

Acceder librerías

```
Actividades Terminal 30 de may 11:23
kabu@debian: /lib
kabu@debian:~$ cd lib
bash: cd: lib: No existe el fichero o el directorio
kabu@debian:~$ cd /lib
kabu@debian:/lib$
```

Enlistar Librerías

```
kabu@debian:/lib$ ls
apache2          lsb
apg              man-db
apparmor         mime
apt             modprobe.d
aspell          modules
atril           modules-load.d
binfmt.d        mozilla
console-setup  NetworkManager
cpp            openssl
cups           os-prober
dbus-1.0       os-probes
discover       os-release
dpkg           p7zip
emacsens-common pam.d
environment.d pm-utils
evolution     policykit-1
evolution-data-server policykit-1-gnome
file          polkit-1
firefox-esr   pppd
firewalld     python3
firmware     python3.11
gcc          realmd
gimp         runit-helper
gnirepository-1.0 sas12
```

Version del Kernel

```
ip_solve
kabu@debian:/lib$ cd /modules
bash: cd: /modules: No existe el fichero o el directorio
kabu@debian:/lib$ cd modules
kabu@debian:/lib/modules$ cd modules
bash: cd: modules: No existe el fichero o el directorio
kabu@debian:/lib/modules$ ls
6.1.0-18-amd64  6.1.0-21-amd64
kabu@debian:/lib/modules$
```

Accede y enlista el kernel

```
kabu@debian:/lib/modules$ ls
6.1.0-18-amd64  6.1.0-21-amd64
kabu@debian:/lib/modules$ cd 6.1.0-18-amd64
kabu@debian:/lib/modules/6.1.0-18-amd64$ ls
kernel          modules.builtin.alias.bin  modules.dep.bin  modules.symbols
modules.alias    modules.builtin.bin       modules.devname  modules.symbols.bin
modules.alias.bin modules.builtin.modinfo    modules.order
modules.builtin  modules.dep               modules.softdep
kabu@debian:/lib/modules/6.1.0-18-amd64$
```

Acceder y enlistar el kernel

```
kabu@debian:/lib/modules/6.1.0-18-amd64$ cd kernel
kabu@debian:/lib/modules/6.1.0-18-amd64/kernel$ ls
arch  block  crypto  drivers  fs  lib  mm  net  sound  virt
kabu@debian:/lib/modules/6.1.0-18-amd64/kernel$
```

Peso Kernel

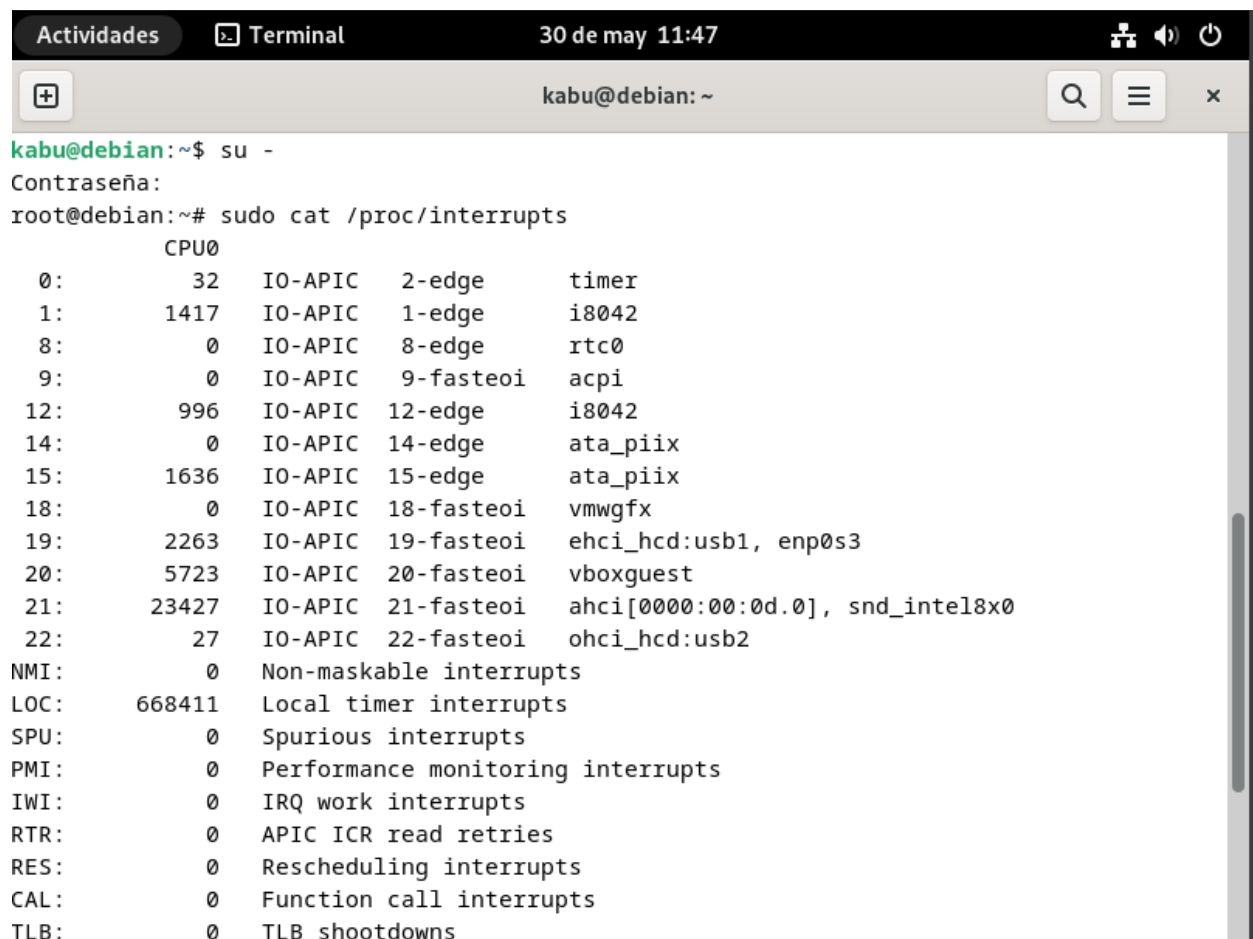
```
-----
kabu@debian:/lib/modules/6.1.0-18-amd64/kernel$ du -hs
389M    .
```

Peso carpetas Kernel

```
kabu@debian:/lib/modules/6.1.0-18-amd64/kernel$ du -hs *
```

```
5,9M    arch
288K    block
1,9M    crypto
275M    drivers
38M     fs
5,9M    lib
132K    mm
34M     net
29M     sound
24K     virt
```

/proc/interrupts

A screenshot of a terminal window titled 'Terminal' with a timestamp of '30 de may 11:47'. The terminal shows a user 'kabu@debian' switching to root with 'su -' and then running 'sudo cat /proc/interrupts'. The output lists various interrupt sources and their counts, including CPU0, NMI, LOC, SPU, PMI, IWI, RTR, RES, CAL, and TLB.

```
kabu@debian:~$ su -
Contraseña:
root@debian:~# sudo cat /proc/interrupts
          CPU0
 0:         32   IO-APIC   2-edge     timer
 1:        1417   IO-APIC   1-edge     i8042
 8:           0   IO-APIC   8-edge     rtc0
 9:           0   IO-APIC   9-fasteoi  acpi
12:         996   IO-APIC  12-edge     i8042
14:           0   IO-APIC  14-edge     ata_piix
15:        1636   IO-APIC  15-edge     ata_piix
18:           0   IO-APIC  18-fasteoi vmwgfx
19:        2263   IO-APIC  19-fasteoi ehci_hcd:usb1, enp0s3
20:        5723   IO-APIC  20-fasteoi vboxquest
21:       23427   IO-APIC  21-fasteoi ahci[0000:00:0d.0], snd_intel8x0
22:          27   IO-APIC  22-fasteoi ohci_hcd:usb2
NMI:          0   Non-maskable interrupts
LOC:       668411 Local timer interrupts
SPU:          0   Spurious interrupts
PMI:          0   Performance monitoring interrupts
IWI:          0   IRQ work interrupts
RTR:          0   APIC ICR read retries
RES:          0   Rescheduling interrupts
CAL:          0   Function call interrupts
TLB:          0   TLB shootdowns
```

/proc/dma

```
root@debian:~# sudo cat /proc/dma
4: cascade
```

/proc/ioports

```
root@debian:~# sudo cat /proc/ioports
0000-0cf7 : PCI Bus 0000:00
  0000-001f : dma1
  0020-0021 : pic1
  0040-0043 : timer0
  0050-0053 : timer1
  0060-0060 : keyboard
  0064-0064 : keyboard
  0070-0071 : rtc_cmos
    0070-0071 : rtc0
  0080-008f : dma page reg
  00a0-00a1 : pic2
  00c0-00df : dma2
  00f0-00ff : fpu
  0170-0177 : 0000:00:01.1
    0170-0177 : ata_piix
  01f0-01f7 : 0000:00:01.1
    01f0-01f7 : ata_piix
  0376-0376 : 0000:00:01.1
    0376-0376 : ata_piix
  03c0-03df : vga+
  03f6-03f6 : 0000:00:01.1
    03f6-03f6 : ata_piix
0cf8-0cff : PCI conf1
0d00-ffff : PCI Bus 0000:00
```

Lspci

```
Actividades Terminal 30 de may 11:58
kabu@debian: ~
root@debian:/# lspci -v
00:00.0 Host bridge: Intel Corporation 440FX - 82441FX PMC [Natoma] (rev 02)
    Flags: fast devsel

00:01.0 ISA bridge: Intel Corporation 82371SB PIIX3 ISA [Natoma/Triton II]
    Flags: bus master, medium devsel, latency 0

00:01.1 IDE interface: Intel Corporation 82371AB/EB/MB PIIX4 IDE (rev 01) (prog-if 8a [
ISA Compatibility mode controller, supports both channels switched to PCI native mode,
supports bus mastering])
    Flags: bus master, fast devsel, latency 64
    I/O ports at 01f0 [size=8]
    I/O ports at 03f4
    I/O ports at 0170 [size=8]
    I/O ports at 0374
    I/O ports at d000 [size=16]
    Kernel driver in use: ata_piix
    Kernel modules: ata_piix, ata_generic

00:02.0 VGA compatible controller: VMware SVGA II Adapter (prog-if 00 [VGA controller])
    Subsystem: VMware SVGA II Adapter
    Flags: bus master, fast devsel, latency 64, IRQ 18
    I/O ports at d010 [size=16]
    Memory at e0000000 (32-bit, prefetchable) [size=16M]
    Memory at f0000000 (32-bit non-prefetchable) [size=2M]
```

Lspci

```
root@debian:/# lspci
00:00.0 Host bridge: Intel Corporation 440FX - 82441FX PMC [Natoma] (rev 02)
00:01.0 ISA bridge: Intel Corporation 82371SB PIIX3 ISA [Natoma/Triton II]
00:01.1 IDE interface: Intel Corporation 82371AB/EB/MB PIIX4 IDE (rev 01)
00:02.0 VGA compatible controller: VMware SVGA II Adapter
00:03.0 Ethernet controller: Intel Corporation 82540EM Gigabit Ethernet Controller (rev
 02)
00:04.0 System peripheral: InnoTek Systemberatung GmbH VirtualBox Guest Service
00:05.0 Multimedia audio controller: Intel Corporation 82801AA AC'97 Audio Controller (
rev 01)
00:06.0 USB controller: Apple Inc. KeyLargo/Intrepid USB
00:07.0 Bridge: Intel Corporation 82371AB/EB/MB PIIX4 ACPI (rev 08)
00:0b.0 USB controller: Intel Corporation 82801FB/FBM/FR/FW/FRW (ICH6 Family) USB2 EHCI
  Controller
00:0d.0 SATA controller: Intel Corporation 82801HM/HEM (ICH8M/ICH8M-E) SATA Controller
[AHCI mode] (rev 02)
```

Lspci -s

```
Actividades Terminal 30 de may 12:00
kabu@debian: ~
root@debian:/# lspci -s
lspci: option requires an argument -- 's'
Usage: lspci [<switches>]

Basic display modes:
-mm          Produce machine-readable output (single -m for an obsolete format)
-t          Show bus tree

Display options:
-v          Be verbose (-vv or -vvv for higher verbosity)
-k          Show kernel drivers handling each device
-x          Show hex-dump of the standard part of the config space
-xxx        Show hex-dump of the whole config space (dangerous; root only)
-xxxx       Show hex-dump of the 4096-byte extended config space (root only)
-b          Bus-centric view (addresses and IRQ's as seen by the bus)
-D          Always show domain numbers
-P          Display bridge path in addition to bus and device number
-PP         Display bus path in addition to bus and device number

Resolving of device ID's to names:
-n          Show numeric ID's
-nn         Show both textual and numeric ID's (names & numbers)
-q          Query the PCI ID database for unknown ID's via DNS
-qq         As above, but re-query locally cached entries
-Q          Query the PCI ID database for all ID's via DNS
```

Lsusb -v



```
root@debian:/# lsusb -v
```

```
Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
```

```
Device Descriptor:
```

```
  bLength                18
  bDescriptorType         1
  bcdUSB                  2.00
  bDeviceClass             9 Hub
  bDeviceSubClass          0
  bDeviceProtocol          0 Full speed (or root) hub
  bMaxPacketSize0          64
  idVendor                 0x1d6b Linux Foundation
  idProduct                0x0002 2.0 root hub
  bcdDevice                6.01
  iManufacturer            3 Linux 6.1.0-21-amd64 ehci_hcd
  iProduct                 2 EHCI Host Controller
  iSerial                  1 0000:00:0b.0
  bNumConfigurations       1
```

```
Configuration Descriptor:
```

```
  bLength                9
  bDescriptorType         2
  wTotalLength            0x0019
  bNumInterfaces           1
  bConfigurationValue      1
  iConfiguration           0
```

```
Lsusb -vv
```

```
Actividades Terminal 30 de may 12:02
kabu@debian: ~
root@debian:/# lsusb -vv

Bus 001 Device 001: ID 1d6b:0002 Linux Foundation 2.0 root hub
Device Descriptor:
  bLength                18
  bDescriptorType         1
  bcdUSB                  2.00
  bDeviceClass             9 Hub
  bDeviceSubClass          0
  bDeviceProtocol          0 Full speed (or root) hub
  bMaxPacketSize0          64
  idVendor                 0x1d6b Linux Foundation
  idProduct                0x0002 2.0 root hub
  bcdDevice                6.01
  iManufacturer            3 Linux 6.1.0-21-amd64 ehci_hcd
  iProduct                 2 EHCI Host Controller
  iSerial                  1 0000:00:0b.0
  bNumConfigurations       1
Configuration Descriptor:
  bLength                9
  bDescriptorType         2
  wTotalLength             0x0019
  bNumInterfaces           1
  bConfigurationValue      1
  iConfiguration           0
```

Lsusb -t

```
root@debian:/# lsusb -t
/?: Bus 02.Port 1: Dev 1, Class=root_hub, Driver=ohci-pci/12p, 12M
    |__ Port 1: Dev 2, If 0, Class=Human Interface Device, Driver=usbhid, 12M
/?: Bus 01.Port 1: Dev 1, Class=root_hub, Driver=ehci-pci/12p, 480M
root@debian:/#
```

Lsmod


```
Actividades Terminal 30 de may 12:04
kabu@debian: ~
root@debian:/# lsmod
Module                Size  Used by
snd_seq_dummy         16384  0
snd_hrtimer           16384  1
snd_seq              90112  7 snd_seq_dummy
snd_seq_device        16384  1 snd_seq
rfkill                36864  3
qrtr                  49152  4
intel_rapl_msr        20480  0
intel_rapl_common     32768  1 intel_rapl_msr
intel_pmc_core        53248  0
intel_powerclamp      20480  0
ghash_clmulni_intel   16384  0
sha512_ssse3          49152  0
sha512_generic        16384  1 sha512_ssse3
sha256_ssse3          32768  0
sha1_ssse3            32768  0
snd_intel8x0          49152  1
snd_ac97_codec        176128 1 snd_intel8x0
aesni_intel          393216 0
ac97_bus              16384  1 snd_ac97_codec
crypto_simd           16384  1 aesni_intel
snd_pcm              159744 2 snd_intel8x0,snd_ac97_codec
cryptd                28672  2 crypto_simd,ghash_clmulni_intel
rapl                  20480  0
```

Modinfo video

```
Actividades Terminal 30 de may 12:07
kabu@debian: ~
root@debian:/# modinfo video
filename:      /lib/modules/6.1.0-21-amd64/kernel/drivers/acpi/video.ko
license:      GPL
description:   ACPI Video Driver
author:       Bruno Ducrot
alias:        acpi*:LNKVIDEO:*
depends:       wmi
retpoline:    Y
intree:       Y
name:         video
vermagic:     6.1.0-21-amd64 SMP preempt mod_unload modversions
sig_id:       PKCS#7
signer:       Debian Secure Boot CA
sig_key:      32:A0:28:7F:84:1A:03:6F:A3:93:C1:E0:65:C4:3A:E6:B2:42:26:43
sig_hashalgo: sha256
signature:    AC:98:2E:AC:D7:A1:3D:CF:25:28:AA:D2:F3:1C:33:40:95:EB:35:66:
              B9:D2:55:14:9A:B3:D9:F7:B9:7F:C2:CD:9A:E5:40:93:77:07:1F:6D:
              BD:6D:FD:98:9A:5E:0E:24:0A:CE:89:48:21:AD:C6:3F:A4:B8:73:C7:
              AC:CC:8F:1C:92:3A:7C:0E:A3:A5:EA:24:0A:E9:5A:D6:C6:59:EF:D2:
              8B:6F:52:87:2C:A1:15:70:7B:CA:0D:94:87:1F:47:7B:FC:6D:74:80:
              7B:16:8E:F4:FA:FF:9F:84:AF:92:7A:92:CA:5B:41:46:CD:DB:E4:D5:
              30:F9:12:2C:C7:CF:DC:5B:DA:64:85:C4:0B:83:C1:8E:ED:5C:FB:B9:
              81:02:E6:21:BF:7C:05:86:CE:D2:89:FA:D5:81:35:33:27:E5:57:C7:
              94:E8:14:04:37:EC:B8:5F:22:CB:A2:58:54:EF:9B:79:76:3A:84:ED:
              EA:45:AC:3C:61:6C:64:FA:3E:F2:F4:18:E5:16:3A:F3:20:63:E2:82:
```

Modinfo

```
Debian [Running] - Oracle VM VirtualBox
File Machine View Input Devices Help
bash: ./modinfo: orden no encontrada
root@debian:/# insmod nns
insmod: ERROR: could not load module nns: No such file or directory
root@debian:/# modinfo nns
modinfo: ERROR: Module nns not found.
root@debian:/# du -hs
werqwerqwu: no se puede acceder a './proc/3223/task/3223/fd/4': No existe el directorio
du: no se puede acceder a './proc/3223/task/3223/fdinfo/4': No existe el directorio
du: no se puede acceder a './proc/3223/fd/3': No existe el fichero o el directorio
du: no se puede acceder a './proc/3223/fdinfo/3': No existe el fichero o el directorio
du: no se puede acceder a './run/user/1000/doc': Permiso denegado
du: no se puede acceder a './run/user/1000/gvfs': Permiso denegado
5,5G      .
root@debian:/# ls /usr/bin | grep modinfo
root@debian:/# ls /usr/bin | grep modinfo
root@debian:/# ls /usr/bin | grep modinfo
ls: no se puede acceder a '/usr/bin': No existe el fichero o el directorio
root@debian:/# ls /usr/sbin | grep modinfo
modinfo
root@debian:/#
```