

M5	Fonaments de maquinari
UF2 1.2	Diagnosi i manteniment

Tasca a fer:

1.- A partir d'una distribució Linux, executa els comandaments que tens a continuació i indica quina informació et dona cada un (pots fer una captura de pantalla en l'execució de cada comandament per tal que posteriorment poguem interpretar la informació)

1. Indica tota la informació referent a CPU, RAM, placa i ports i bus d'expansió utilitzant comandes de linux. Pots utilitzar: lshw, lspci, cat /proc/cpuinfo, cat /proc/meminfo

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CPU

RAM

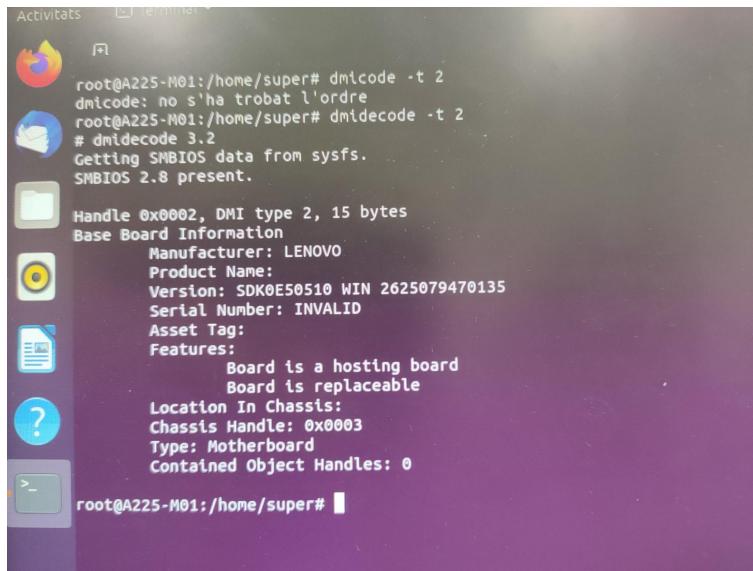
```
# dmidecode 3.2
Getting SMBIOS data from sysfs.
SMBIOS 2.8 present.

Handle 0x0012, DMI type 16, 23 bytes
Physical Memory Array
  Location: System Board Or Motherboard
  Use: System Memory
  Error Correction Type: None
  Maximum Capacity: 16 GB
  Error Information Handle: Not Provided
  Number Of Devices: 2

Handle 0x0013, DMI type 17, 40 bytes
Memory Device
  Array Handle: 0x0012
  Bank Locator Handle: Not Provided
  Total Width: 64 bits
  Data Width: 64 bits
  SSize: 8192 MB
  Form Factor: DIMM
  Set: None
  Locator: ChannelB-DIMM0
  Bank Locator: BANK 2
  Type: Unknown
  Type Detail: None
  Speed: Unknown
  Manufacturer: [Empty]
  Serial Number: [Empty]
  Asset Tag: 9876543210
  Part Number: M37881C73EB0-CK0
  UFFN: [Empty]
  Configured Memory Speed: 1600 MT/s
  Minimum Voltage: 1.5 V
  Maximum Voltage: 1.5 V
  Configured Voltage: 1.5 V

Handle 0x0016, DMI type 17, 40 bytes
Memory Device
  Array Handle: 0x0012
  Error Information Handle: Not Provided
  Total Width: Unknown
  Data Width: Unknown
  Size: No Module Installed
  Form Factor: DIMM
  Set: None
  Locator: ChannelA-DIMM0
  Bank Locator: BANK 0
  Type: Unknown
  Type Detail: None
  Speed: Unknown
  Manufacturer: [Empty]
  Serial Number: [Empty]
  Asset Tag: 9876543210
  Part Number: [Empty]
  Rank: Unknown
  Configured Memory Speed: Unknown
  Minimum Voltage: Unknown
  Maximum Voltage: Unknown
  Configured Voltage: Unknown
```

PLACA BASE



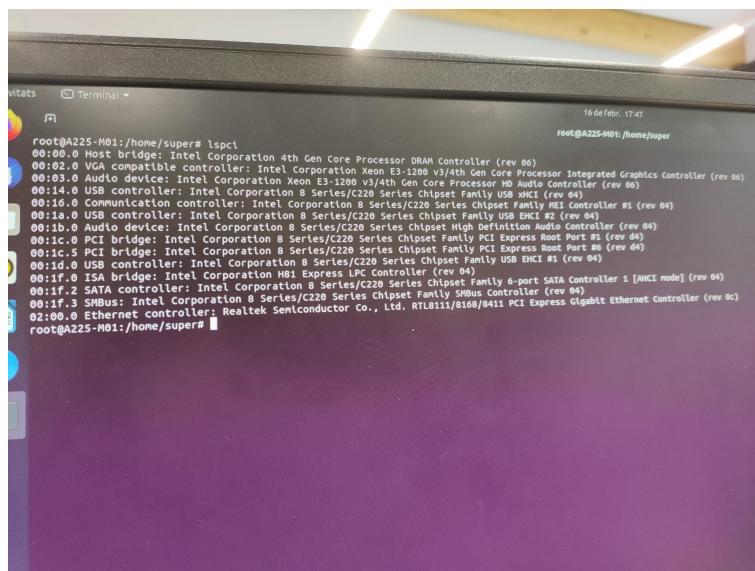
```
Activitats Terminal

root@A225-M01:/home/super# dmicode -t 2
dmicode: no s'ha trobat l'ordre
root@A225-M01:/home/super# dmidecode -t 2
# dmidecode 3.2
Getting SMBIOS data from sysfs.
SMBIOS 2.8 present.

Handle 0x0002, DMI type 2, 15 bytes
Base Board Information
  Manufacturer: LENOVO
  Product Name: Version: SDK0E50510 WIN 2625079470135
  Serial Number: INVALID
  Asset Tag:
  Features:
    Board is a hosting board
    Board is replaceable
  Location In Chassis:
  Chassis Handle: 0x0003
  Type: Motherboard
  Contained Object Handles: 0

root@A225-M01:/home/super#
```

PUERTOS



```
Activitats Terminal

root@A225-M01:/home/super# lspci
00:00.0 Host bridge: Intel Corporation 4th Gen Core Processor DRAM Controller (rev 00)
00:02.0 VGA compatible controller: Intel Corporation Xeon E3-1200 v3/4th Gen Core Processor Integrated Graphics Controller (rev 00)
00:03.0 Audio device: Intel Corporation Xeon E3-1200 v3/4th Gen Core Processor HD Audio Controller (rev 00)
00:14.0 USB controller: Intel Corporation 8 Series/C220 Series Chipset Family USB eXHCI (rev 04)
00:14.2 USB controller: Intel Corporation 8 Series/C220 Series Chipset Family MEI Controller #1 (rev 04)
00:14.4 USB controller: Intel Corporation 8 Series/C220 Series Chipset Family USB xHCI (rev 04)
00:1b.0 Audio device: Intel Corporation 8 Series/C220 Series Chipset High Definition Audio Controller (rev 04)
00:1c.0 PCI bridge: Intel Corporation 8 Series/C220 Series Chipset Family PCI Express Root Port #5 (rev 04)
00:1c.5 PCI bridge: Intel Corporation 8 Series/C220 Series Chipset Family PCI Express Root Port #6 (rev 04)
00:1d.0 USB controller: Intel Corporation 8 Series/C220 Series Chipset Family USB eXHCI #1 (rev 04)
00:1f.0 ISA bridge: Intel Corporation H81 Express Chipset (rev 04)
00:1f.2 SATA controller: Intel Corporation 8 Series/C220 Series Chipset Family 6-port SATA Controller 1 [AHCI mode] (rev 04)
00:1f.3 SMBus: Intel Corporation 8 Series/C220 Series Chipset Family SMBus Controller (rev 04)
02:00.0 Ethernet controller: Realtek Semiconductor Co., Ltd. RTL8111/8168/8411 PCI Express Gigabit Ethernet Controller (rev 0c)
root@A225-M01:/home/super#
```



BUSES DE EXPANSION

```

root@A225-M01:/home/super# cat /proc/meminfo
MemTotal:       8064092 kB
MemFree:        5364652 kB
MemAvailable:   8018012 kB
Buffers:         85964 kB
Cached:         1681872 kB
SwapCached:      0 kB
Active:         1127900 kB
Inactive:       1159728 kB
Active(anon):    663628 kB
Inactive(anon):   884 kB
Active(file):    464272 kB
Inactive(file): 1158844 kB
Unevictable:     148146 kB
Mlocked:         0 kB
SwapTotal:      2697148 kB
SwapFree:        2697148 kB
Dirty:           53104 kB
Writeback:        0 kB
AnonPages:      667936 kB
Mapped:          311188 kB
Shmem:          150292 kB
KReclaimable:   99264 kB
Slab:            203088 kB
SReclaimable:   99264 kB
SUnreclaim:     103744 kB
KernelStack:     7632 kB
PageTables:     12428 kB
NFS_Unstable:    0 kB
Bounce:          0 kB
WritebackTmp:    0 kB
CommitLimit:    6129192 kB
Committed_AS:  3966060 kB
VmallocTotal:   34359738367 kB
VmallocUsed:    19496 kB
VmallocChunk:    0 kB
Percpu:          3456 kB
HardwareCorrupted: 0 kB
AnonHugePages:   0 kB
ShmemHugePages:  0 kB
ShmemPmdMapped: 0 kB
FileHugePages:   0 kB
FilePmdMapped:  0 kB
CmaTotal:        0 kB
CmaFree:         0 kB
HugePages_Total: 0
HugePages_Free:  0
HugePages_Rsvd:  0
HugePages_Surp:  0
Hugepagesize:    2048 kB
Hugetlb:         0 kB
DirectMap4k:     226616 kB
DirectMap2M:    2830336 kB
DirectMap1G:   6291456 kB
root@A225-M01:/home/super#

```

2. Fes el mateix utilitzant una eina d'entorn gràfic com hardinfo. Caldrà instal.lar-la.

Field	Description	Value
MemTotal	Total Memory	8064092 KIB
Memfree	Free Memory	2450596 KIB
MemAvailable		4849264 KIB
Buffers		147132 KIB
Cached		2877708 KIB
SwapCached	Cached Swap	0 KIB
Active		3051416 KIB
Inactive		1723112 KIB
Active(anon)		2217672 KIB
Inactive(anon)		20516 KIB
Active(file)		833744 KIB
Inactive(file)		1702596 KIB
Unevictable		471260 KIB
Mlocked		10 KIB
SwapTotal	Virtual Memory	2097148 KIB
SwapFree	Free Virtual Memory	2097148 KIB
Dirty		60 KIB
Writeback		0 KIB
AnonPages		2221064 KIB
Mapped		4949176 KIB
Shmem		494088 KIB
KReclaimable		163432 KIB
Slab		283764 KIB
SReclaimable		163432 KIB

▼ Package Information

- Name: Intel(R) Core(TM) i5-4460 CPU @ 3.20GHz
- Topology: 1 physical processor; 4 cores; 4 threads
- Logical CPU Config: 4x 3400,00 MHz

▼ Clocks

- 800,00-3400,00 MHz 4x

▼ Caches

- Level 1 (Data): 4x 32KB (128KB), 8-way set-associative, 64 sets
- Level 1 (Instruction): 4x 32KB (128KB), 8-way set-associative, 64 sets
- Level 2 (Unified): 4x 256KB (1024KB), 8-way set-associative, 512 sets
- Level 3 (Unified): 1x 6144KB (6144KB), 12-way set-associative, 8192 sets

Host bridge	
VGA compatible controller	Intel Corporation Xeon E3 1200 v3/4th Gen Core Processor Integrated Graphics Controller (rev 00) [prog-if 00 [VGA controller]]
Audio device	Intel Corporation Xeon E3 1200 v3/4th Gen Core Processor High Definition Audio Controller (rev 06)
USB controller	Intel Corporation 8 Series/C220 Series Chipset Family USB xHCI Controller #1 (prog-if 30 [xHCI])
Communication controller	Intel Corporation 8 Series/C220 Series Chipset Family MEI Controller #1 (rev 0d)
USB controller	Intel Corporation 8 Series/C220 Series Chipset Family USB EHCI #2 (rev 04) [prog-if 20 [EHCI]]
Audio device	Intel Corporation 8 Series/C220 series Chipset Family PCI Express High Definition Audio Controller (rev 04)
PCI bridge	Intel Corporation 8 Series/C220 Series Chipset Family PCI Express Root Port #1 (rev d4) [prog-if 00 [Normal decode]]
PCI bridge	Intel Corporation 8 Series/C220 Series Chipset Family PCI Express Root Port #6 (rev d4) [prog-if 00 [Normal decode]]
USB controller	Intel Corporation 8 Series/C220 Series Chipset Family USB EHCI #1 (rev 04) [prog-if 20 [EHCI]]
ISA bridge	Intel Corporation H81 Express LPC Controller (rev 04)
SATA controller	Intel Corporation 8 Series/C220 Series Chipset Family 6-port SATA Controller [AHCI mode] (rev 04) [prog-if 01 [AHCI 1.0]]
SMBus	Intel Corporation 8 Series/C220 Series Chipset Family SMBus Controller (rev 04)
Ethernet controller	Realtek Semiconductor Co., Ltd RTL8111/8168/8411 PCI Express Gigabit Ethernet Controller (rev 0c)

Device information	
Name	Intel Corporation 4th Gen Core Processor DRAM Controller (rev 00)
Class	Host bridge
Domain	0
Bus, device, function	0:0,0
Vendor	Intel (www.intel.com)
Bus Master	Yes

3. Indica voltatges, velocitats de ventiladors i temperatura de CPU i HDD. Pots utilitzar: sensors i hddtemp /dev/sdX, on X és la lletra del disc del disc

Sensor	Type	Value
.../thermal_zone0/temp1	Temperature	27,80°C
.../thermal_zone0/temp2	Temperature	29,80°C
coretemp/temp1	Temperature	51,00°C
coretemp/temp2	Temperature	45,00°C
coretemp/temp3	Temperature	43,00°C
coretemp/temp4	Temperature	46,00°C
coretemp/temp5	Temperature	51,00°C
thermal/thermal_zone2	Temperature	50,00°C
thermal/thermal_zone0	Temperature	27,80°C
thermal/thermal_zone1	Temperature	29,80°C

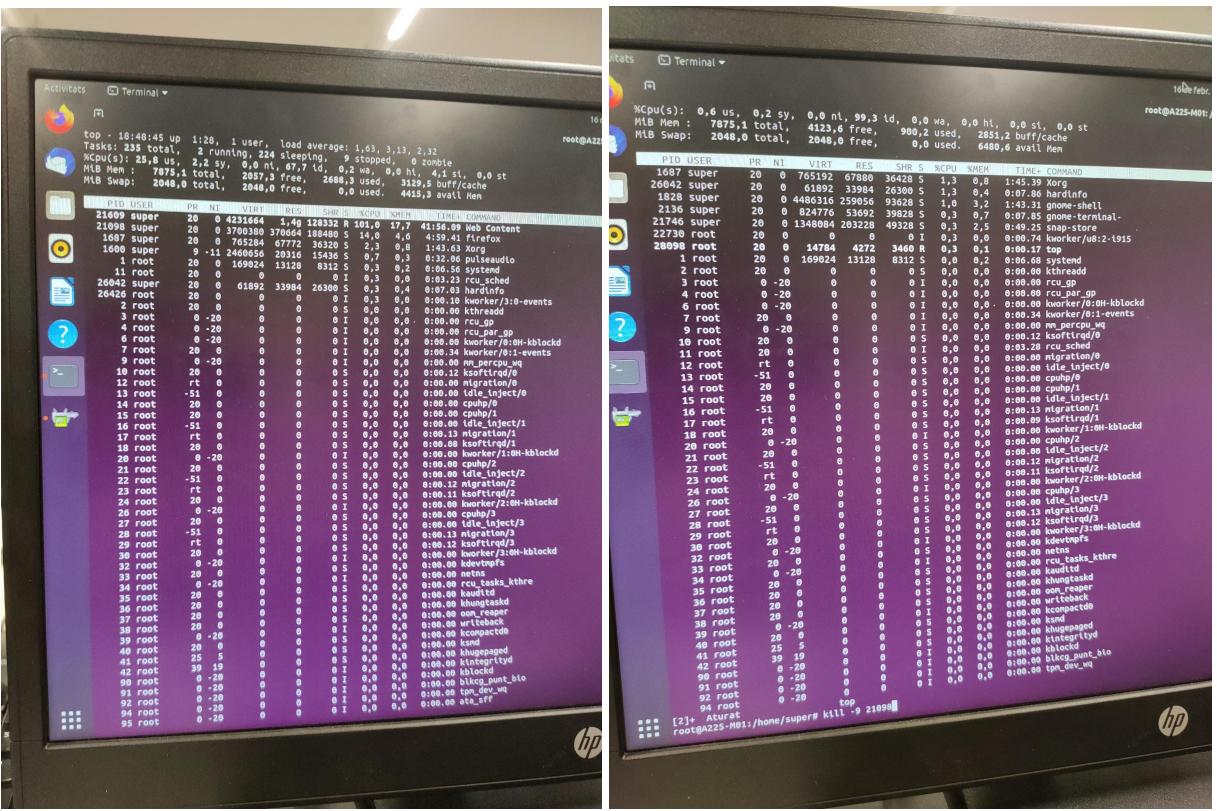
4. Fes un test d'estabilitat amb la comanda stress –cpu 8. comprova ara la temperatura de CPU i compara-la amb el resultat que t'havia donat abans

Devices - Sensors - System Information		
Sensor	Type	Value
.../thermal_zone0/temp1	Temperature	27,80°C
.../thermal_zone0/temp2	Temperature	29,80°C
coretemp/temp1	Temperature	45,00°C
coretemp/temp2	Temperature	43,00°C
coretemp/temp3	Temperature	41,00°C
coretemp/temp4	Temperature	45,00°C
coretemp/temp5	Temperature	53,00°C
coretemp/temp6	Temperature	43,00°C
coretemp/temp7	Temperature	43,00°C
thermal/thermal_zone2	Temperature	50,00°C
thermal/thermal_zone0	Temperature	27,80°C
thermal/thermal_zone1	Temperature	29,80°C

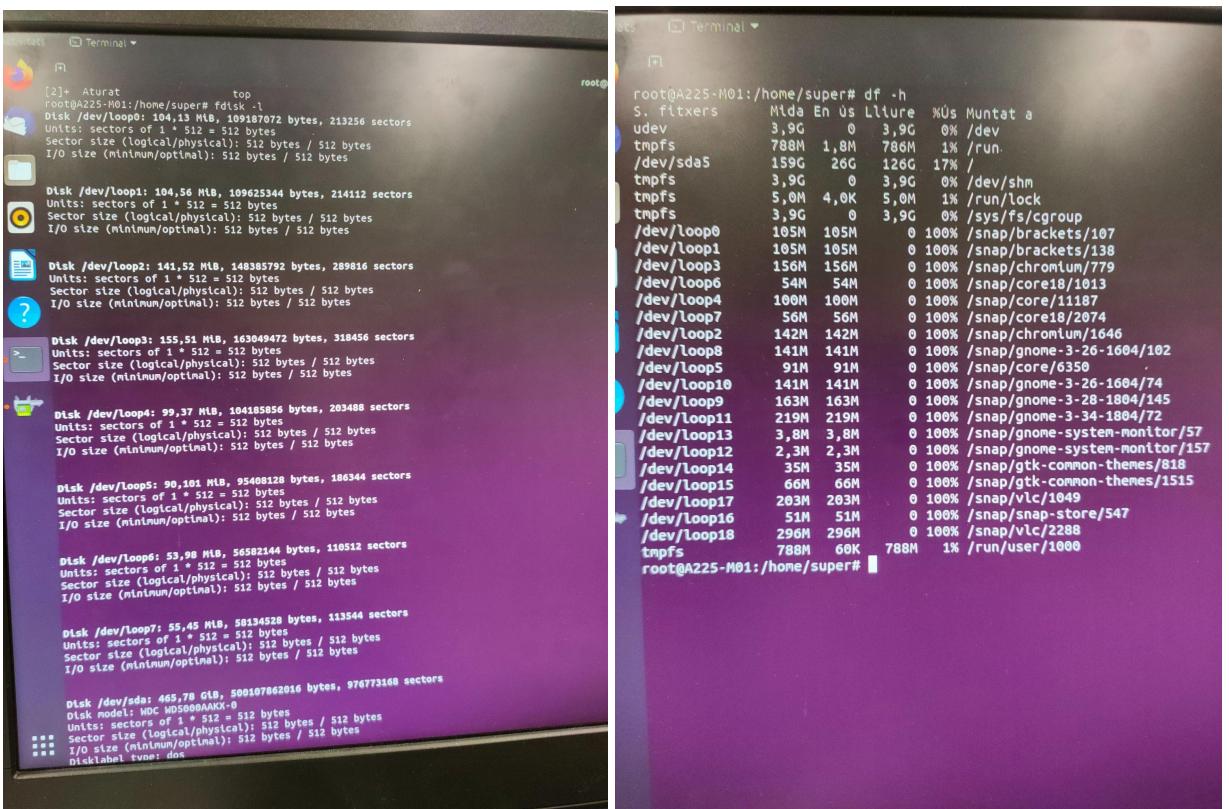
```
root@A22-Mon:~/home/super# stress --cpu 8
root@A22-Mon:~/home/super# hddtemp /dev/sda
[  0.00%] 0.00%
```



5. Indica l'ús de CPU, memòria i els processos oberts amb la comanda top i htop. Elimina un process amb la comanda kill -9 PID



6. Indica les característiques de les particions utilitzant fdisk -l i df -h



2. -Amb un CD o pen drive executa el Hiren's Boot CD v15.2 a Windows i utilitza diferents aplicacions de manteniment.

Inicieu l'ordinador fent que carregui des de USB o CD el Hiren's Boot CD.

Busqueu, proveu i documenteu les següents aplicacions:

- Monitorització:

Recull les següents dades del teu ordinador amb speccy i **respon en forma de taula**, capturant les pantalles a on surt la informació.

1. Processador, cores, threads, bus speed, multiplicador, cache i temperatura

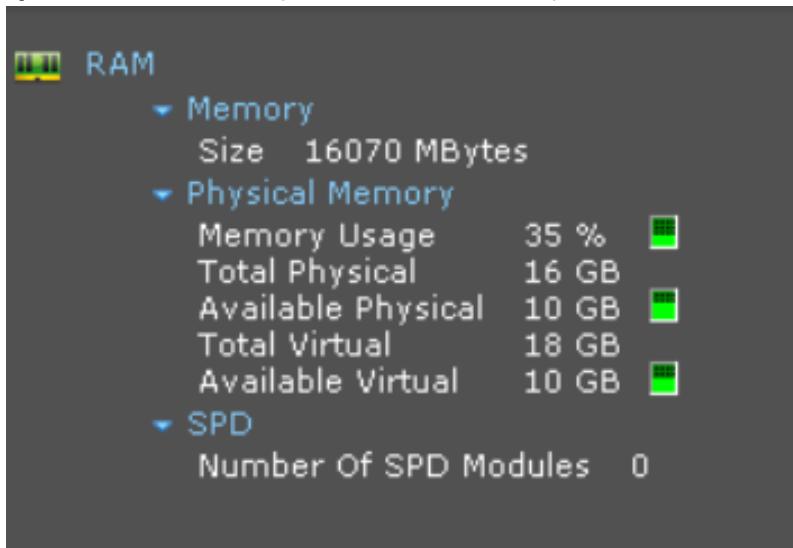
CPU					
+ Intel Core i7					
Cores	8				
Threads	16				
Name	Intel Core i7				
Code Name	Tiger Lake				
Technology	10nm				
Specification	11th Gen Intel Core i7-11800H @ 2.30GHz				
Family	6				
Extended Family	6				
Model	D				
Extended Model	8D				
Stepping	1				
Instructions	MMX, SSE, SSE2, SSE3, SSE4.1, SSE4.2, Intel 64, NX, VMX, AES, AVX, AVX2, FMA3				
Virtualization	Supported, Enabled				
Hyperthreading	Supported, Enabled				
Bus Speed	99.8 MHz				
Stock Core Speed	2300 MHz				
Stock Bus Speed	100 MHz				
Average Temperature	42 °C				
+ Caches					
L1 Data Cache Size	8 x 48 KBytes				
L1 Instruction Cache Size	8 x 48 KBytes				
L2 Unified Cache Size	8 x 1280 KBytes				
L3 Unified Cache Size	24576 KBytes				
+ Cores					
Core	Core Speed	Multiplexer	Bus Speed	Temperature	Threads
Core 0	798.4 MHz	x 8.0	99.8 MHz	42 °C	APIC ID: 0, 1
Core 1	798.4 MHz	x 8.0	99.8 MHz	42 °C	APIC ID: 2, 3
Core 2	798.4 MHz	x 8.0	99.8 MHz	39 °C	APIC ID: 4, 5
Core 3	798.4 MHz	x 8.0	99.8 MHz	42 °C	APIC ID: 6, 7
Core 4	798.4 MHz	x 8.0	99.8 MHz	42 °C	APIC ID: 8, 9
Core 5	798.4 MHz	x 8.0	99.8 MHz	41 °C	APIC ID: 10, 11
Core 6	798.4 MHz	x 8.0	99.8 MHz	42 °C	APIC ID: 12, 13
Core 7	798.4 MHz	x 8.0	99.8 MHz	43 °C	APIC ID: 14, 15

2. Placa mare, versió de la BIOS, temperatura del sistema

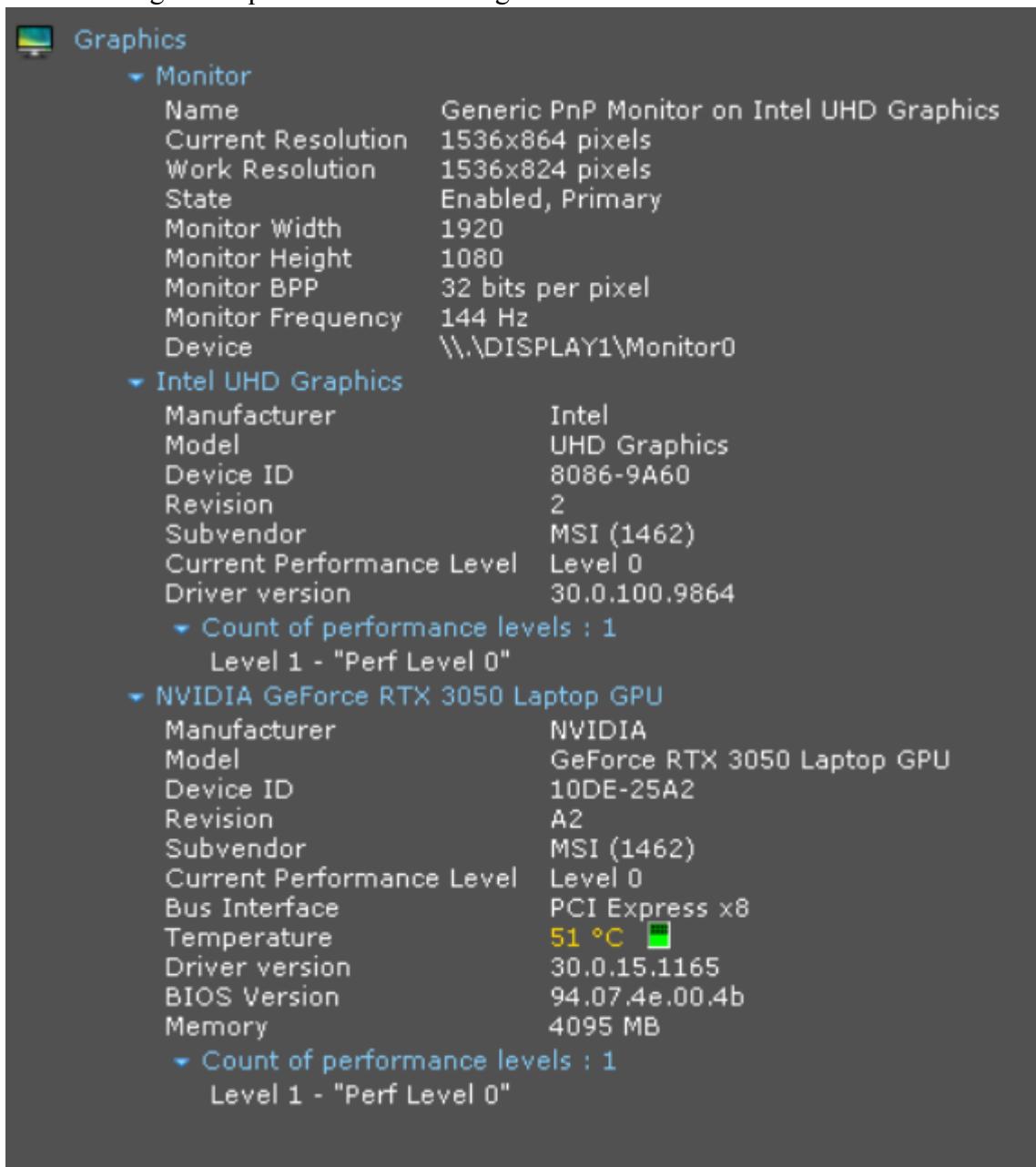
Motherboard	
Manufacturer	Micro-Star International Co. Ltd.
Model	MS-16R6 (U3E1)
Version	REV:1.0
Chipset Vendor	Intel
Chipset Model	ID9A36
Chipset Revision	05
Southbridge Vendor	Intel
Southbridge Model	ID438B
Southbridge Revision	11
+ BIOS	
Brand	American Megatrends International LLC.
Version	E16R6!MS.10B
Date	30/12/2021
+ PCI Data	
+ Slot PCI-E	
Slot Type	PCI-E
Slot Usage	In Use
Data lanes	x16
Slot Designation	J6B2
Characteristics	3.3V, Shared, PME
Slot Number	0
+ Slot PCI-E	
Slot Type	PCI-E
Slot Usage	In Use
Data lanes	x1
Slot Designation	J6B1
Characteristics	3.3V, Shared, PME
Slot Number	1
+ Slot PCI-E	
Slot Type	PCI-E
Slot Usage	In Use
Data lanes	x1
Slot Designation	J6D1
Characteristics	3.3V, Shared, PME
Slot Number	2
+ Slot PCI-E	
Slot Type	PCI-E
Slot Usage	In Use
Data lanes	x1
Slot Designation	J7B1
Characteristics	3.3V, Shared, PME
Slot Number	3
+ Slot PCI-E	
Slot Type	PCI-E
Slot Usage	In Use
Data lanes	x1
Slot Designation	J8B4
Characteristics	3.3V, Shared, PME
Slot Number	4



3. Quantitat de memòria, nombre de DIMMs, % de RAM utilitzada i memòria virtual disponible



4. Processador gràfic i quantitat de memòria gràfica



5. Targeta de só

Audio

- ▼ Sound Cards
 - Realtek High Definition Audio
 - Intel Smart Sound Technology for Digital Microphones
 - Intel Smart Sound Technology for USB Audio
 - Intel Smart Sound Technology for Bluetooth Audio
 - Nahimic mirroring device
 - Nahimic Easy Surround device
- ▼ Playback Device
 - Altavoces (Realtek Audio)
- ▼ Recording Device
 - Varios micrófonos (Intel Smart Sound Technology for Digital Microphones)

6. Targeta de xarxa, direcció IP

Network

You are connected to the internet

Connected through	Realtek PCIe GbE Family Controller
IP Address	192.168.110.62
Subnet mask	255.255.255.0
Gateway server	192.168.110.253
Preferred DNS server	80.58.61.254
Alternate DNS server	80.58.61.250
DHCP	Enabled
DHCP server	192.168.110.253
External IP Address	79.154.253.31
Adapter Type	Ethernet
NetBIOS over TCP/IP	Enabled via DHCP
NETBIOS Node Type	Hybrid node
Link Speed	2.1 Kbps

Computer Name

NetBIOS Name	LAPTOP-PSYCOPAT
DNS Name	LAPTOP-psycopath
Membership	Part of workgroup
Workgroup	WORKGROUP

► Remote Desktop

► WinInet Info

► Wi-Fi Info

► WinHTTPInfo

► Sharing and Discovery

► Adapters List

► Enabled

- ▼ Intel(R) Wi-Fi 6 AX201 160MHz
 - Connection Name Wi-Fi
 - DHCP enabled Yes
 - MAC Address F8-B5-4D-47-9D-70
- ▼ Realtek PCIe GbE Family Controller
 - Connection Name Ethernet
 - NetBIOS over TCPIP Yes
 - DHCP enabled Yes
 - MAC Address 2C-F0-5D-FC-E0-1C
 - IP Address 192.168.110.62
 - Subnet mask 255.255.255.0
 - Gateway server 192.168.110.253
 - DHCP 192.168.110.253
 - DNS Server 80.58.61.254
 - 80.58.61.250
- ▼ VirtualBox Host-Only Ethernet Adapter
 - Connection Name VirtualBox Host-Only Network
 - NetBIOS over TCPIP Yes
 - DHCP enabled No
 - MAC Address 0A-00-27-00-00-07
 - IP Address 192.168.56.1
 - Subnet mask 255.255.255.0

► Network Shares

Users C:\Users

7. Discs durs, particions, temperatura i status

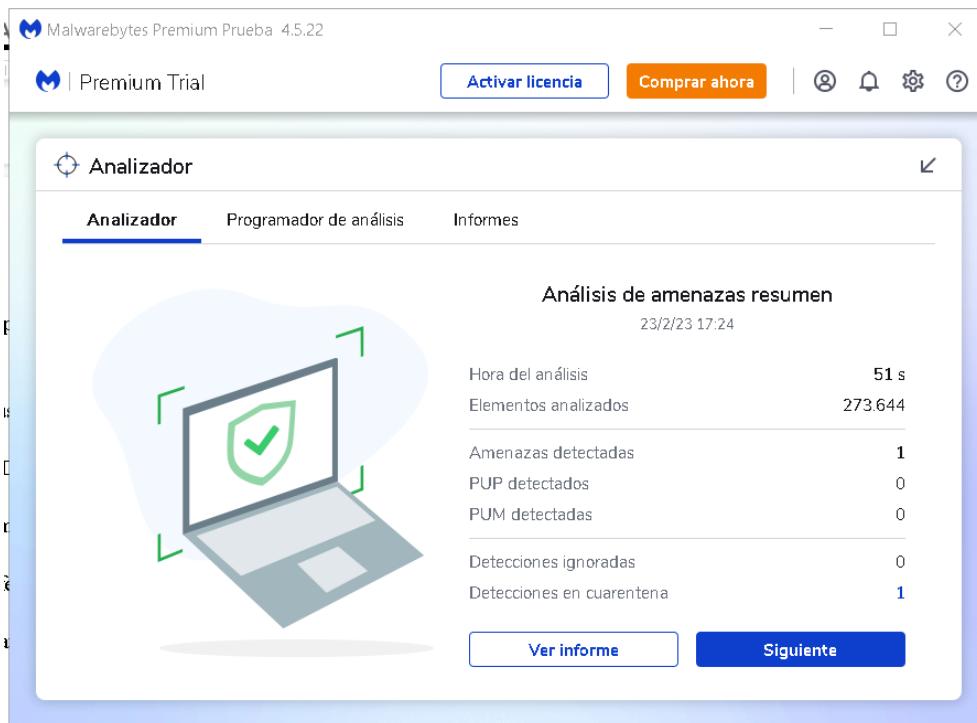
Storage	
Hard drives	
KINGSTON OM8PDP3512B-AI1 (SSD)	
Manufacturer	Kingston
Product Family	SSDNow
Form Factor	2.5-inch
Interface	SATA-2
Capacity	476 GB
Real size	512.110.190.592 bytes
RAID Type	None
S.M.A.R.T	
S.M.A.R.T not supported	
Partition 0	
Partition ID	Disk #0, Partition #0
File System	FAT32
Volume Serial Number	1A180EA6
Size	96 MB
Used Space	26,5 MB (27%)
Free Space	69 MB (73%)
Partition 1	
Partition ID	Disk #0, Partition #1
Disk Letter	C:
File System	NTFS
Volume Serial Number	0618E93C
Size	466 GB
Used Space	280 GB (60%)
Free Space	186 GB (40%)
Partition 2	
Partition ID	Disk #0, Partition #2
File System	NTFS
Volume Serial Number	C21D32D9
Size	521 MB
Used Space	437 MB (83%)
Free Space	84 MB (17%)
Partition 3	
Partition ID	Disk #0, Partition #3
Disk Letter	D:
File System	NTFS
Volume Serial Number	3C1772B2
Size	10 GB
Used Space	6,11 GB (61%)
Free Space	3,89 GB (39%)

8. Perifèrics i drivers

Peripherals	
▼ Teclado PS/2 estándar	
Device Kind	Keyboard
Device Name	Teclado PS/2 estándar
Vendor	MSI
Location	Intel LPC Controller (HM570) - 438B
► Driver	
▼ Mouse compatible con HID	
Device Kind	Mouse
Device Name	Mouse compatible con HID
Vendor	Unknown
Location	Dispositivo de entrada USB
► Driver	
▼ Mouse compatible con HID	
Device Kind	Mouse
Device Name	Mouse compatible con HID
Vendor	PNP
Location	Dispositivo HID I2C
► Driver	
▼ Printers	
▼ Canon MG3600 series HTTP (Default Printer)	
Printer Port	USB001
Print Processor	Canon MG3600 series Print Processor
Availability	Always
Priority	1
Duplex	None
Print Quality	4294967293 dpi Color
Status	Unknown
► Driver	
▼ Fax	
Printer Port	SHRFAX:
Print Processor	winprint
Availability	Always
Priority	1
Duplex	None
Print Quality	200 * 200 dpi Monochrome
Status	Unknown
► Driver	
▼ Microsoft Print to PDF	
Printer Port	PORTPROMPT:
Print Processor	winprint
Availability	Always
Priority	1
Duplex	None
Print Quality	600 * 600 dpi Color
Status	Unknown
► Driver	

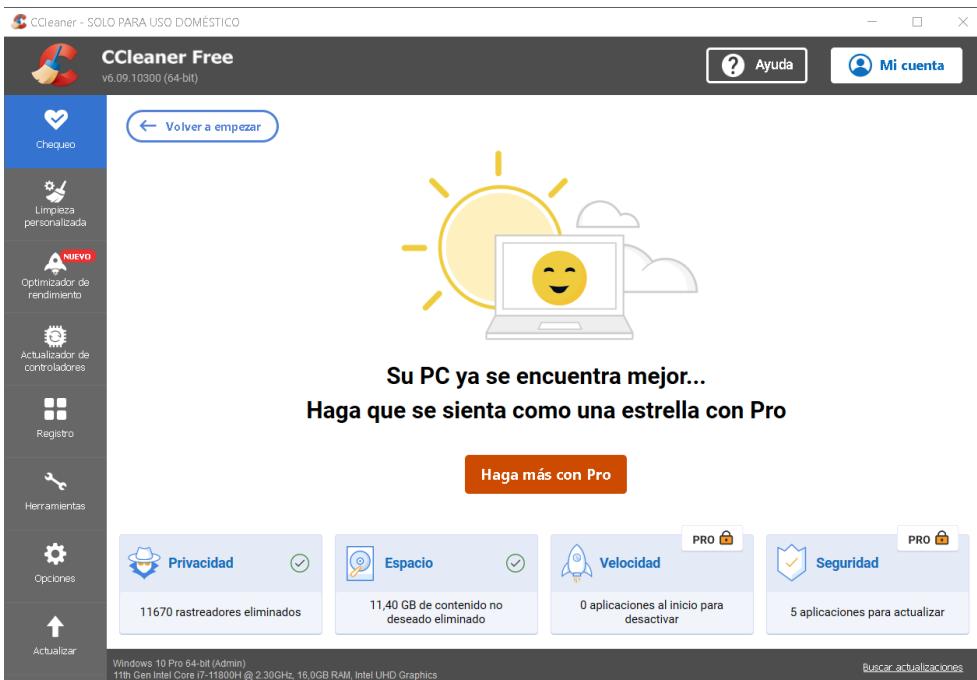
- Antivirus i antimalware

Actualitza l'antivirus i fes un "quick scan" d'una partició amb "Malwarebytes"



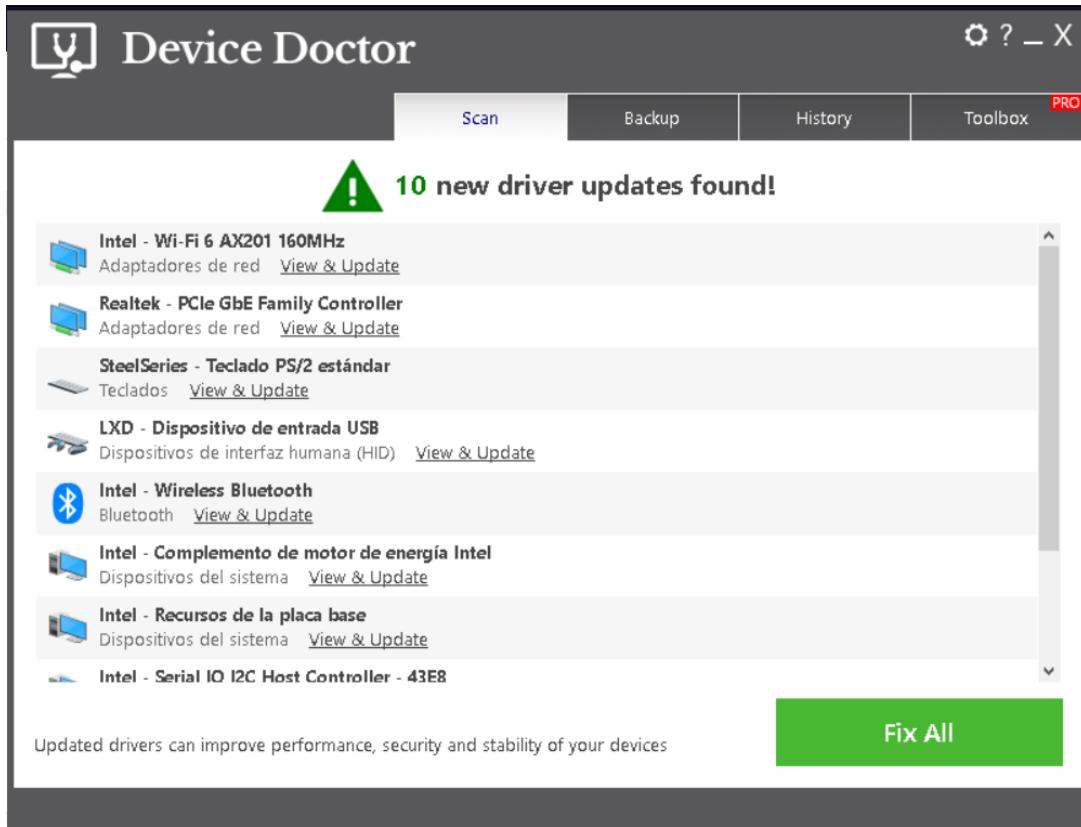
- De neteja

Utilitza "Ccleaner" per netejar el sistema d'arxius temporals i no utils i optimitzar el registre de Windows



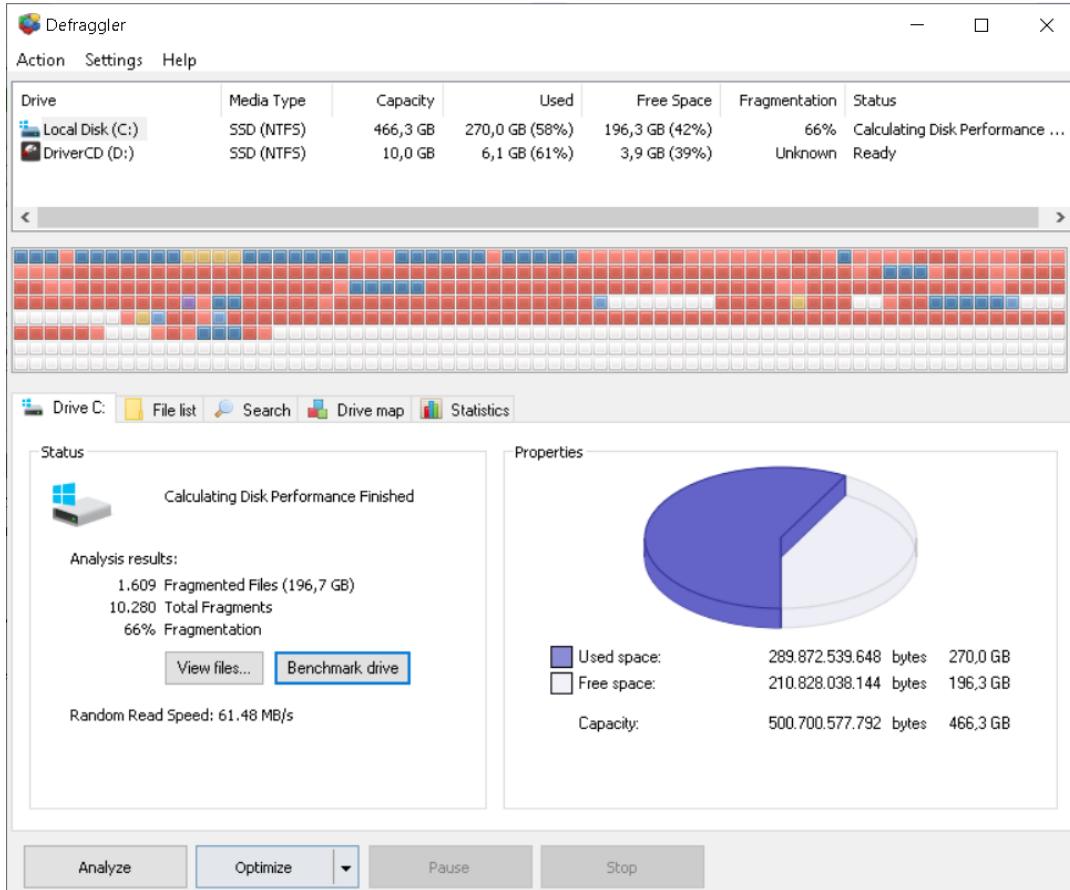
- De detecció de drivers

Revisa els drivers desactualitzats amb "Device Doctor"



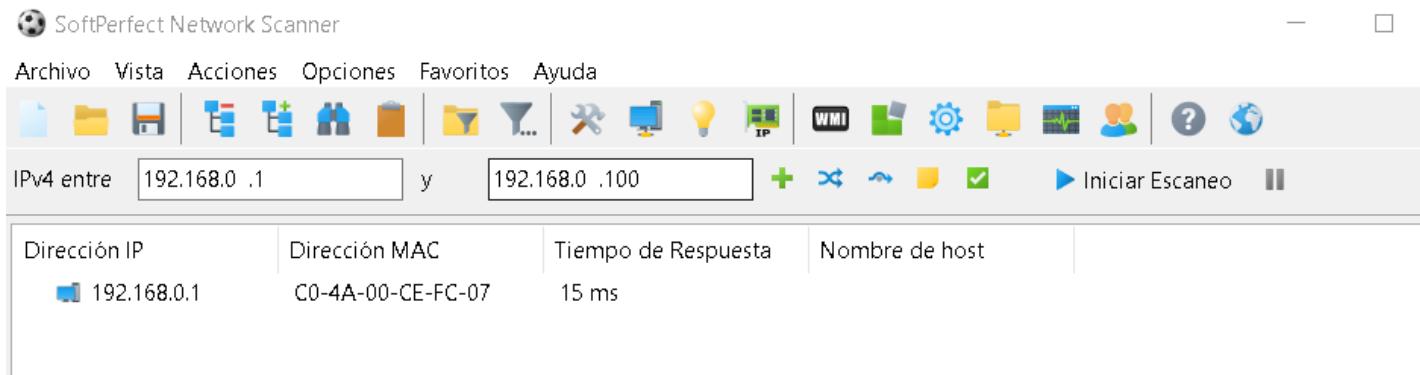
- Defragmentació i informació del disc

Examina el grau de fragmentació del disc, la temperatura i l' S.M.A.R.T amb "defraggler"



- Escaneig de la xarxa

Fes un escaneig de la teva xarxa amb "SoftPerfect Network scanner"



- Recuperació de fitxers

Fes una recerca i recuperació d'un fitxer eliminat amb "Recuva"

