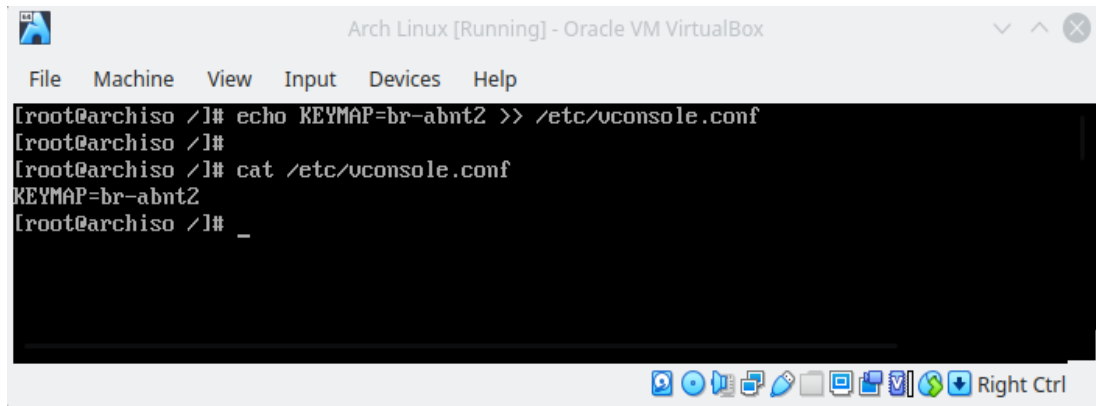
```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
[root@archiso /]# locale-gen
Generating locales...
  pt_BR.UTF-8... done
Generation complete.
[root@archiso /]# _
```

Por fim vamos usar o comando abaixo para configurar a variavel de linguagem em locale.conf:



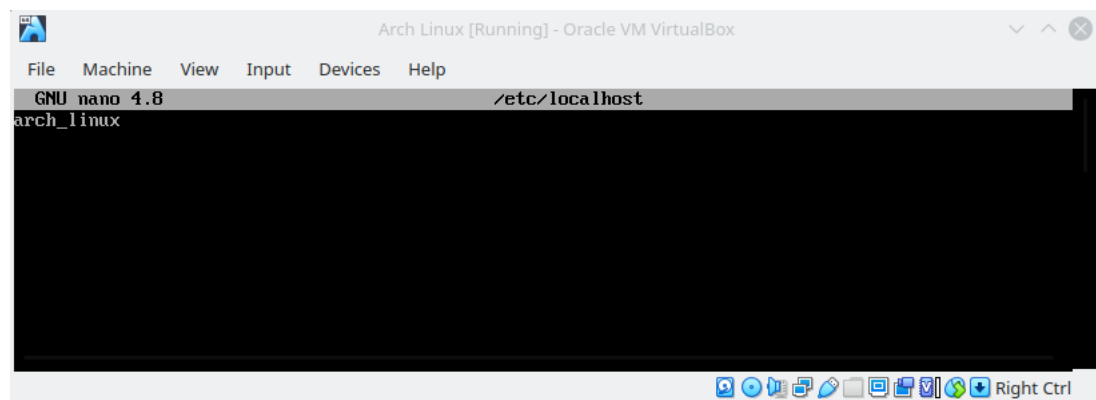
```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
[root@archiso /]# echo LANG=pt_BR.UTF-8 >> /etc/locale.conf
[root@archiso /]#
[root@archiso /]# cat /etc/locale.conf
LANG=pt_BR.UTF-8
[root@archiso /]#
```

Com o comando abaixo vamos configurar o teclado com a forma abnt2 do brasil

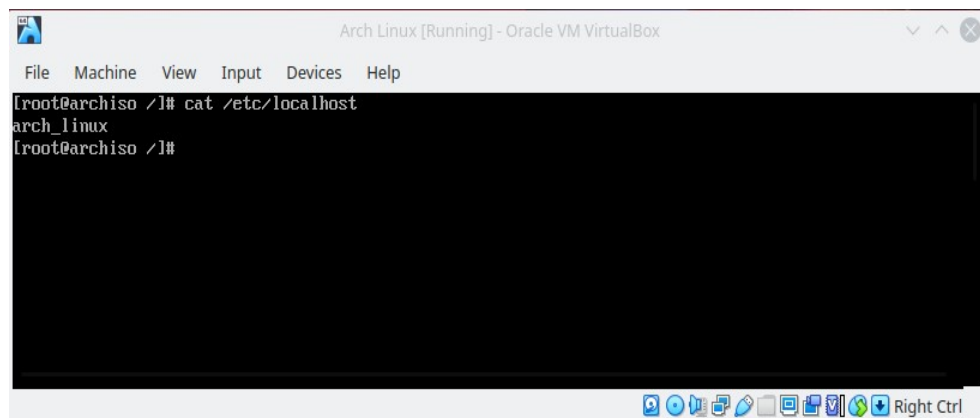


```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
[root@archiso /]# echo KEYMAP=br-abnt2 >> /etc/vconsole.conf
[root@archiso /]#
[root@archiso /]# cat /etc/vconsole.conf
KEYMAP=br-abnt2
[root@archiso /]# _
```

Configurar nome do host(dispositivo) para a rede



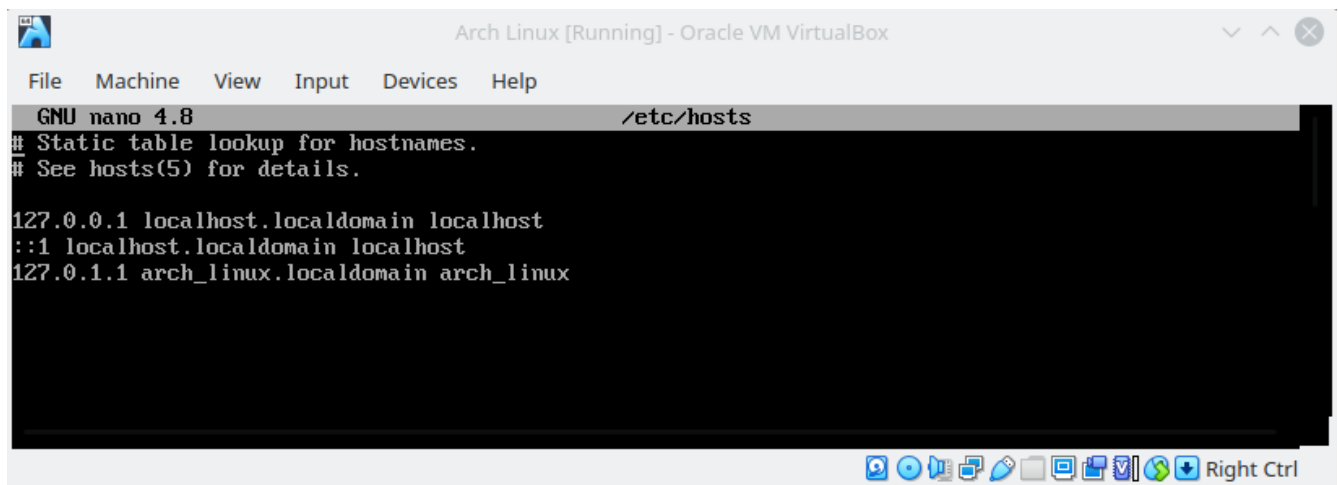
```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
GNU nano 4.8 /etc/localhost
arch_linux
```



```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
[root@archiso /]# cat /etc/localhost
arch_linux
[root@archiso /]#
```

Alterando o arquivo /etc/hosts com o comando nano /etc/hosts temos:



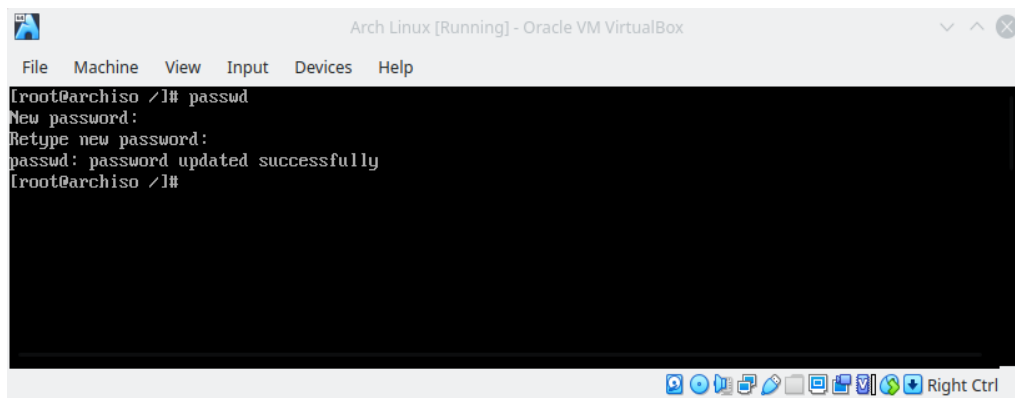


The screenshot shows a terminal window titled "Arch Linux [Running] - Oracle VM VirtualBox". The terminal is running the GNU nano 4.8 editor, editing the file /etc/hosts. The content of the file is as follows:

```
GNU nano 4.8 /etc/hosts
# Static table lookup for hostnames.
# See hosts(5) for details.

127.0.0.1 localhost.localdomain localhost
::1 localhost.localdomain localhost
127.0.1.1 arch_linux.localdomain arch_linux
```

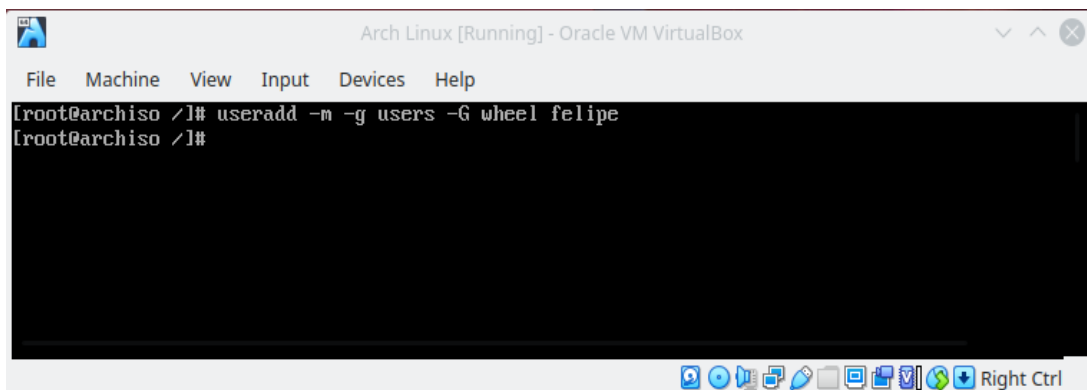
Com o comando *passwd* vamos configurar uma senha para o usuário root



The screenshot shows a terminal window titled "Arch Linux [Running] - Oracle VM VirtualBox". The terminal is running the `passwd` command to set a password for the root user. The output is as follows:

```
[root@archiso /]# passwd
New password:
Retype new password:
passwd: password updated successfully
[root@archiso /]#
```

Agora vamos adicionar um novo usuário ao sistema



The screenshot shows a terminal window titled "Arch Linux [Running] - Oracle VM VirtualBox". The terminal is running the `useradd` command to add a new user named `felipe`. The output is as follows:

```
[root@archiso /]# useradd -m -g users -G wheel felipe
[root@archiso /]#
```

Prosseguindo, vamos instalar alguns pacotes que serão uteis na Pós-instalação do sistema

```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

[root@archiso /]# pacman -S dosfstools os-prober mtools network-manager-applet networkmanager wpa_supplicant wireless_tools dialog sudo
```

```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

Packages (105) adobe-source-code-pro-fonts-2.030ro+1.050it-5 adwaita-icon-theme-3.36.0-1
alsa-lib-1.2.2-1 alsa-topology-conf-1.2.2-2 alsa-ucm-conf-1.2.2-1
at-spi2-atk-2.34.2-1 at-spi2-core-2.36.0-1 atk-2.34.1-1 avahi-0.8+15+ge8a3add0-1
bluez-libs-5.53-1 brotli-1.0.7-3 cairo-1.17.2+17+g52a7c79fd-2
cantarell-fonts-1:0.201-1 colord-1.4.4+9+g1ce26da-1 dconf-0.36.0-1
desktop-file-utils-0.24-2 fontconfig-2:2.13.91+24+g75eadca-2 freetype2-2.10.1-2
fribidi-1.0.9-1 gcr-3.36-1 gdk-pixbuf2-2.40.0-2 glib-networking-2.64.0-1
graphite-1:1.3.13-2 gsettings-desktop-schemas-3.36.0-1
gtk-update-icon-cache-1:3.24.14+9+g429a6287e0-1 gtk3-1:3.24.14+9+g429a6287e0-1
harfbuzz-2.6.4-2 iso-codes-4.4-1 jansson-2.12-1 js60-60.9.0-2 json-glib-1.4.4-1
lcms2-2.9-2 libcanberra-0.30+2+gc0620e4-2 libcups-2.3.1-1 libdaemon-0.14-4
libdatrie-0.2.12-1 libdrm-2.4.100-1 libepoxy-1.5.4-1 libglnd-1.3.1-1
libgudev-233-1 libusb-0.3.4-1 libmm-glib-1.12.8-1 libndp-1.7-1 libnm-1.22.10-1
libnma-1.8.28-1 libnotify-0.7.9-1 libogg-1.3.4-1 libomxil-bellagio-0.9.3-2
libpciaccess-0.16-1 libpgm-5.2.122-5 libpng-1.6.37-1 librsvg-2:2.48.0-1
libsodium-1.0.18-1 libsoup-2.70.0-1 libteam-1.30-1 libthai-0.1.28-1
libtiff-4.1.0-1 libtool-2.4.6+42+gb88ceb5-11 libunwind-1.3.1-1 libvorbis-1.3.6-1
libx11-1.6.9-6 libxau-1.0.9-2 libxcb-1.14-1 libxcomposite-0.4.5-2
libxcursor-1.2.0-1 libxdamage-1.1.5-2 libxdmcp-1.1.3-2 libxext-1.3.4-2
libxfixes-5.0.3-3 libxft-2.3.3-1 libxi-1.7.10-2 libxinerama-1.1.4-2
libxkbcommon-0.10.0-1 libxrandr-1.5.2-2 libxrender-0.9.10-3 libxshmfence-1.3-1
libxst-1.2.3-3 libxft86um-1.1.4-3 llum-libs-9.0.1-1 lm_sensors-3.6.0-1
mesa-19.3.4-2 mobile-broadband-provider-info-20190618-1
nm-connection-editor-1.16.0-1 pango-1:1.44.7+11+g73b46b04-1 pixman-0.38.4-1
polkit-0.116-5 rest-0.8.1-1 shared-mime-info-1.15-2 sound-theme-freedesktop-0.8-3
tdb-1.3.18-4 wayland-1.18.0-1 wayland-protocols-1.20-1 xcb-proto-1.14-1
xkeyboard-config-2.29-1 xorgproto-2019.2-2 zeromq-4.3.2-1 dialog-1:1.3_20200228-1
dosfstools-4.1-3 mtools-4.0.23-1 network-manager-applet-1.16.0-1
networkmanager-1.22.10-1 os-prober-1.77-1 sudo-1.8.31-1 wireless_tools-30.pre9-3
wpa_supplicant-2:2.9-7

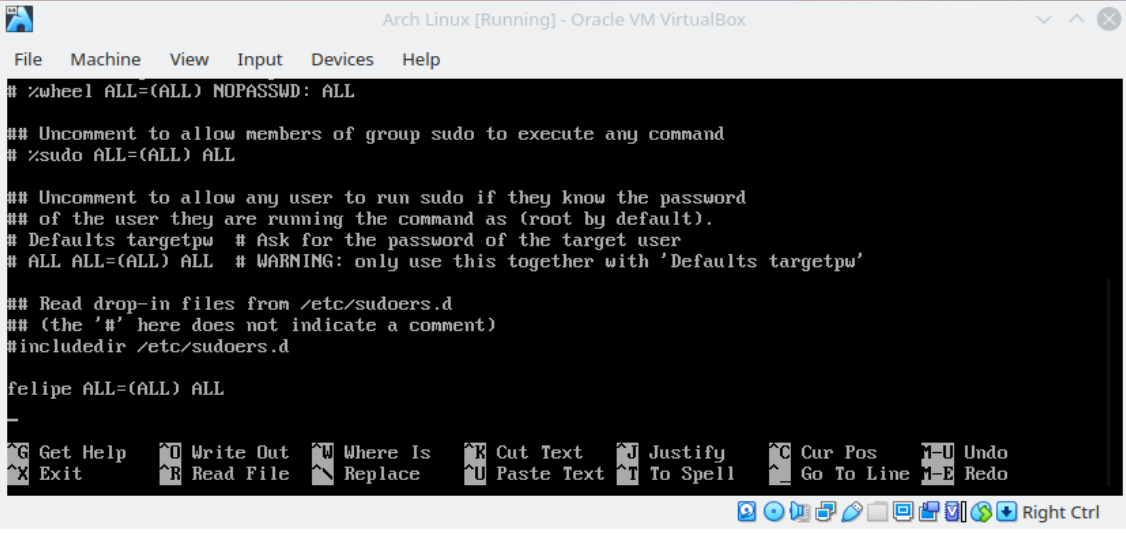
Total Download Size: 98.99 MiB
Total Installed Size: 503.81 MiB
Net Upgrade Size: 493.56 MiB

:: Proceed with installation? [Y/n] Y
```

```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help

wireless_tools-30.pre9-3-x86_64 127.7 KiB 252 KiB/s 00:01 [#####] 100%
dialog-1:1.3_20200228-1-x86_64 195.5 KiB 142 KiB/s 00:01 [#####] 100%
sudo-1.8.31-1-x86_64 868.8 KiB 198 KiB/s 00:04 [#####] 100%
mtools-4.0.23-1-x86_64 186.3 KiB 178 KiB/s 00:01 [#####] 100%
libnm-1.22.10-1-x86_64 1058.8 KiB 262 KiB/s 00:04 [#####] 100%
atk-2.34.1-1-x86_64 352.0 KiB 319 KiB/s 00:01 [#####] 100%
libpng-1.6.37-1-x86_64 237.5 KiB 306 KiB/s 00:01 [#####] 100%
xcb-proto-1.14-1-any 108.9 KiB 318 KiB/s 00:00 [#####] 100%
libxdmcp-1.1.3-2-x86_64 25.7 KiB 321 KiB/s 00:00 [#####] 100%
libxau-1.0.9-2-x86_64 10.5 KiB 655 KiB/s 00:00 [#####] 100%
libxcb-1.14-1-x86_64 999.8 KiB 278 KiB/s 00:04 [#####] 100%
xorgproto-2019.2-2-any 239.5 KiB 283 KiB/s 00:01 [#####] 100%
libx11-1.6.9-6-x86_64 2028.1 KiB 122 KiB/s 00:17 [#####] 100%
libxrender-0.9.10-3-x86_64 23.9 KiB 427 KiB/s 00:00 [#####] 100%
libxext-1.3.4-2-x86_64 103.4 KiB 190 KiB/s 00:01 [#####] 100%
graphite-1:1.3.13-2-x86_64 215.9 KiB 137 KiB/s 00:02 [#####] 100%
harfbuzz-2.6.4-2-x86_64 795.6 KiB 129 KiB/s 00:06 [#####] 100%
freetype2-2.10.1-2-x86_64 490.3 KiB 208 KiB/s 00:02 [#####] 100%
fontconfig-2:2.13.91+24+g75eadca-2-x86_64 895.9 KiB 126 KiB/s 00:07 [#####] 100%
pixman-0.38.4-1-x86_64 231.8 KiB 65.5 KiB/s 00:04 [#####] 100%
cairo-1.17.2+17+g52a7c79fd-2-x86_64 717.9 KiB 101 KiB/s 00:07 [#####] 100%
libxfixes-5.0.3-3-x86_64 12.7 KiB 748 KiB/s 00:00 [#####] 100%
libxcursor-1.2.0-1-x86_64 27.7 KiB 163 KiB/s 00:00 [#####] 100%
libxinerama-1.1.4-2-x86_64 9.6 KiB 478 KiB/s 00:00 [#####] 100%
libxrandr-1.5.2-2-x86_64 25.3 KiB 155 KiB/s 00:00 [#####] 100%
libxi-1.7.10-2-x86_64 145.8 KiB 170 KiB/s 00:01 [#####] 100%
libepoxy-1.5.4-1-x86_64 398.5 KiB 125 KiB/s 00:03 [#####] 100%
libtiff-4.1.0-1-x86_64 816.3 KiB 240 KiB/s 00:03 [#####] 100%
shared-mime-info-1.15-2-x86_64 579.8 KiB 299 KiB/s 00:02 [#####] 100%
gdk-pixbuf2-2.40.0-2-x86_64 715.2 KiB 270 KiB/s 00:03 [#####] 100%
dconf-0.36.0-1-x86_64 98.5 KiB 305 KiB/s 00:00 [#####] 100%
libxcomposite-0.4.5-2-x86_64 11.0 KiB 552 KiB/s 00:00 [#####] 100%
libxdamage-1.1.5-2-x86_64 6.8 KiB 340 KiB/s 00:00 [#####] 100%
libdatrie-0.2.12-1-x86_64 26.2 KiB 341 KiB/s 00:00 [#####] 100%
libthai-0.1.28-1-x86_64 151.7 KiB 277 KiB/s 00:01 [#####] 100%
libxft-2.3.3-1-x86_64 46.1 KiB 184 KiB/s 00:00 [#####] 100%
fribidi-1.0.9-1-x86_64 10.3 KiB 10.4 KiB/s 00:03 [#####] 24%
```

Adicionando usuário felipe em `/etc/sudoers` temos:



```
# %wheel ALL=(ALL) NOPASSWD: ALL

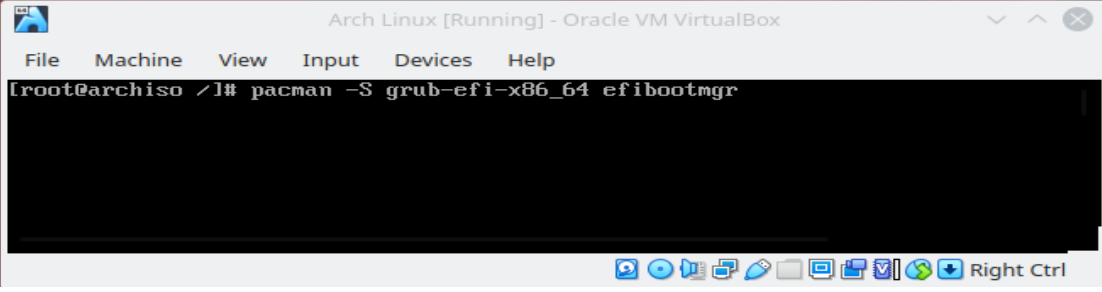
## Uncomment to allow members of group sudo to execute any command
# %sudo ALL=(ALL) ALL

## Uncomment to allow any user to run sudo if they know the password
## of the user they are running the command as (root by default).
# Defaults targetpw # Ask for the password of the target user
# ALL ALL=(ALL) ALL # WARNING: only use this together with 'Defaults targetpw'

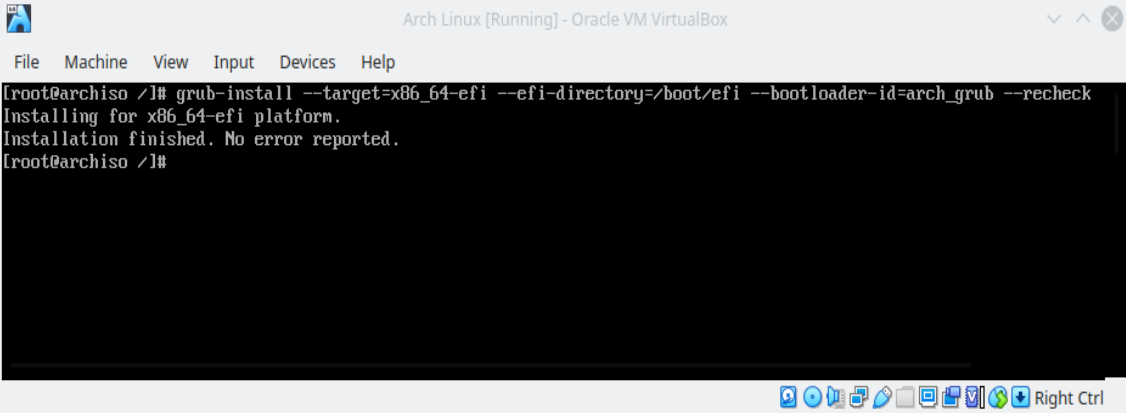
## Read drop-in files from /etc/sudoers.d
## (the '#' here does not indicate a comment)
#include::dir /etc/sudoers.d

felipe ALL=(ALL) ALL
```

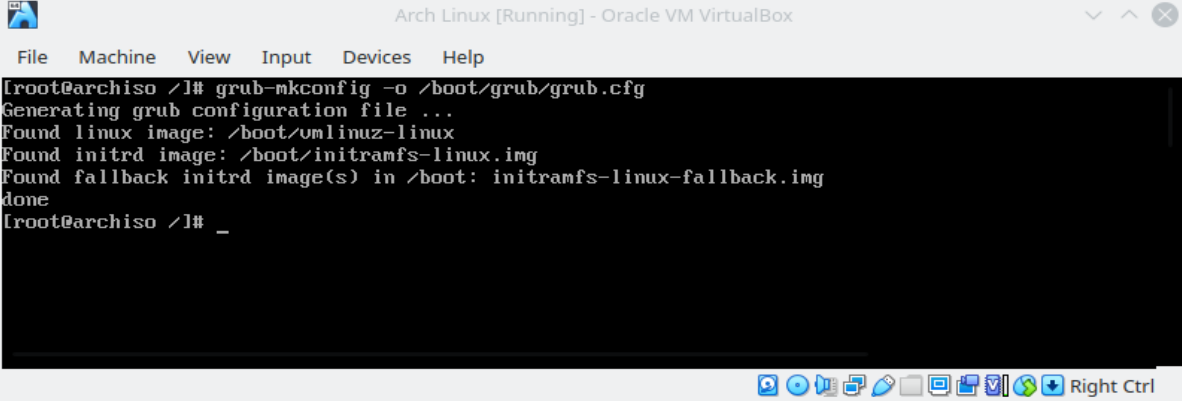
Instalando o GRUB



```
[root@archiso /]# pacman -S grub-efi-x86_64 efibootmgr
```

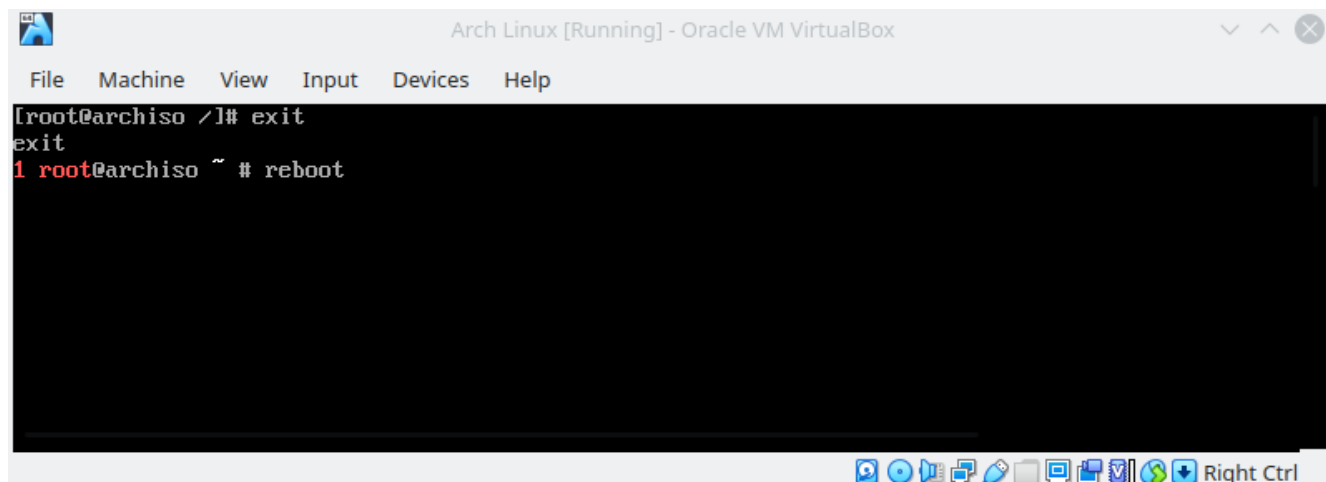


```
[root@archiso /]# grub-install --target=x86_64-efi --efi-directory=/boot/efi --bootloader-id=arch_grub --recheck
Installing for x86_64-efi platform.
Installation finished. No error reported.
[root@archiso /]#
```

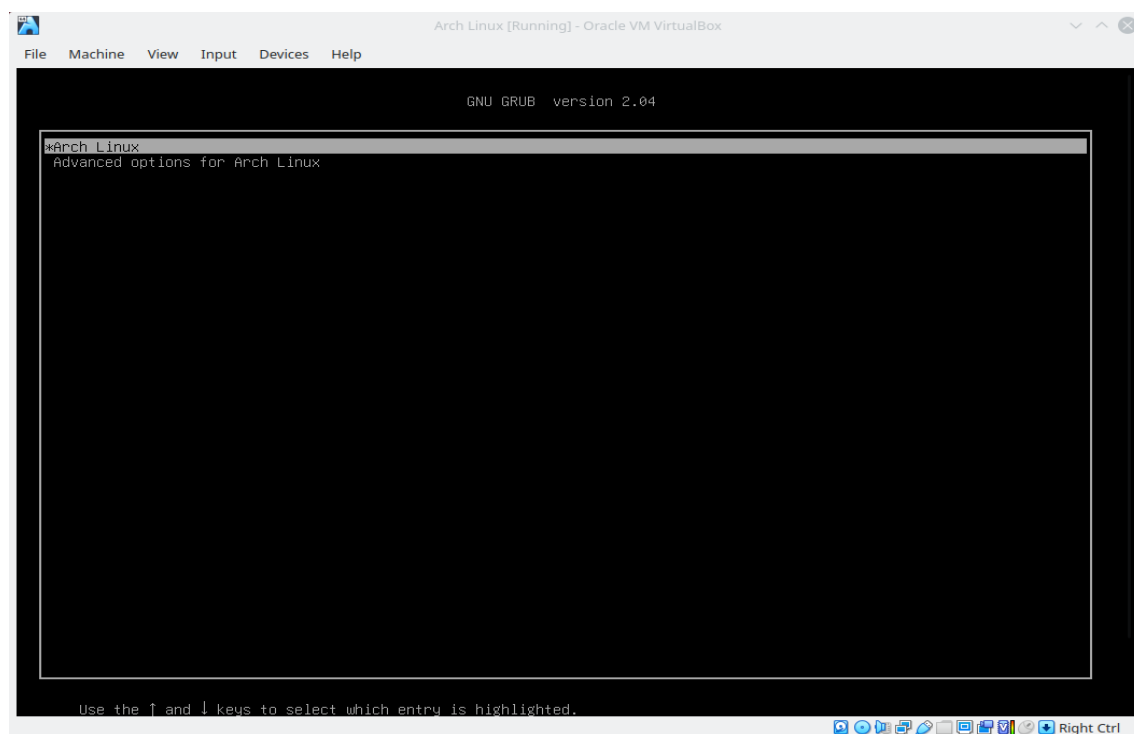


```
[root@archiso /]# grub-mkconfig -o /boot/grub/grub.cfg
Generating grub configuration file ...
Found linux image: /boot/vmlinuz-linux
Found initrd image: /boot/initramfs-linux.img
Found fallback initrd image(s) in /boot: initramfs-linux-fallback.img
done
[root@archiso /]# _
```

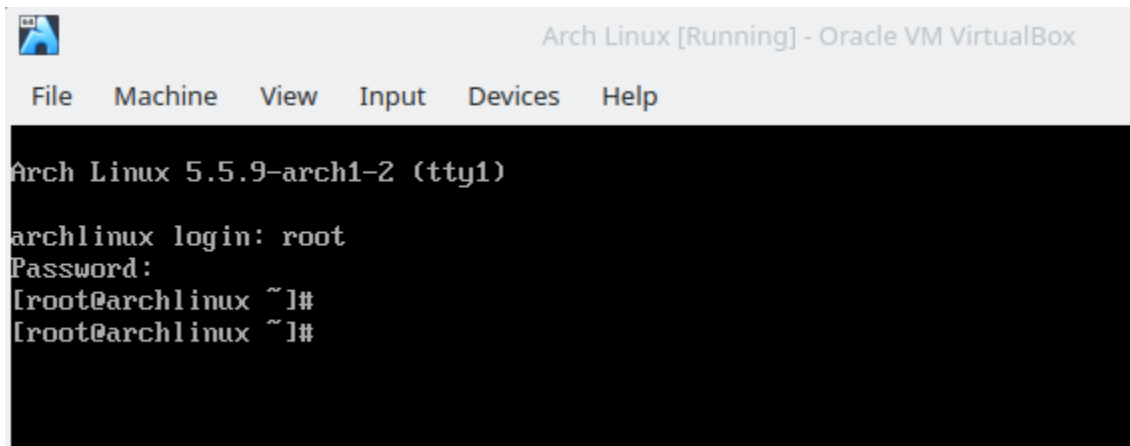
## Reniciando o sistema



Podemos perceber que o GRUB foi instalado com sucesso, pois essa tela abaixo é a tela inicial do GRUB que permite escolher o sistema linux para iniciar



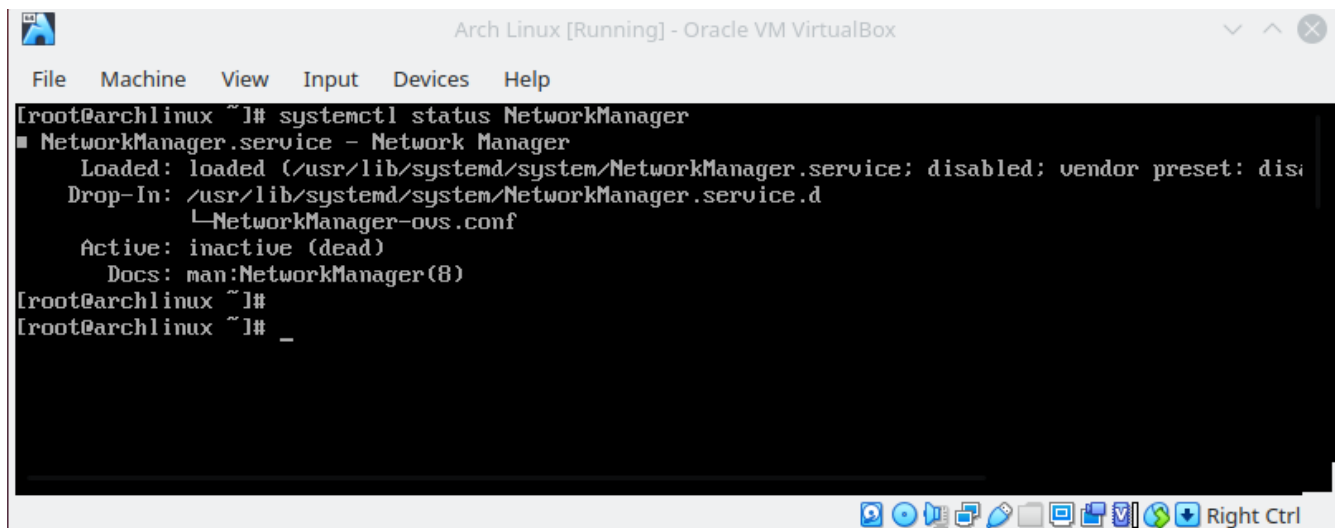
Logando como root

A terminal window titled "Arch Linux [Running] - Oracle VM VirtualBox" with a menu bar (File, Machine, View, Input, Devices, Help). The terminal output shows the login process for Arch Linux 5.5.9-arch1-2 (tty1). The user logs in as root, and the prompt changes from archlinux to [root@archlinux ~]#.

```
Arch Linux 5.5.9-arch1-2 (tty1)

archlinux login: root
Password:
[root@archlinux ~]#
[root@archlinux ~]#
```

Verificando status do serviço de internet

A terminal window titled "Arch Linux [Running] - Oracle VM VirtualBox" with a menu bar (File, Machine, View, Input, Devices, Help). The terminal output shows the command 'systemctl status NetworkManager' being executed. The output indicates that the NetworkManager.service is loaded but inactive (dead). The prompt returns to [root@archlinux ~]# after the command.

```
[root@archlinux ~]# systemctl status NetworkManager
■ NetworkManager.service - Network Manager
   Loaded: loaded (/usr/lib/systemd/system/NetworkManager.service; disabled; vendor preset: disabled)
   Drop-In: /usr/lib/systemd/system/NetworkManager.service.d
            └─NetworkManager-ovs.conf
   Active: inactive (dead)
     Docs: man:NetworkManager(8)
[root@archlinux ~]#
[root@archlinux ~]# _
```

Ativando serviço de internet

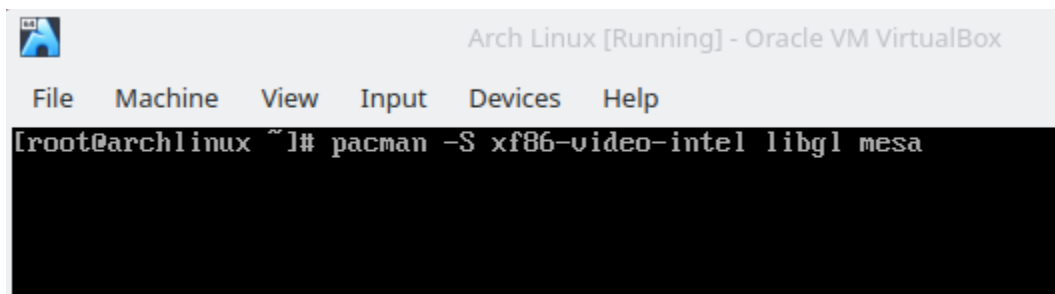
```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
[root@archlinux ~]# systemctl start NetworkManager
[root@archlinux ~]#
[root@archlinux ~]#
[root@archlinux ~]# systemctl status NetworkManager
■ NetworkManager.service - Network Manager
   Loaded: loaded (/usr/lib/systemd/system/NetworkManager.service; disabled; vendor preset: disabled)
   Drop-In: /usr/lib/systemd/system/NetworkManager.service.d
            └─NetworkManager-ovs.conf
   Active: active (running) since Sun 2020-03-15 17:23:13 -03; 13s ago
     Docs: man:NetworkManager(8)
  Main PID: 349 (NetworkManager)
    Tasks: 4 (limit: 1144)
   Memory: 17.5M
   CGroup: /system.slice/NetworkManager.service
           └─349 /usr/bin/NetworkManager --no-daemon

mar 15 17:23:15 archlinux NetworkManager[349]: <info> [1584303795.0119] dhcp4 (enp0s3): state changed
mar 15 17:23:15 archlinux NetworkManager[349]: <info> [1584303795.0139] device (enp0s3): state changed
mar 15 17:23:15 archlinux NetworkManager[349]: <info> [1584303795.0173] device (enp0s3): state changed
mar 15 17:23:15 archlinux NetworkManager[349]: <info> [1584303795.0180] device (enp0s3): state changed
mar 15 17:23:15 archlinux NetworkManager[349]: <info> [1584303795.0193] manager: NetworkManager: 1.10.0-1
mar 15 17:23:15 archlinux NetworkManager[349]: <info> [1584303795.0223] manager: NetworkManager: 1.10.0-1
mar 15 17:23:15 archlinux NetworkManager[349]: <info> [1584303795.0229] policy: set 'Conexao cabida'
mar 15 17:23:15 archlinux NetworkManager[349]: <info> [1584303795.2438] device (enp0s3): Activation (wifi) starting
mar 15 17:23:15 archlinux NetworkManager[349]: <info> [1584303795.2535] manager: startup complete
mar 15 17:23:15 archlinux NetworkManager[349]: <info> [1584303795.7608] manager: NetworkManager: 1.10.0-1
lines 1-22/22 (END)
```

Testando funcionamento da internet com *ping*.

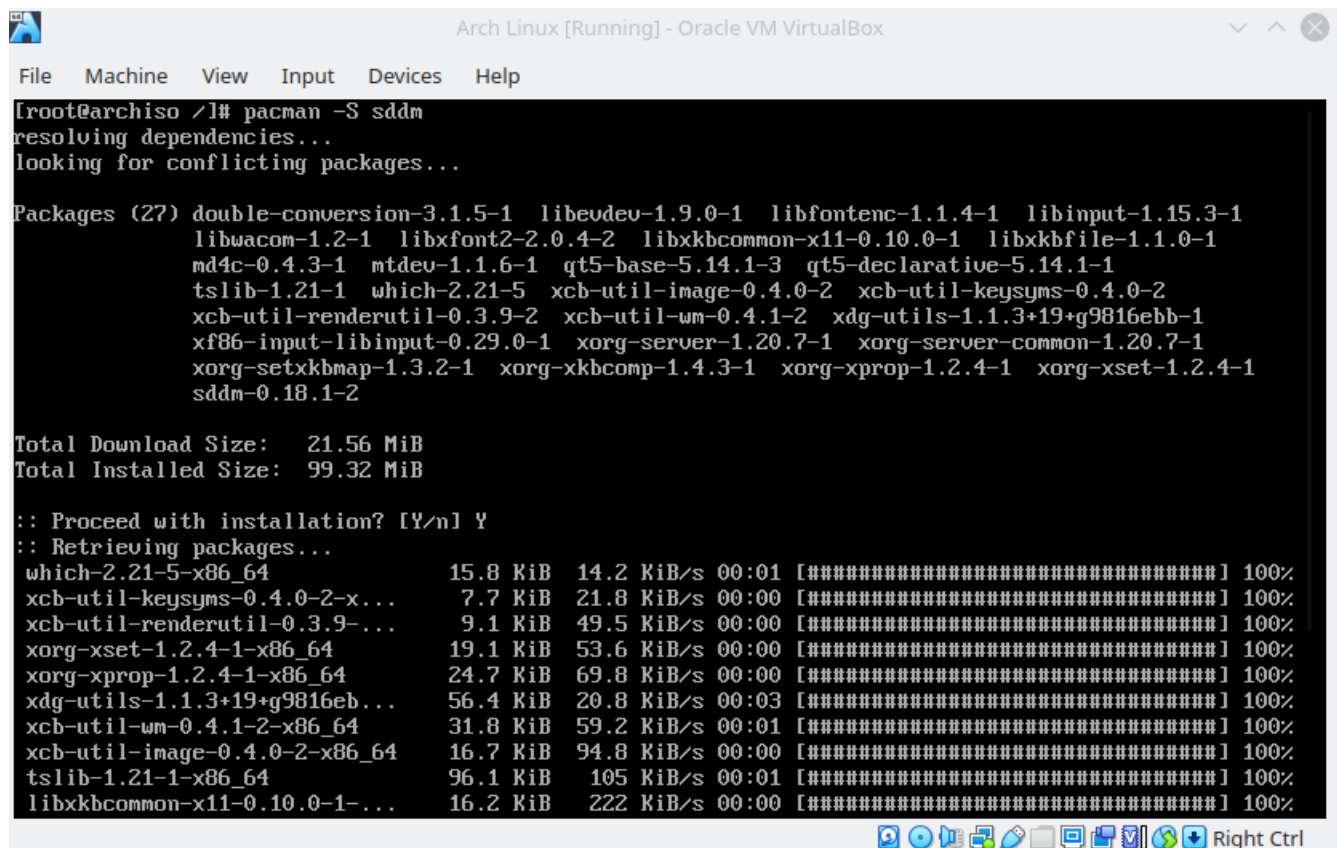
```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
[root@archlinux ~]# ping 8.8.8.8
PING 8.8.8.8 (8.8.8.8) 56(84) bytes of data:
64 bytes from 8.8.8.8: icmp_seq=1 ttl=63 time=5.18 ms
64 bytes from 8.8.8.8: icmp_seq=2 ttl=63 time=5.77 ms
64 bytes from 8.8.8.8: icmp_seq=3 ttl=63 time=4.69 ms
64 bytes from 8.8.8.8: icmp_seq=4 ttl=63 time=6.01 ms
^C
--- 8.8.8.8 ping statistics ---
4 packets transmitted, 4 received, 0% packet loss, time 3005ms
rtt min/avg/max/mdev = 4.694/5.415/6.012/0.514 ms
[root@archlinux ~]#
```

Instalando drivers da intel



```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
[root@archlinux ~]# pacman -S xf86-video-intel libgl mesa
```

Instalando pacotes *sddm* para interface gráfica XFCE



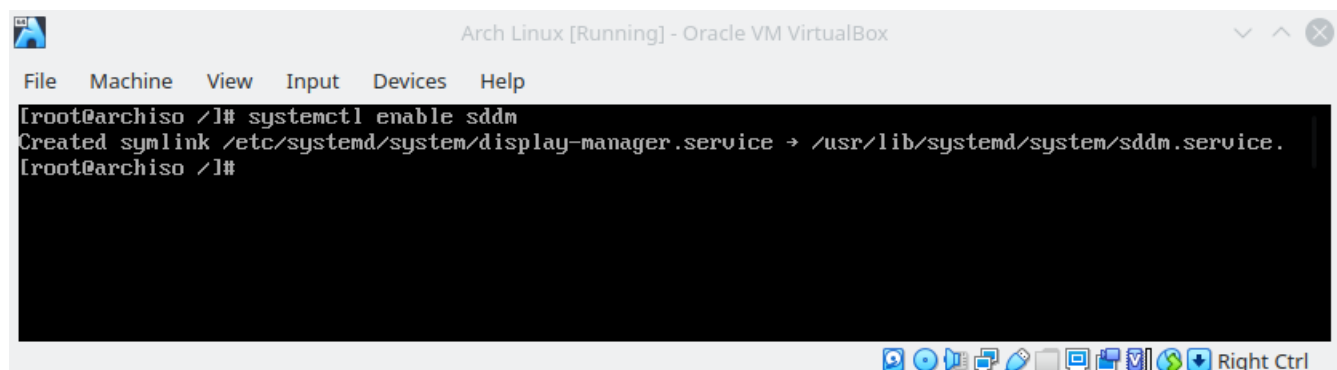
```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
[root@archiso /]# pacman -S sddm
resolving dependencies...
looking for conflicting packages...

Packages (27) double-conversion-3.1.5-1 libeudev-1.9.0-1 libfontenc-1.1.4-1 libinput-1.15.3-1
libwacom-1.2-1 libxfont2-2.0.4-2 libxkbcommon-x11-0.10.0-1 libxkbfile-1.1.0-1
md4c-0.4.3-1 mtdev-1.1.6-1 qt5-base-5.14.1-3 qt5-declarative-5.14.1-1
tslib-1.21-1 which-2.21-5 xcb-util-image-0.4.0-2 xcb-util-keysyms-0.4.0-2
xcb-util-renderutil-0.3.9-2 xcb-util-wm-0.4.1-2 xdg-utils-1.1.3+19+g9816ebb-1
xf86-input-libinput-0.29.0-1 xorg-server-1.20.7-1 xorg-server-common-1.20.7-1
xorg-setxkbmap-1.3.2-1 xorg-xkbcomp-1.4.3-1 xorg-xprop-1.2.4-1 xorg-xset-1.2.4-1
sddm-0.18.1-2

Total Download Size: 21.56 MiB
Total Installed Size: 99.32 MiB

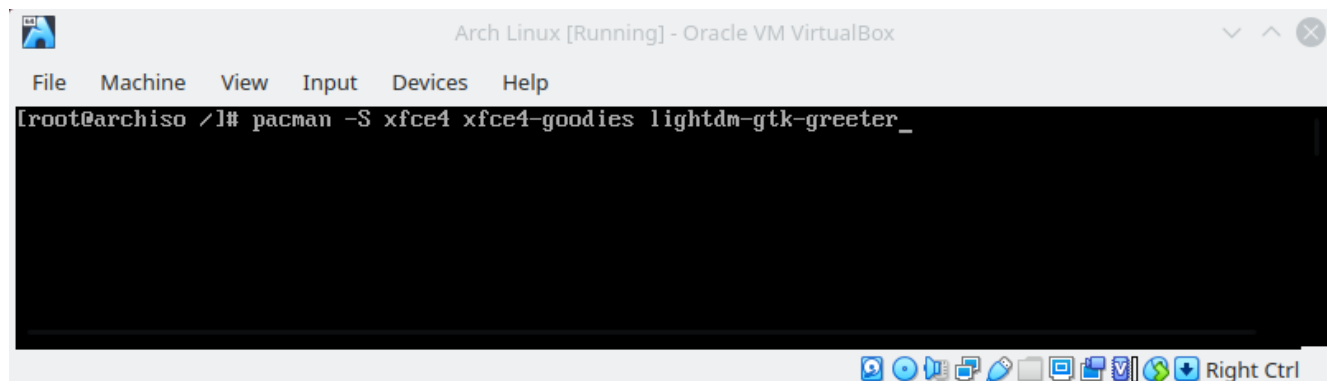
:: Proceed with installation? [Y/n] Y
:: Retrieving packages...
which-2.21-5-x86_64 15.8 KiB 14.2 KiB/s 00:01 [#####] 100%
xcb-util-keysyms-0.4.0-2-x... 7.7 KiB 21.8 KiB/s 00:00 [#####] 100%
xcb-util-renderutil-0.3.9-... 9.1 KiB 49.5 KiB/s 00:00 [#####] 100%
xorg-xset-1.2.4-1-x86_64 19.1 KiB 53.6 KiB/s 00:00 [#####] 100%
xorg-xprop-1.2.4-1-x86_64 24.7 KiB 69.8 KiB/s 00:00 [#####] 100%
xdg-utils-1.1.3+19+g9816eb... 56.4 KiB 20.8 KiB/s 00:03 [#####] 100%
xcb-util-wm-0.4.1-2-x86_64 31.8 KiB 59.2 KiB/s 00:01 [#####] 100%
xcb-util-image-0.4.0-2-x86_64 16.7 KiB 94.8 KiB/s 00:00 [#####] 100%
tslib-1.21-1-x86_64 96.1 KiB 105 KiB/s 00:01 [#####] 100%
libxkbcommon-x11-0.10.0-1-... 16.2 KiB 222 KiB/s 00:00 [#####] 100%
```

Habilitando *sddm* na inicialização do sistema

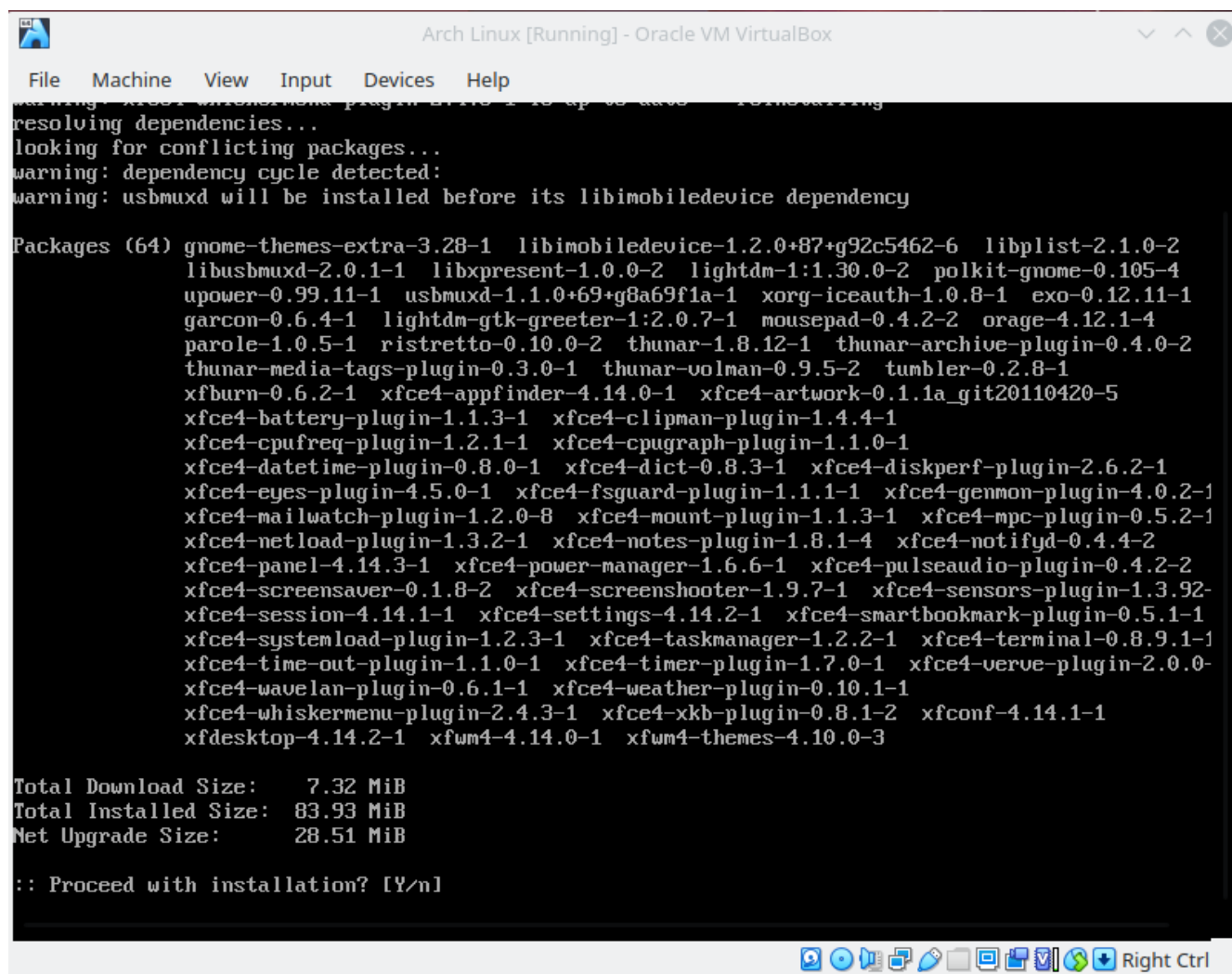


```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
[root@archiso /]# systemctl enable sddm
Created symlink /etc/systemd/system/display-manager.service -> /usr/lib/systemd/system/sddm.service.
[root@archiso /]#
```

## Instalando pacotes de interface gráfica XFCE



```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
[root@archiso /]# pacman -S xfce4 xfce4-goodies lightdm-gtk-greeter_
```



```
Arch Linux [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
warning: xfce4-whiskermenu-plugin-2.4.3-1 is up to date - skipping
resolving dependencies...
looking for conflicting packages...
warning: dependency cycle detected:
warning: usbmuxd will be installed before its libimobiledevice dependency

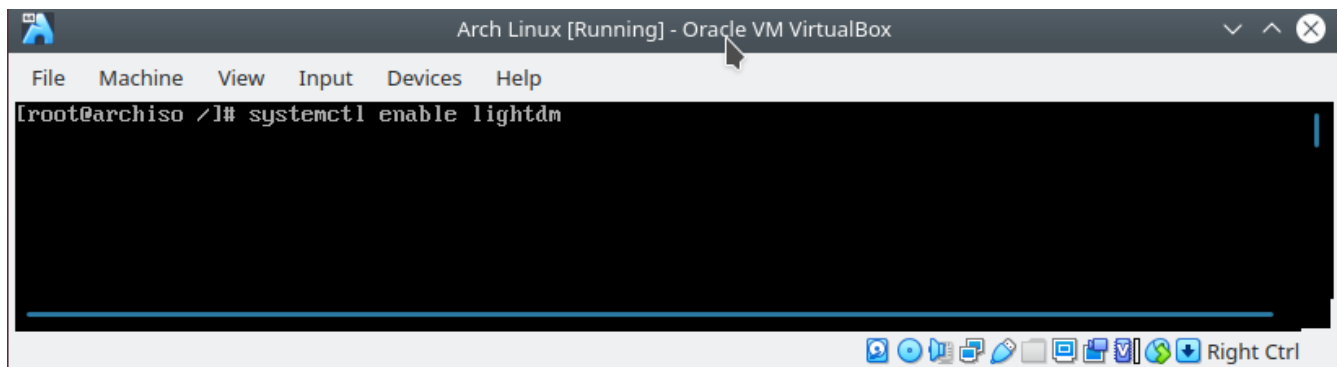
Packages (64) gnome-themes-extra-3.28-1 libimobiledevice-1.2.0+87+g92c5462-6 libplist-2.1.0-2
libusbmuxd-2.0.1-1 libxpresent-1.0.0-2 lightdm-1:1.30.0-2 polkit-gnome-0.105-4
upower-0.99.11-1 usbmuxd-1.1.0+69+g8a69f1a-1 xorg-iceauth-1.0.8-1 exo-0.12.11-1
garcon-0.6.4-1 lightdm-gtk-greeter-1:2.0.7-1 mousepad-0.4.2-2 orage-4.12.1-4
parole-1.0.5-1 ristretto-0.10.0-2 thunar-1.8.12-1 thunar-archive-plugin-0.4.0-2
thunar-media-tags-plugin-0.3.0-1 thunar-volman-0.9.5-2 tumbler-0.2.8-1
xfburn-0.6.2-1 xfce4-appfinder-4.14.0-1 xfce4-artwork-0.1.1a_git20110420-5
xfce4-battery-plugin-1.1.3-1 xfce4-clipman-plugin-1.4.4-1
xfce4-cpufreq-plugin-1.2.1-1 xfce4-cpugraph-plugin-1.1.0-1
xfce4-datetime-plugin-0.8.0-1 xfce4-dict-0.8.3-1 xfce4-diskperf-plugin-2.6.2-1
xfce4-eyes-plugin-4.5.0-1 xfce4-fsguard-plugin-1.1.1-1 xfce4-genmon-plugin-4.0.2-1
xfce4-mailwatch-plugin-1.2.0-8 xfce4-mount-plugin-1.1.3-1 xfce4-mpc-plugin-0.5.2-1
xfce4-netload-plugin-1.3.2-1 xfce4-notes-plugin-1.8.1-4 xfce4-notifyd-0.4.4-2
xfce4-panel-4.14.3-1 xfce4-power-manager-1.6.6-1 xfce4-pulseaudio-plugin-0.4.2-2
xfce4-screensaver-0.1.8-2 xfce4-screenshooter-1.9.7-1 xfce4-sensors-plugin-1.3.92-
xfce4-session-4.14.1-1 xfce4-settings-4.14.2-1 xfce4-smartbookmark-plugin-0.5.1-1
xfce4-systemload-plugin-1.2.3-1 xfce4-taskmanager-1.2.2-1 xfce4-terminal-0.8.9.1-1
xfce4-time-out-plugin-1.1.0-1 xfce4-timer-plugin-1.7.0-1 xfce4-verve-plugin-2.0.0-
xfce4-wavelan-plugin-0.6.1-1 xfce4-weather-plugin-0.10.1-1
xfce4-whiskermenu-plugin-2.4.3-1 xfce4-xkb-plugin-0.8.1-2 xfconf-4.14.1-1
xfdesktop-4.14.2-1 xfwm4-4.14.0-1 xfwm4-themes-4.10.0-3

Total Download Size:    7.32 MiB
Total Installed Size:  83.93 MiB
Net Upgrade Size:       28.51 MiB

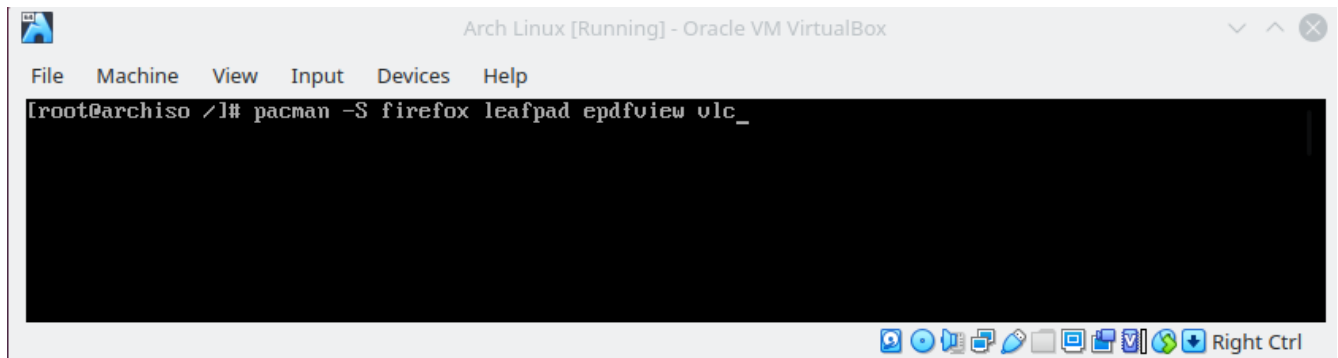
:: Proceed with installation? [Y/n]
```

## Abilitando lightdm

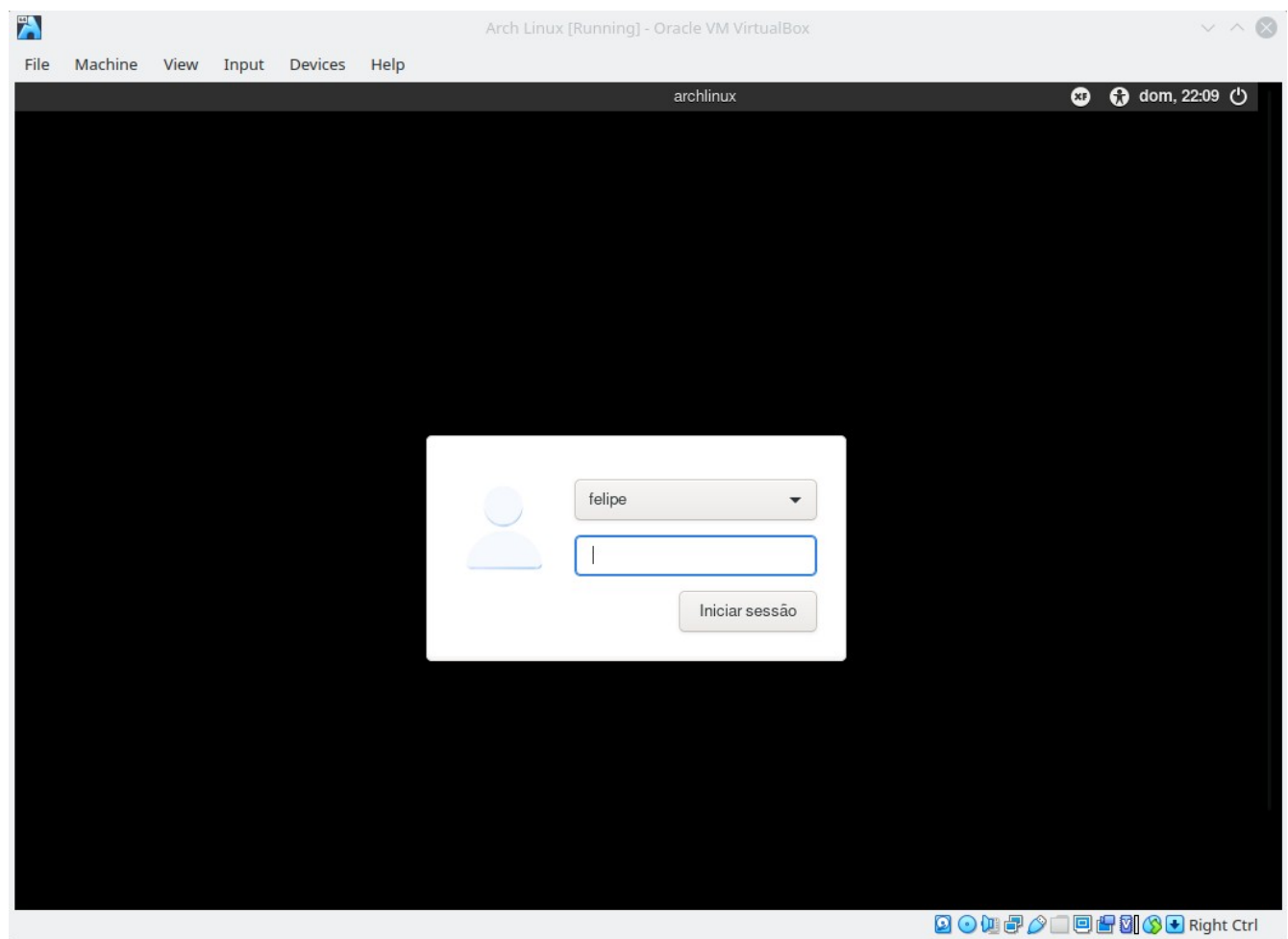




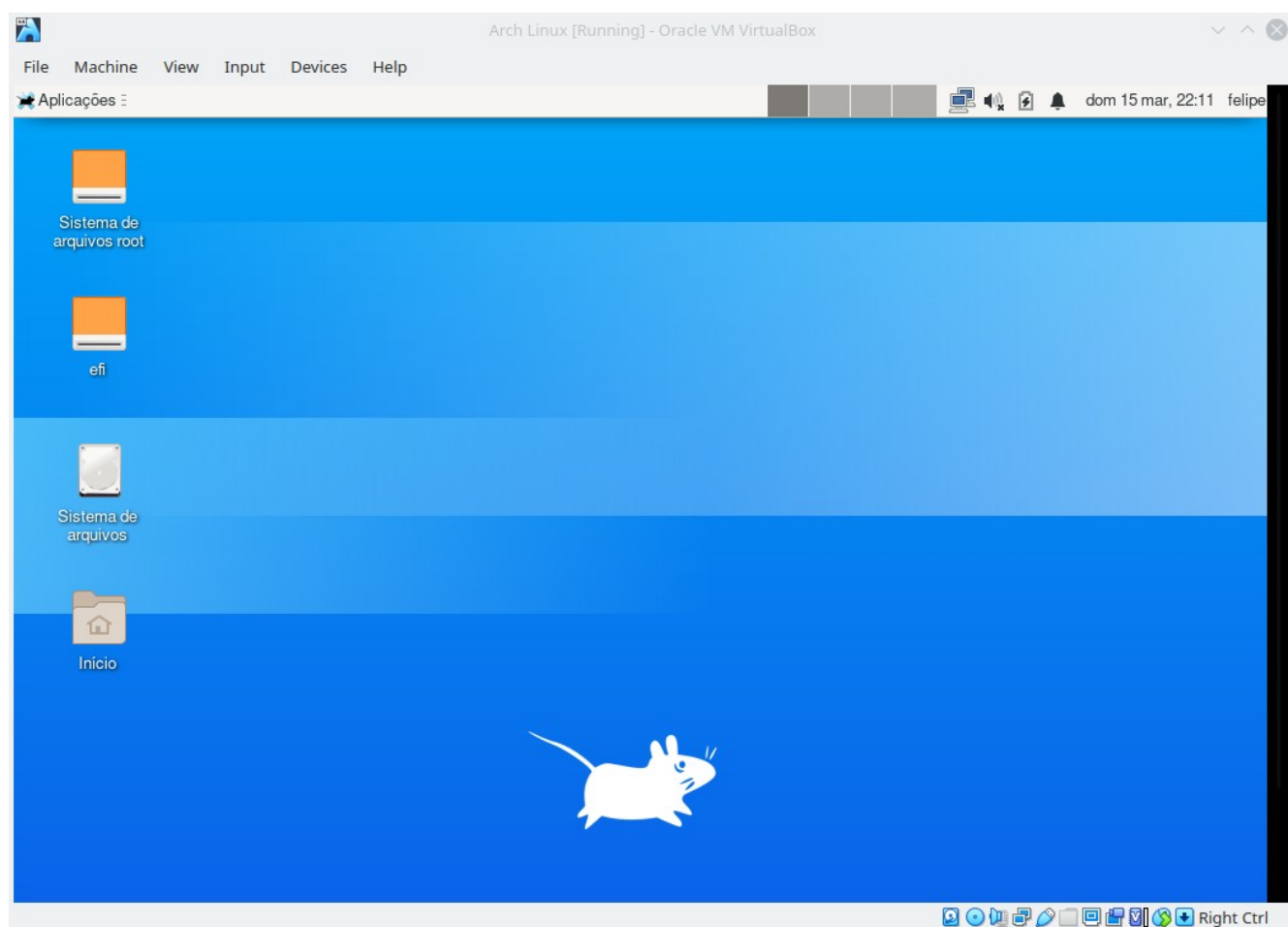
Instalando programas básicos como *firefox*, *leafpad*, *vlc* e *epdfview*.



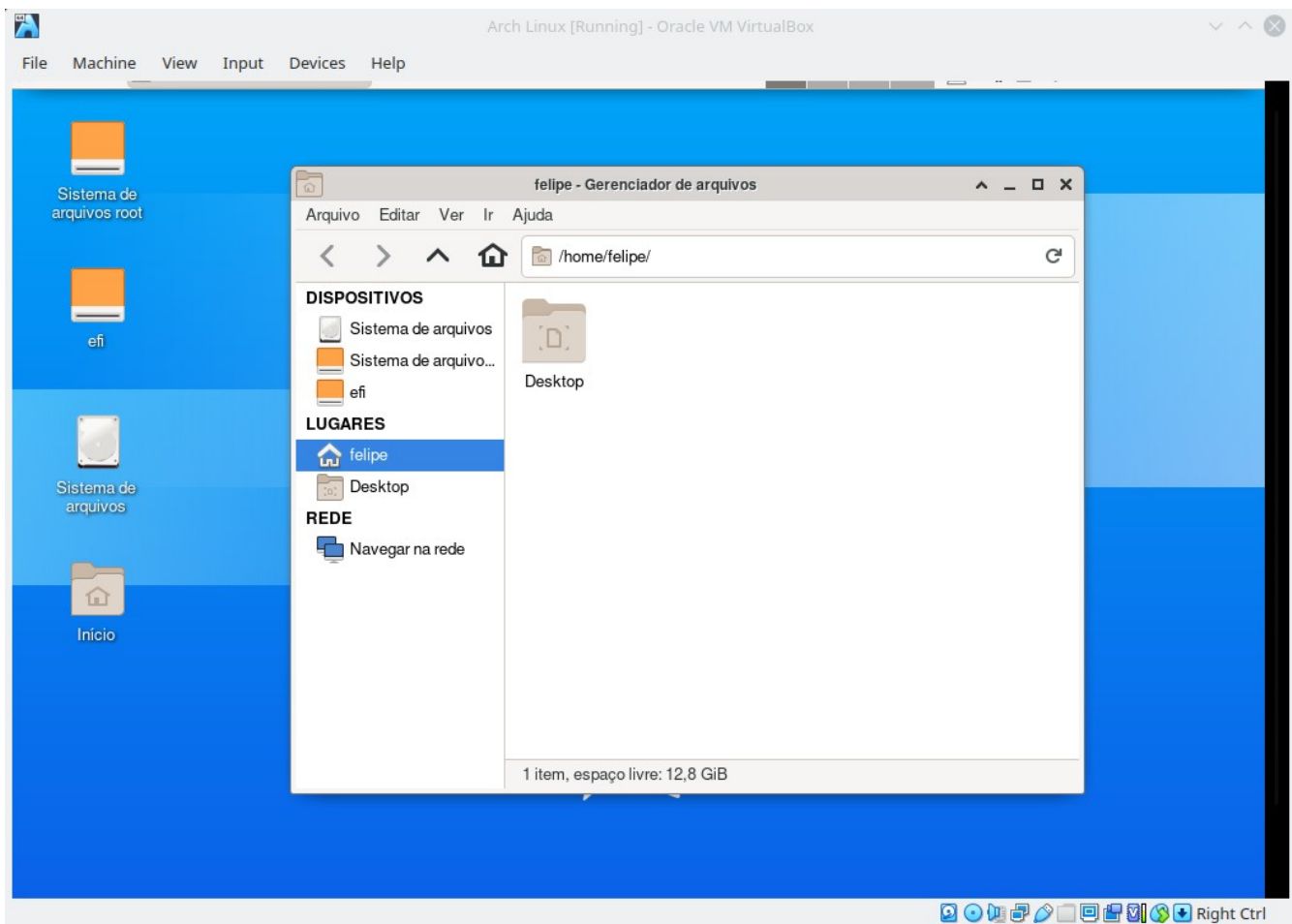
Ao reiniciar o sistema temos a tela de login abaixo:

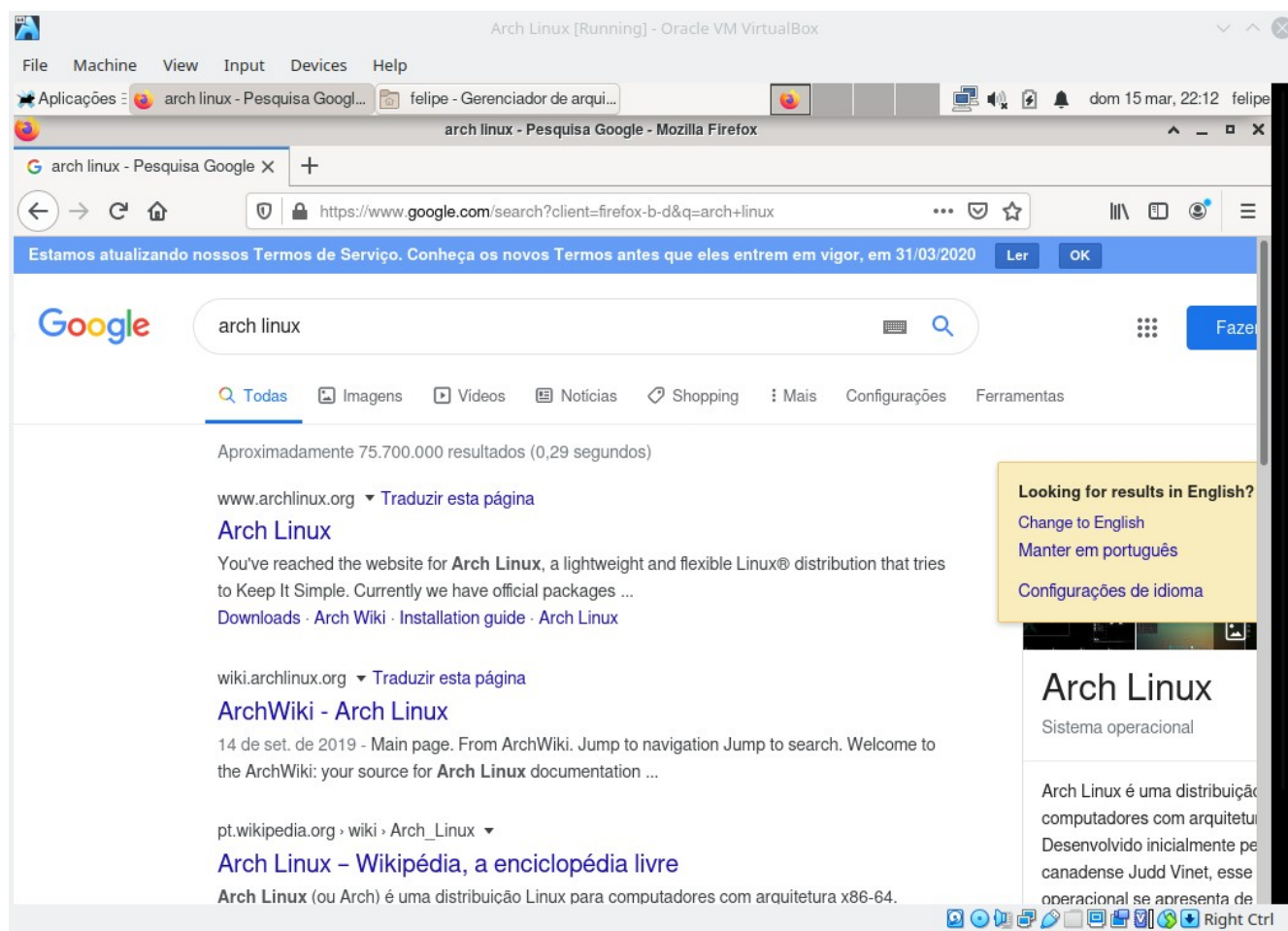


Efetutando o login, temos a tela inicial:



Testando alguns programas do sistema, temos:





Por fim, essa instalação do Arch Linux com interface XFCE foi terminada com sucesso.