

# Conocer el hardware en linea de comandos (shell)

## Comandos para identificar hardware y configuraciones específicas

### Hardware

#### Información procesador

```
# grep 'vendor_id' /proc/cpuinfo ; grep 'model name' /proc/cpuinfo ; grep 'cpu MHz' /proc/cpuinfo
vendor_id      : GenuineIntel
vendor_id      : GenuineIntel
vendor_id      : GenuineIntel
vendor_id      : GenuineIntel
vendor_id      : GenuineIntel
vendor_id      : GenuineIntel
vendor_id      : GenuineIntel
vendor_id      : GenuineIntel
vendor_id      : GenuineIntel
vendor_id      : GenuineIntel
vendor_id      : GenuineIntel
vendor_id      : GenuineIntel
model name     : Intel(R) Xeon(R) E-2136 CPU @ 3.30GHz
model name     : Intel(R) Xeon(R) E-2136 CPU @ 3.30GHz
model name     : Intel(R) Xeon(R) E-2136 CPU @ 3.30GHz
model name     : Intel(R) Xeon(R) E-2136 CPU @ 3.30GHz
```

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model name      : Intel(R) Xeon(R) E-2136 CPU @ 3.30GHz
model name      : Intel(R) Xeon(R) E-2136 CPU @ 3.30GHz
cpu MHz         : 848.767
cpu MHz         : 950.482
cpu MHz         : 800.024
cpu MHz         : 869.512
cpu MHz         : 823.590
cpu MHz         : 800.024
cpu MHz         : 799.822
cpu MHz         : 851.184
cpu MHz         : 802.642
cpu MHz         : 1182.916
cpu MHz         : 1121.081
cpu MHz         : 802.441
```

## Marca procesador

Si el procesador es intel el comando de abajo devolvera algo

```
# grep -i vmx /proc/cpuinfo
```

Si el procesador es AMD el comando de abajo devolverá algo

```
# grep -i svm /proc/cpuinfo
```

## Discos duros

### lsblk (info particiones)

```
lsblk
NAME        MAJ:MIN RM  SIZE RO TYPE  MOUNTPOINT
sda          8:0    0   3,7T  0 disk
└─sda1       8:1    0   511M  0 part  /boot/efi
```

```

└─sda2   8:2   0   50G   0 part
| └─md2   9:2   0   50G   0 raid1 /
└─sda3   8:3   0   511M   0 part  [SWAP]
└─sda4   8:4   0 1000G   0 part
| └─md4   9:4   0 1000G   0 raid1 /var
└─sda5   8:5   0   2,6T   0 part
    └─md5   9:5   0   2,6T   0 raid1 /home
sdb      8:16   0   3,7T   0 disk
└─sdb1   8:17   0   511M   0 part
└─sdb2   8:18   0    50G   0 part
| └─md2   9:2   0    50G   0 raid1 /
└─sdb3   8:19   0   511M   0 part  [SWAP]
└─sdb4   8:20   0 1000G   0 part
| └─md4   9:4   0 1000G   0 raid1 /var
└─sdb5   8:21   0   2,6T   0 part
    └─md5   9:5   0   2,6T   0 raid1 /home
loop0    7:0    0    2,2G   0 loop  /var/tmp

```

## Discos duros (Atributos)

```

# blkid
/dev/md4: LABEL="/var" UUID="bfa920a1-48e4-4d4e-ad9a-1f5289ec630e" TYPE="ext4"
/dev/sdb4: UUID="0ceedb71-9478-ba95-a4d2-adc226fd5302" TYPE="linux_raid_member"
PARTLABEL="logical" PARTUUID="9ba975e1-1b14-49d3-8971-b936e8d5e4e4"
/dev/sda4: UUID="0ceedb71-9478-ba95-a4d2-adc226fd5302" TYPE="linux_raid_member"
PARTLABEL="logical" PARTUUID="66b5b2c5-7be1-49e5-a792-9f87e2f7b4f5"
/dev/sda1: LABEL="EFI_SYSPART" UUID="42B6-5CF2" TYPE="vfat" PARTLABEL="primary"
PARTUUID="da4d4fc9-d837-41d9-a107-e742798f9335"
/dev/sda2: UUID="facf2df2-7b51-d62e-a4d2-adc226fd5302" TYPE="linux_raid_member"
PARTLABEL="primary" PARTUUID="d9d59890-5495-4d5c-b1a1-9c7cb06ea760"
/dev/sda3: LABEL="swap-sda3" UUID="b3455011-b526-4882-9103-53aea1ba8861" TYPE="swap"
PARTLABEL="primary" PARTUUID="b5bd8cbf-6bd4-484d-a66f-95e026322fe3"
/dev/sda5: UUID="8841cb2a-ce20-324b-a4d2-adc226fd5302" TYPE="linux_raid_member"
PARTLABEL="logical" PARTUUID="0a0c4007-1aa6-4bbd-8c94-b059e5e47a0e"
/dev/sdb1: LABEL="EFI_SYSPART" UUID="42EC-11F4" TYPE="vfat" PARTLABEL="primary"
PARTUUID="96828372-cc5c-4f44-bfc4-0758c394b1bb"
/dev/sdb2: UUID="facf2df2-7b51-d62e-a4d2-adc226fd5302" TYPE="linux_raid_member"
PARTLABEL="primary" PARTUUID="ea54dfc3-e5c8-4436-be12-9515d1f1f0f1"
/dev/sdb3: LABEL="swap-sdb3" UUID="7bf2c3e0-e995-4dbf-9edf-de91db5cc4e0" TYPE="swap"
PARTLABEL="primary" PARTUUID="0581737a-20c0-44b7-957c-6190b583f1af"

```

```
/dev/sdb5: UUID="8841cb2a-ce20-324b-a4d2-adc226fd5302" TYPE="linux_raid_member"
PARTLABEL="logical" PARTUUID="c02afe0d-c242-4dd9-8ec7-77ecd90e510b"
/dev/md2: LABEL="/" UUID="424a9e66-51b2-4947-97b2-0d632d79a97f" TYPE="ext4"
/dev/md5: LABEL="/home" UUID="0de14a77-8d9e-4f25-9c1b-bec542d45f22" TYPE="ext4"
/dev/loop0: UUID="8fa0ffb8-aaa1-4321-9d4f-d55a9b021bcc" TYPE="ext3"
```

## Estado solido o mecánico

Devuelve 0 por SSD y 1 por discos mecánicos

```
cat /sys/block/sda/queue/rotational
```

## Discos NVMe

Necesitamos ewl paquete (Ubuntu) nmve-cli para comprobar discos de tipo NVMe

```
# nvme list
```

Node	SN	Model	Namespace
Usage	Format	FW Rev	
-----			
-----			
/dev/nvme0n1	S439NE0N101969	SAMSUNG MZQLB1T9HAJR-00007	1
958.95 GB /	1.92 TB 512 B +	0 B EDA5202Q	
/dev/nvme1n1	S439NE0N101968	SAMSUNG MZQLB1T9HAJR-00007	1
1.69 TB /	1.92 TB 512 B +	0 B EDA5202Q	

## Discos duros (hdparm)

El comando hdparm puede que no este instalado en tu distribución.

```
yum install hdparm -y
```

```
# hdparm -I /dev/sda
```

```
/dev/sda:
```

ATA device, with non-removable media

Model Number: HGST HUS726040ALA610

Serial Number: N8GNY2YY

Firmware Revision: A5GNT920

Transport: Serial, ATA8-AST, SATA 1.0a, SATA II Extensions, SATA Rev 2.5,

Standards:

Used: unknown (minor revision code 0x0029)

Supported: 9 8 7 6 5

Likely used: 9

Configuration:

Logical	max	current
cylinders	16383	16383
heads	16	16
sectors/track	63	63

--

CHS current addressable sectors: 16514064

LBA user addressable sectors: 268435455

LBA48 user addressable sectors: 7814037168

Logical Sector size: 512 bytes

Physical Sector size: 512 bytes

device size with M = 1024\*1024: 3815447 MBytes

device size with M = 1000\*1000: 4000787 MBytes (4000 GB)

cache/buffer size = unknown

Form Factor: 3.5 inch

Nominal Media Rotation Rate: 7200

Capabilities:

LBA, IORDY(can be disabled)

Queue depth: 32

Standby timer values: spec'd by Standard, no device specific minimum

R/W multiple sector transfer: Max = 16 Current = 16

Advanced power management level: 254

DMA: mdma0 mdma1 mdma2 udma0 udma1 udma2 udma3 udma4 udma5 \*udma6

Cycle time: min=120ns recommended=120ns

PIO: pio0 pio1 pio2 pio3 pio4

Cycle time: no flow control=120ns IORDY flow control=120ns

Commands/features:

Enabled Supported:

- \* SMART feature set
- Security Mode feature set
- \* Power Management feature set
- \* Write cache
- \* Look-ahead
- \* Host Protected Area feature set

- \* WRITE\_BUFFER command
- \* READ\_BUFFER command
- \* NOP cmd
- \* DOWNLOAD\_MICROCODE
- \* Advanced Power Management feature set
- Power-Up In Standby feature set
- \* SET\_FEATURES required to spinup after power up
- SET\_MAX security extension
- \* 48-bit Address feature set
- \* Device Configuration Overlay feature set
- \* Mandatory FLUSH\_CACHE
- \* FLUSH\_CACHE\_EXT
- \* SMART error logging
- \* SMART self-test
- \* Media Card Pass-Through
- \* General Purpose Logging feature set
- \* WRITE\_{DMA|MULTIPLE}\_FUA\_EXT
- \* 64-bit World wide name
- \* URG for READ\_STREAM[\_DMA]\_EXT
- \* URG for WRITE\_STREAM[\_DMA]\_EXT
- \* WRITE\_UNCORRECTABLE\_EXT command
- \* {READ,WRITE}\_DMA\_EXT\_GPL commands
- \* Segmented DOWNLOAD\_MICROCODE
- \* unknown 119[6]
- unknown 119[7]
- \* Gen1 signaling speed (1.5Gb/s)
- \* Gen2 signaling speed (3.0Gb/s)
- \* Gen3 signaling speed (6.0Gb/s)
- \* Native Command Queueing (NCQ)
- \* Host-initiated interface power management
- \* Phy event counters
- \* NCQ priority information
- \* unknown 76[15]
- Non-Zero buffer offsets in DMA Setup FIS
- \* DMA Setup Auto-Activate optimization
- Device-initiated interface power management
- In-order data delivery
- \* Software settings preservation
- unknown 78[7]

```
        unknown 78[10]
        unknown 78[11]
    *    SMART Command Transport (SCT) feature set
    *    SCT Write Same (AC2)
    *    SCT Error Recovery Control (AC3)
    *    SCT Features Control (AC4)
    *    SCT Data Tables (AC5)
    *    reserved 69[3]
    *    reserved 69[4]
    *    WRITE BUFFER DMA command
    *    READ BUFFER DMA command
```

#### Security:

```
    Master password revision code = 65534
        supported
not    enabled
not    locked
not    frozen
not    expired: security count
not    supported: enhanced erase
```

Logical Unit WWN Device Identifier: 5000cca244c984a4

```
    NAA                : 5
    IEEE OUI           : 000cca
    Unique ID          : 244c984a4
```

Checksum: correct

## lshw

```
lshw -class disk -class storage
```

```
*-sata
```

```
    description: SATA controller
    product: Cannon Lake PCH SATA AHCI Controller
    vendor: Intel Corporation
    physical id: 17
    bus info: pci@0000:00:17.0
    logical name: scsi0
    logical name: scsi1
    version: 10
    width: 32 bits
    clock: 66MHz
```

```

capabilities: sata msi pm ahci_1.0 bus_master cap_list emulated
configuration: driver=ahci latency=0
resources: irq:125 memory:91200000-91201fff memory:91203000-912030ff
ioport:4050(size=8) ioport:4040(size=4) ioport:4020(size=32) memory:91202000-912027ff
*-disk:0
    description: ATA Disk
    product: HGST HUS726040AL
    physical id: 0
    bus info: scsi@0:0.0.0
    logical name: /dev/sda
    version: T920
    serial: N8GNY2YY
    size: 3726GiB (4TB)
    capabilities: gpt-1.00 partitioned partitioned:gpt
    configuration: ansiversion=5 guid=9aa4231a-644b-40c9-9105-0e980dbeeeaa
logicalsectorsize=512 sectorsize=512
*-disk:1
    description: ATA Disk
    product: HGST HUS726040AL
    physical id: 1
    bus info: scsi@1:0.0.0
    logical name: /dev/sdb
    version: T920
    serial: K4KRJ0KB
    size: 3726GiB (4TB)
    capabilities: gpt-1.00 partitioned partitioned:gpt
    configuration: ansiversion=5 guid=2cla29d1-8bb6-4d02-9990-b9f2fb7b3414
logicalsectorsize=512 sectorsize=512

```

```

# lshw -short -C disk
H/W path      Device      Class      Description
=====
/0/100/17/0   /dev/sda    disk       4TB HGST HUS726040AL
/0/100/17/1   /dev/sdb    disk       4TB HGST HUS726040AL

```

## smartctl

Importante para ver el estado de tus discos. Sobre todo cuando compras o alquilas hardware



```
smartctl -d ata -a -i /dev/sda
smartctl 7.0 2018-12-30 r4883 [x86_64-linux-3.10.0-962.3.2.lve1.5.49.el7.x86_64] (local build)
Copyright (C) 2002-18, Bruce Allen, Christian Franke, www.smartmontools.org
```

=== START OF INFORMATION SECTION ===

```
Model Family:      HGST Ultrastar 7K6000
Device Model:      HGST HUS726040ALA610
Serial Number:     N8GNY2YY
LU WWN Device Id: 5 000cca 244c984a4
Firmware Version:  A5GNT920
User Capacity:     4.000.787.030.016 bytes [4,00 TB]
Sector Size:       512 bytes logical/physical
Rotation Rate:     7200 rpm
Form Factor:       3.5 inches
Device is:         In smartctl database [for details use: -P show]
ATA Version is:    ACS-2, ATA8-ACS T13/1699-D revision 4
SATA Version is:   SATA 3.1, 6.0 Gb/s (current: 6.0 Gb/s)
Local Time is:     Sun May 16 17:57:14 2021 CEST
SMART support is:  Available - device has SMART capability.
SMART support is:  Enabled
```

```
=== START OF READ SMART DATA SECTION ===
```

SMART overall-health self-assessment test result: PASSED

General SMART Values:

[illegible]

Self-test execution status: ( 0) The previous self-test routine completed  
without error or no self-test has ever  
been run.

Total time to complete Offline  
data collection: ( 113) seconds.

```
Offline data collection
capabilities:          (0x5b) SMART execute Offline immediate.
                        Auto Offline data collection on/off support.
                        Suspend Offline collection upon new
                        command.
                        Offline surface scan supported.
                        Self-test supported.
```

No Conveyance Self-test supported.

Selective Self-test supported.

SMART capabilities: (0x0003) Saves SMART data before entering power-saving mode.

Supports SMART auto save timer.

Error logging capability: (0x01) Error logging supported.

General Purpose Logging supported.

Short self-test routine

recommended polling time: ( 2) minutes.

Extended self-test routine

recommended polling time: ( 571) minutes.

SCT capabilities: (0x003d) SCT Status supported.

SCT Error Recovery Control supported.

SCT Feature Control supported.

SCT Data Table supported.

SMART Attributes Data Structure revision number: 16

Vendor Specific SMART Attributes with Thresholds:

ID#	ATTRIBUTE_NAME	FLAG	VALUE	WORST	THRESH	TYPE	UPDATED	WHEN_FAILED
RAW_VALUE								
1	Raw_Read_Error_Rate	0x000b	100	100	016	Pre-fail	Always	0
2	Throughput_Performance	0x0005	135	135	054	Pre-fail	Offline	112
3	Spin_Up_Time	0x0007	184	184	024	Pre-fail	Always	265
(Average 315)								
4	Start_Stop_Count	0x0012	100	100	000	Old_age	Always	80
5	Reallocated_Sector_Ct	0x0033	100	100	005	Pre-fail	Always	0
7	Seek_Error_Rate	0x000b	100	100	067	Pre-fail	Always	0
8	Seek_Time_Performance	0x0005	128	128	020	Pre-fail	Offline	18
9	Power_On_Hours	0x0012	097	097	000	Old_age	Always	27686
10	Spin_Retry_Count	0x0013	100	100	060	Pre-fail	Always	0
12	Power_Cycle_Count	0x0032	100	100	000	Old_age	Always	75
192	Power-Off_Retract_Count	0x0032	080	080	000	Old_age	Always	24197
193	Load_Cycle_Count	0x0012	080	080	000	Old_age	Always	24197
194	Temperature_Celsius	0x0002	162	162	000	Old_age	Always	37
(Min/Max 19/52)								
196	Reallocated_Event_Count	0x0032	100	100	000	Old_age	Always	0
197	Current_Pending_Sector	0x0022	100	100	000	Old_age	Always	0
198	Offline_Uncorrectable	0x0008	100	100	000	Old_age	Offline	0
199	UDMA_CRC_Error_Count	0x000a	200	200	000	Old_age	Always	0

SMART Error Log Version: 1

No Errors Logged

SMART Self-test log structure revision number 1

Num	Test_Description	Status	Remaining	LifeTime(hours)	
LBA_of_first_error					
# 1	Short offline	Completed without error	00%	26073	-
# 2	Short offline	Completed without error	00%	26058	-
# 3	Short offline	Completed without error	00%	26058	-
# 4	Short offline	Completed without error	00%	16865	-
# 5	Short offline	Completed without error	00%	16850	-
# 6	Short offline	Completed without error	00%	16850	-
# 7	Short offline	Completed without error	00%	15329	-
# 8	Short offline	Completed without error	00%	15314	-
# 9	Short offline	Completed without error	00%	15314	-
#10	Short offline	Completed without error	00%	15288	-
#11	Short offline	Completed without error	00%	15278	-
#12	Short offline	Completed without error	00%	15264	-
#13	Short offline	Completed without error	00%	15264	-
#14	Short offline	Completed without error	00%	15249	-
#15	Short offline	Completed without error	00%	15249	-
#16	Short offline	Completed without error	00%	15099	-
#17	Short offline	Completed without error	00%	29	-
#18	Short offline	Completed without error	00%	23	-
#19	Short offline	Completed without error	00%	23	-
#20	Short offline	Completed without error	00%	2	-

SMART Selective self-test log data structure revision number 1

SPAN	MIN_LBA	MAX_LBA	CURRENT_TEST_STATUS
1	0	0	Not_testing
2	0	0	Not_testing
3	0	0	Not_testing
4	0	0	Not_testing
5	0	0	Not_testing

Selective self-test flags (0x0):

After scanning selected spans, do NOT read-scan remainder of disk.

If Selective self-test is pending on power-up, resume after 0 minute delay.

## Estado del RAID pro software

```
cat /proc/mdstat
Personalities : [raid1]
md5 : active raid1 sda5[0] sdb5[1]
      2804960192 blocks [2/2] [UU]
      bitmap: 12/21 pages [48KB], 65536KB chunk

md4 : active raid1 sdb4[1] sda4[0]
      1048573888 blocks [2/2] [UU]
      bitmap: 4/8 pages [16KB], 65536KB chunk

md2 : active raid1 sdb2[1] sda2[0]
      52427712 blocks [2/2] [UU]
```

# Hardware información general

## Hardware información general resumida

```
# lshw -short
H/W path      Device      Class        Description
=====
                system          To Be Filled By O.E.M. (To Be Filled By O.E.M.)
/0              bus          E3C242D4U2-2T
/0/0            memory       64KiB BIOS
/0/9            memory       32GiB System Memory
/0/9/0          memory       16GiB DIMM DDR4 Synchronous 2666 MHz (0,4 ns)
/0/9/1          memory       DIMM [empty]
/0/9/2          memory       16GiB DIMM DDR4 Synchronous 2666 MHz (0,4 ns)
/0/9/3          memory       DIMM [empty]
/0/14           memory       384KiB L1 cache
/0/15           memory       1536KiB L2 cache
/0/16           memory       12MiB L3 cache
/0/17           processor    Intel(R) Xeon(R) E-2136 CPU @ 3.30GHz
/0/100          bridge       8th Gen Core Processor Host Bridge/DRAM Registers
/0/100/8        generic      Xeon E3-1200 v5/v6 / E3-1500 v5 / 6th/7th/8th Gen
Core Processor Gaussian Mixture Model
/0/100/12       generic      Cannon Lake PCH Thermal Controller
/0/100/14       bus          Cannon Lake PCH USB 3.1 xHCI Host Controller
/0/100/14/0     usb1         bus          xHCI Host Controller
/0/100/14/1     usb2         bus          xHCI Host Controller
```

/0/100/14.2		memory	RAM memory
/0/100/15		bus	Cannon Lake PCH Serial IO I2C Controller #0
/0/100/15.1		bus	Cannon Lake PCH Serial IO I2C Controller #1
/0/100/16		communication	Cannon Lake PCH HECI Controller
/0/100/16.4		communication	Cannon Lake PCH HECI Controller #2
/0/100/17	scsi0	storage	Cannon Lake PCH SATA AHCI Controller
/0/100/17/0	/dev/sda	disk	4TB HGST HUS726040AL
/0/100/17/0/1	/dev/sda1	volume	510MiB Windows FAT volume
/0/100/17/0/2	/dev/sda2	volume	49GiB EXT4 volume
/0/100/17/0/3	/dev/sda3	volume	510MiB Linux swap volume
/0/100/17/0/4	/dev/sda4	volume	999GiB EXT4 volume
/0/100/17/0/5	/dev/sda5	volume	2675GiB EXT4 volume
/0/100/17/1	/dev/sdb	disk	4TB HGST HUS726040AL
/0/100/17/1/1	/dev/sdb1	volume	510MiB Windows FAT volume
/0/100/17/1/2	/dev/sdb2	volume	49GiB EXT4 volume
/0/100/17/1/3	/dev/sdb3	volume	510MiB Linux swap volume
/0/100/17/1/4	/dev/sdb4	volume	999GiB EXT4 volume
/0/100/17/1/5	/dev/sdb5	volume	2675GiB EXT4 volume
/0/100/1b		bridge	Cannon Lake PCH PCI Express Root Port #21
/0/100/1b/0	eth0	network	Ethernet Controller 10G X550T
/0/100/1b/0.1	eth1	network	Ethernet Controller 10G X550T
/0/100/1c		bridge	Cannon Lake PCH PCI Express Root Port #1
/0/100/1c/0		bridge	AST1150 PCI-to-PCI Bridge
/0/100/1c/0/0		display	ASPEED Graphics Family
/0/100/1d		bridge	Cannon Lake PCH PCI Express Root Port #9
/0/100/1e		communication	Cannon Lake PCH Serial IO UART Host Controller
/0/100/1f		bridge	Intel Corporation
/0/100/1f.4		bus	Cannon Lake PCH SMBus Controller
/0/100/1f.5		bus	Cannon Lake PCH SPI Controller
/0/1		system	PnP device PNP0c02
/0/2		system	PnP device PNP0c02
/0/3		communication	PnP device PNP0501
/0/4		communication	PnP device PNP0501
/0/5		system	PnP device PNP0c02
/0/6		generic	PnP device INT3f0d
/0/7		system	PnP device PNP0c02
/0/8		system	PnP device PNP0c02
/0/a		system	PnP device PNP0c02
/0/b		system	PnP device PNP0c02

# Hardware información general detallada

```
# lshw | less
```

## MegaCli

MegaCli es una herramienta específica de la familia de controladoras **LSI MegaRaid**

Aunque muchos manuales identifican los comandos unas veces en minúsculas, otros con alternancia de mayúsculas y minúsculas, lo mejor es crear un alias, apuntado al que corresponda. Si te falla alguna información en algún tip, que ves por internet esa es la razón.

En mi caso uso MegaCli ya que hice en su día `ln -s /usr/sbin/megacli MegaCli`

## Conocer el estado de la controladora

```
root@pro02:~# MegaCli -EncInfo -aALL
```

```
Number of enclosures on adapter 0 -- 1
```

```
Enclosure 0:
```

```
Device ID                : 252
Number of Slots           : 8
Number of Power Supplies  : 0
Number of Fans            : 0
Number of Temperature Sensors : 0
Number of Alarms          : 0
Number of SIM Modules     : 1
Number of Physical Drives : 8
Status                   : Normal
Position                 : 1
Connector Name           : Unavailable
Enclosure type           : SGPIO
FRU Part Number          : N/A
Enclosure Serial Number  : N/A
ESM Serial Number        : N/A
Enclosure Zoning Mode    : N/A
Partner Device Id        : Unavailable
```

```
Inquiry data             :
```

Vendor Identification	: AVAGO
Product Identification	: SGPIO
Product Revision Level	: N/A
Vendor Specific	:

Exit Code: 0x00

# Sistema

## Arquitectura

lshw no tiene porque estar disponible en tu distribucion. Si es asi instalalo o busca alternativa.

```
# sudo lshw -C CPU | grep width  
width: 64 bits
```

## Enlaces y agradecimientos

- [How to find out Hard Disk Specks /Deatis on Linux](#)
- [Using NVMe Command Line Tools to Check NVMe Flash Health](#)

### Aviso

Esta documentación y su contenido, no implica que funcione en tu caso o determinados casos. También implica que tienes conocimientos sobre lo que trata, y que en cualquier caso tienes copias de seguridad. El contenido el contenido se entrega, tal y como está, sin que ello implique ningún obligación ni responsabilidad por parte de [Castris](#)

Si necesitas soporte profesional puedes contratar con Castris [soporte profesional](#).

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