

Ver version de kernel:

```
alumnat@alumnat-VirtualBox:~$ sudo su
[sudo] contrasenya per a alumnat:
root@alumnat-VirtualBox:/home/alumnat# uname -r
6.8.0-35-generic
root@alumnat-VirtualBox:/home/alumnat#
```

6.8.0-35-generic

Los kernels se sitúan en /boot/

```
root@alumnat-VirtualBox:/home/alumnat# cd /boot/
root@alumnat-VirtualBox:/boot# ls
config-6.8.0-35-generic      memtest86+ia32.bin          vmlinuz
grub                         memtest86+ia32.efi        vmlinuz-6.8.0-35-generic
initrd.img                    memtest86+x64.bin         vmlinuz.old
initrd.img-6.8.0-35-generic   memtest86+x64.efi
initrd.img.old                System.map-6.8.0-35-generic
root@alumnat-VirtualBox:/boot#
```

Miramos las versiones instaladas de kernel

```
root@alumnat-VirtualBox:/boot# dpkg --get-selections | grep headers
linux-headers-6.8.0-35           install
linux-headers-6.8.0-35-generic   install
linux-headers-generic-hwe-24.04  install
root@alumnat-VirtualBox:/boot#
```

```
root@alumnat-VirtualBox:/boot# dpkg --get-selections | grep linux-image
linux-image-6.8.0-35-generic     install
linux-image-generic-hwe-24.04    install
root@alumnat-VirtualBox:/boot#
```

Por si la cagamos hacemos que se pueda ejecutar el grub

```
GNU nano 7.2                               /etc/default/grub *
# If you change this file, run 'update-grub' afterwards to update
# /boot/grub/grub.cfg.
# For full documentation of the options in this file, see:
#   info -f grub -n 'Simple configuration'

GRUB_DEFAULT=0
#GRUB_TIMEOUT_STYLE=hidden
#GRUB_TIMEOUT=0
GRUB_DISTRIBUTOR=`( . /etc/os-release; echo ${NAME:-Ubuntu} ) 2>/dev/null || echo Ubuntu`
GRUB_CMDLINE_LINUX_DEFAULT="quiet splash"
GRUB_CMDLINE_LINUX=""

# If your computer has multiple operating systems installed, then you
# probably want to run os-prober. However, if your computer is a host
# for guest OSes installed via LVM or raw disk devices, running
# os-prober can cause damage to those guest OSes as it mounts
# filesystems to look for things.
```

Aplicamos el grub

```
root@alumnat-VirtualBox:/boot# nano /etc/default/grub
root@alumnat-VirtualBox:/boot# update-grub
Sourcing file '/etc/default/grub'
Generating grub configuration file ...
Found linux image: /boot/vmlinuz-6.8.0-35-generic
Found initrd image: /boot/initrd.img-6.8.0-35-generic
Found memtest86+x64 image: /boot/memtest86+x64.bin
Warning: os-prober will not be executed to detect other bootable partitions.
Systems on them will not be added to the GRUB boot configuration.
Check GRUB_DISABLE_OS_PROBER documentation entry.
Adding boot menu entry for UEFI Firmware Settings ...
done
root@alumnat-VirtualBox:/boot#
```

Desinstalamos el antiguo kernel, repetimos con (headers, tools, image)

```
root@alumnat-VirtualBox:/home/alumnat# apt remove --purge linux-headers-6.8*
S'està llegint la llista de paquets... Fet
S'està constraint l'arbre de dependències... Fet
S'està llegint la informació de l'estat... Fet
Tingueu en compte que s'està seleccionant «linux-headers-6.8.0-35-lowlatency» per al glob «linux-headers-6.8*»
Tingueu en compte que s'està seleccionant «linux-headers-6.8.0-1005-intel» per al glob «linux-headers-6.8*»
Tingueu en compte que s'està seleccionant «linux-headers-6.8.0-1007-azure» per al glob «linux-headers-6.8*»
Tingueu en compte que s'està seleccionant «linux-headers-6.8.0-1005-oracle» per al glob «linux-headers-6.8*»
Tingueu en compte que s'està seleccionant «linux-headers-6.8.0-1003-gke» per al glob «linux-headers-6.8*»
Tingueu en compte que s'està seleccionant «linux-headers-6.8.0-31-generic» per al glob «linux-headers-6.8*»
```

Añadimos repositorios

```
root@alumnat-VirtualBox:/home/alumnat/Escriptori# add-apt-repository ppa:cappelikan/ppa
Dipòsit: «Types: deb
URIs: https://ppa.launchpadcontent.net/cappelikan/ppa/ubuntu/
Suites: noble
Components: main
»
Descripció:
Mainline Ubuntu Kernel Installer https://github.com/bkw777/mainline
Més informació: https://launchpad.net/~cappelikan/+archive/ubuntu/ppa
S'està afegint el dipòsit.
Premeu [INTRO] per continuar a Ctrl-c per cancel·lar.
Obj:1 http://security.ubuntu.com/ubuntu noble-security InRelease
Bai:2 https://ppa.launchpadcontent.net/cappelikan/ppa/ubuntu noble InRelease [17,8 kB]
Bai:3 https://ppa.launchpadcontent.net/cappelikan/ppa/ubuntu noble/main amd64 Packages [VBox_GAs_7.1.12]
Obj:4 http://es.archive.ubuntu.com/ubuntu noble InRelease
Bai:5 https://ppa.launchpadcontent.net/cappelikan/ppa/ubuntu noble/main Translation-en [316 B]
Obj:6 http://es.archive.ubuntu.com/ubuntu noble-updates InRelease
Obj:7 http://es.archive.ubuntu.com/ubuntu noble-backports InRelease
S'ha baixat 18,7 kB en 1s (34,4 kB/s)
S'està llegint la llista de paquets... Fet
root@alumnat-VirtualBox:/home/alumnat/Escriptori#
```

para ver modulos

```
root@alumnat-VirtualBox:/home/alumnat# lsmod
```

para ver info de un modulo

```
apt install monodoc-base
root@alumnat-VirtualBox:/home/alumnat# modinfo video
filename:      /lib/modules/6.17.7-061707-generic/kernel/drivers/acpi/video.ko.zst
license:       GPL
description:   ACPI Video Driver
author:        Bruno Ducrot
srcversion:    2FACE1AD56AD859A9AB55D6
alias:         acpi*:LNXVIDEO:*
depends:       wmi
intree:        Y
name:          video
retpoline:     Y
vermagic:     6.17.7-061707-generic SMP preempt mod_unload modversions
sig_id:        PKCS#7
signer:        Build time autogenerated kernel key
sig_key:       52:77:C9:DE:C6:55:CC:C9:32:C1:74:7A:BD:4A:C7:16:0B:D2:D3:8B
sig_hashalgo: sha512
signature:    7E:0D:C6:6E:20:F8:3C:A3:8F:A3:B7:3A:01:EE:82:CD:24:DB:07:9A:
              69:D1:24:74:2B:D5:67:50:A7:EF:A8:AE:29:90:52:7E:99:BC:1C:7D:
              53:73:5E:13:C7:6C:2C:60:0D:F0:93:AF:07:AB:68:83:80:66:54:95:
              D4:CA:37:BB:5F:82:23:2A:D8:56:6A:F9:49:51:3C:52:F2:F2:2B:C2:
              47:7F:26:64:F5:E5:F5:56:2B:D0:02:1A:27:95:62:3D:0C:F3:A3:CA:
              7E:E6:5F:F0:AC:C3:90:3F:8C:29:E7:B9:A0:2F:D1:04:B1:2A:F9:7B:
              B5:1E:67:62:C7:05:CA:05:C0:09:03:74:0B:CE:62:4F:33:A2:D2:C5:
              64:A4:EC:6D:B0:F1:4B:83:9F:45:A9:37:1D:80:BA:6D:6B:3B:2C:A1:
              AA:98:D0:5D:F6:AF:6B:F6:58:DF:8F:00:9E:74:C5:87:25:B1:14:2C:
              DB:20:4E:47:91:1F:6D:6B:63:2D:C7:91:E0:41:46:B3:E1:5B:F9:35:
              6B:93:42:2D:B0:9C:AE:F3:F3:84:C3:12:AB:DA:3C:8B:E1:C7:32:7C:
              71:9C:ED:9A:7E:4A:3E:4A:44:E2:92:57:5C:87:61:62:D0:BD:C1:20:
              BD:A0:CC:E8:D9:D7:A4:32:1C:72:F0:1E:6A:89:FC:31:C0:0E:DB:6E:
              65:60:60:22:72:21:4D:21:60:65:65:71:06:0B:0B:67:02:65:65:45
```

Para ver todos los modulos de un kernel vamos a la ruta

```
root@alumnat-VirtualBox:/lib/modules/6.17.7-061707-generic# cd kernel/
root@alumnat-VirtualBox:/lib/modules/6.17.7-061707-generic/kernel# ls
arch block crypto drivers fs io_uring kernel lib mm net samples scsi
root@alumnat-VirtualBox:/lib/modules/6.17.7-061707-generic/kernel#
```

En la ruta /etc/modules-load.d hay 2 archivos uno obsoleteto (modulos.conf) y el cups-filters.conf (dependencias).

Para crear dependencias se tiene que crear un “nombre.conf” y dentro colocar el nombre del modulo

```
root@alumnat-VirtualBox:/etc/modules-load.d# ls
cups-filters.conf  modules.conf
root@alumnat-VirtualBox:/etc/modules-load.d# cat cups-filters.conf
# Parallel printer driver modules loading for cups
# LOAD_LP_MODULE was 'yes' in /etc/default/cups
lp
ppdev
parport_pc
root@alumnat-VirtualBox:/etc/modules-load.d#
```

Para cargar modulos de manera temporal

```
root@alumnat-VirtualBox:/home/alumnat# modprobe -v fcrypt
insmod /lib/modules/6.17.7-061707-generic/kernel/crypto/fcrypt.ko.zst
```

Y para quitarlo sera con -rv

```
root@alumnat-VirtualBox:/home/alumnat# modprobe -rv fcrypt
rmmod fcrypt
root@alumnat-VirtualBox:/home/alumnat#
```

Para petar los modulos que se cargan por defecto vamos a la ruta

```
root@alumnat-VirtualBox:/etc/modprobe.d# nano blacklist.conf
```

```
GNU nano 7.2                         blacklist.conf *
# This file lists those modules which we don't want to be loaded by
# alias expansion, usually so some other driver will be loaded for the
# device instead.

blacklist lp

# evbug is a debug tool that should be loaded explicitly
blacklist evbug

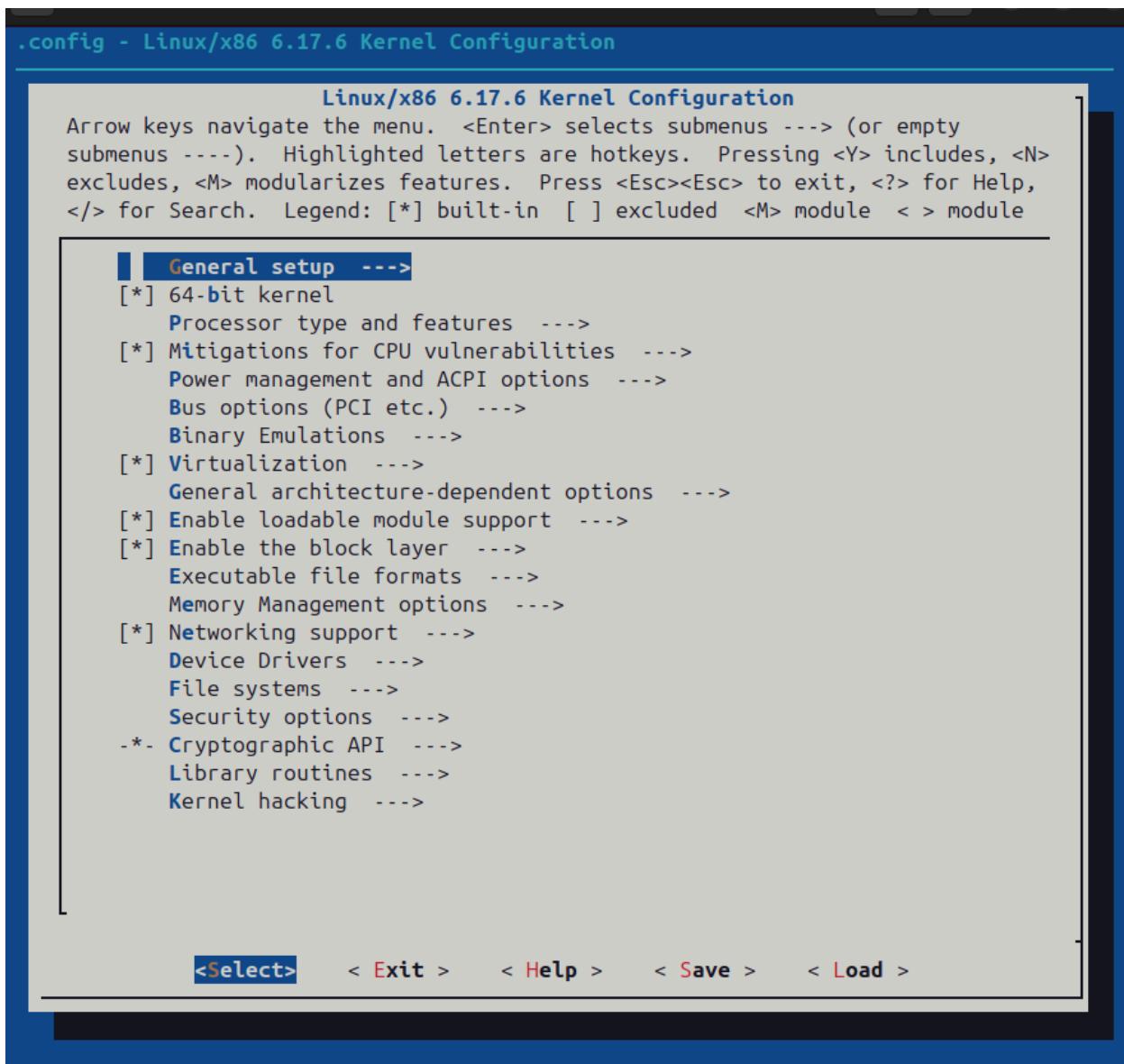
# these drivers are very simple, the HID drivers are usually preferred
blacklist usbmouse
blacklist usbkbd

# replaced by e100
blacklist eepro100
```

Hacemos **make menuconfig** dentro de la captura del kernel genera un .config que luego se compliara para poder instalar un kernel con nuestros requisitos

**M -> En el sistema pero inactivo**

**\* -> Activo**



Entramos al config y buscamos la linea certificates, seguidamente ejamos estas dos lineas en blanco pero con las “ ”

```
#  
# Certificates for signature checking  
#  
CONFIG_MODULE_SIG_KEY="certs/signing_key.pem"  
CONFIG_MODULE_SIG_KEY_TYPE_RSA=y  
# CONFIG_MODULE_SIG_KEY_TYPE_ECDSA is not set  
CONFIG_SYSTEM_TRUSTED_KEYRING=y  
CONFIG_SYSTEM_TRUSTED_KEYS=""  
CONFIG_SYSTEM_EXTRA_CERTIFICATE=y  
CONFIG_SYSTEM_EXTRA_CERTIFICATE_SIZE=4096  
CONFIG_SECONDARY_TRUSTED_KEYRING=y  
# CONFIG_SECONDARY_TRUSTED_KEYRING_SIGNED_BY_BUILTIN is not set  
CONFIG_SYSTEM_BLACKLIST_KEYRING=y  
CONFIG_SYSTEM_BLACKLIST_HASH_LIST=""  
CONFIG_SYSTEM_REVOCATION_LIST=y  
CONFIG_SYSTEM_REVOCATION_KEYS=""  
# CONFIG_SYSTEM_BLACKLIST_AUTH_UPDATE is not set  
# end of Certificates for signature checking
```

Para compilar utilizamos la siguiente comanda  
make-kpkg --initrd linux\_image linux\_headers

```
alumnat@alumnat-VirtualBox:~$ sudo su  
[sudo] contrasenya per a alumnat:  
root@alumnat-VirtualBox:/home/alumnat# cd Baixades/  
root@alumnat-VirtualBox:/home/alumnat/Baixades# cd linux-6.17.6  
root@alumnat-VirtualBox:/home/alumnat/Baixades/linux-6.17.6# ls  
arch CREDITS fs ipc lib mm samples tools  
block crypto include Kbuild LICENSES net scripts usr  
certs Documentation init Kconfig MAINTAINERS README security virt  
root@alumnat-VirtualBox:/home/alumnat/Baixades/linux-6.17.6# make-kpkg --initrd linux_image linux_headers
```

# Actividad Kernel