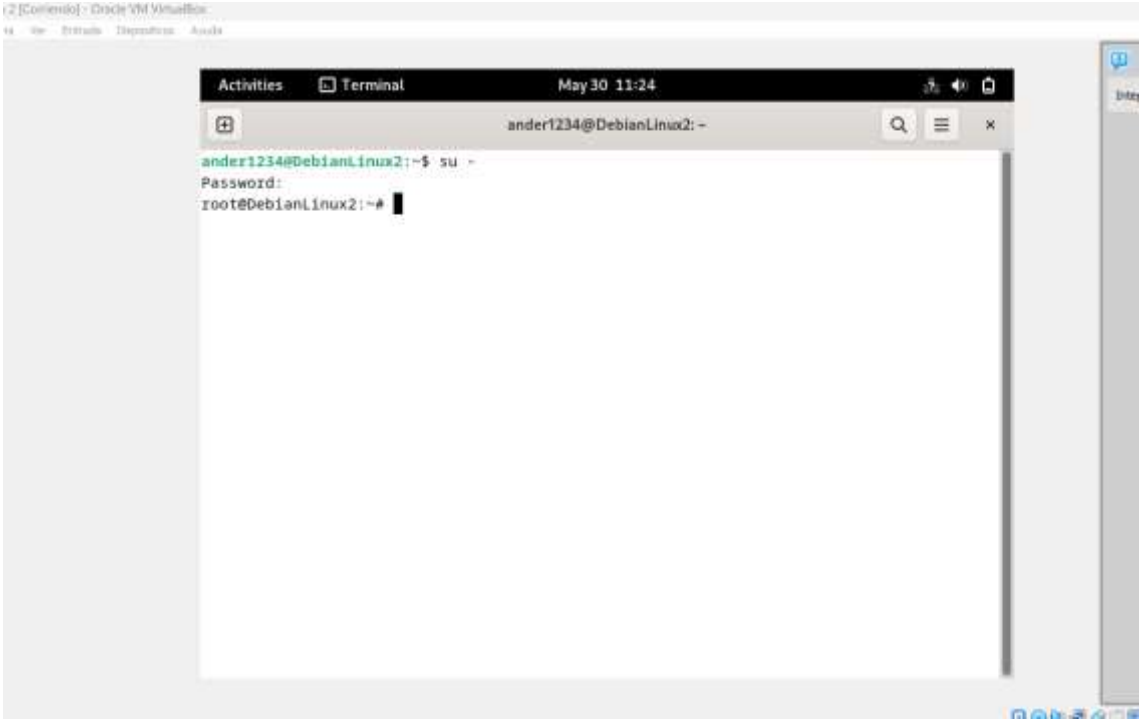
Taller 6

Entrar al terminal como usuario root



Enlistas los módulos

Entrar al módulo lib

Taller 6

```
root@DebianLinux2:/# cd /lib
root@DebianLinux2:/lib#
```

Ingresar modulo “modules”, entrar dentro del modulo

```
root@DebianLinux2:/lib# cd modules
root@DebianLinux2:/lib/modules#
```

Versión de Linux Se puede ver que hay dos versiones

```
root@DebianLinux2:/lib/modules# ls
6.1.0-18-amd64  6.1.0-21-amd64
```

```
root@DebianLinux2:/lib/modules# cd 6.1.0-21-amd64
root@DebianLinux2:/lib/modules/6.1.0-21-amd64#
```

Modulos de una de las versiones

Entrar carpeta kernel

```
root@DebianLinux2:/lib/modules/6.1.0-18-amd64# cd kernel
root@DebianLinux2:/lib/modules/6.1.0-18-amd64/kernel#
```

Listar todo el contenido

```
root@DebianLinux2:/lib/modules/6.1.0-18-amd64/kernel# du
120     ./drivers/extcon
84      ./drivers/gpu/drm/hyperv
176     ./drivers/gpu/drm/mgag200
196     ./drivers/gpu/drm/ttm
116     ./drivers/gpu/drm/vboxvideo
88      ./drivers/gpu/drm/udl
232     ./drivers/gpu/drm/virtio
7560    ./drivers/gpu/drm/i915
40      ./drivers/gpu/drm/vgem
128     ./drivers/gpu/drm/tiny
18952   ./drivers/gpu/drm/amd/amdgpu
18956   ./drivers/gpu/drm/amd
392     ./drivers/gpu/drm/display
3332    ./drivers/gpu/drm/radeon
5032    ./drivers/gpu/drm/nouveau
104     ./drivers/gpu/drm/scheduler
504     ./drivers/gpu/drm/gma500
116     ./drivers/gpu/drm/xen
168     ./drivers/gpu/drm/ast
224     ./drivers/gpu/drm/qxl
924     ./drivers/gpu/drm/vmwgfx
128     ./drivers/gpu/drm/i2c
```

Ver el espacio

Taller 6

```
root@DebianLinux2:/lib/modules/6.1.0-18-amd64/kernel# du -hs
389M    .
```

Salir de todos los módulos y directorios en un solo comando

```
root@DebianLinux2:/lib/modules/6.1.0-18-amd64/kernel# cd /.
root@DebianLinux2:/#
```

Información del hardware

Lspci: información de todos los kernel que tiene conectados

```
root@DebianLinux2:/# 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)
```

Amplia la información más a detalle lspci -v

```
root@DebianLinux2:/# 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]
```

Mostrar información del dispositivo seleccionado

Taller 6

```
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
```

Información de todos los buses que tiene conectado

```
root@DebianLinux2:/# 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
```

lsusb -v: Información de tallada sobre los dispositivos USB conectados al sistema

lsusb -vv: Información más detallada

lsusb -s: Listas los dispositivos USB conectados

```
root@DebianLinux2:/# 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
```

Taller 6

lsusb-t: Información en árbol y la velocidad del puerto USB

```
root@DebianLinux2:/# 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
```

Lsmod: Muestra módulos cargados en el sistema

```
root@DebianLinux2:/# 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
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
ac97_bus               16384  1 snd_ac97_codec
snd_pcm               159744  2 snd_intel8x0,snd_ac97_codec
```

modinfo -Nombre módulo-

Ampliar la información del modulo “video”

```
root@DebianLinux2:/# 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*:LNXVIDEO:*
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:
```

Taller 6

Módulos cargados que tiene el Linux- para utilizar el modinfor

```
root@DebianLinux2:/# ls /urs /bin/ | grep u
ls: cannot access '/urs': No such file or directory
aa-features-abi
```

Buscar el listado del módulo BIN

```
root@DebianLinux2:/# ls /urs /bin/ | grep u
ls: cannot access '/urs': No such file or directory
aa-features-abi
alsaucm
aseqdump
b2sum
bashbug
bdftruncate
bluemoon
bluetoothctl
bluetooth-sendto
bogotune
bogotune-bdb
bogoupgrade
bogoupgrade-bdb
bogoutil
bogoutil-bdb
buildhash
bunzip2
busctl
busybox
cd-iccdump
```