

Estació de treball HP xw4400 per l'Avance III 400sb

 Aquesta era l'estació de treball originalment instal·lada a l'Avance II+ 600 i després substituïda per una [estació de treball HP Z400](#).

Hardware specifications

```
[root@cie-55-31 ~]# lshw
cie-55-31
  description: Mini Tower Computer
  product: HP xw4400 Workstation
  vendor: Hewlett-Packard
  serial: CZC70116S7
  width: 32 bits
  capabilities: smbios-2.4 dmi-2.4
  configuration: boot=normal chassis=mini-tower uuid=A76CC2A8-7E9C-DB11-BBDA-BB57969B0019
*-core
  description: Motherboard
  product: 0A68h
  vendor: Hewlett-Packard
  physical id: 0
  serial: CZC70116S7
*-firmware
  description: BIOS
  vendor: Hewlett-Packard
  physical id: 1
  version: 786D7 v01.03 (09/28/2006)
  size: 128KB
  capacity: 960KB
  capabilities: pci pnp upgrade shadowing cdboot bootselect edd
int13floppytoshiba int13floppy360 int13floppy1200 int13floppy720
int5presentscreen int9keyboard int14serial int17printer acpi usb ls120boot
zipboot biosbootspecificationnetboot
*-cpu:0
  description: CPU
  product: Intel(R) Core(TM)2 CPU 6600 @ 2.40GHz
  vendor: Intel Corp.
  physical id: 5
  bus info: cpu@0
  version: 6.15.6
  serial: 0000-06F6-0000-0000-0000-0000
  slot: XU1 PROCESSOR
  size: 2400MHz
  width: 64 bits
```

```
clock: 1066MHz
capabilities: fpu fpu_exception wp vme de pse tsc msr pae mce cx8
apic sep mtrr pge mca cmov pat pse36 clflush dts acpi mmx fxsr sse sse2 ss
ht tm pbe nx x86-64 pni monitor ds_cpl est tm2 xtpr vmx
configuration: id=0
*-cache:0
  description: L1 cache
  physical id: 7
  slot: Internal L1 Cache
  size: 64KB
  capacity: 64KB
  capabilities: burst internal write-through data
*-cache:1
  description: L2 cache
  physical id: 8
  slot: Cache L2
  size: 4MB
  capacity: 4MB
  capabilities: burst internal write-back data
*-logicalcpu:0
  description: Logical CPU
  physical id: 0.1
  width: 64 bits
  capabilities: logical
*-logicalcpu:1
  description: Logical CPU
  physical id: 0.2
  width: 64 bits
  capabilities: logical
*-cpu:1
  description: CPU
  vendor: Intel
  physical id: 6
  bus info: cpu@1
  version: 6.15.6
  serial: 0000-06F6-0000-0000-0000-0000
  slot: XU1 PROCESSOR 2
  size: 2400MHz
  clock: 1066MHz
  capabilities: vmx ht
  configuration: id=0
*-cache:0 DISABLED
  description: L1 cache
  physical id: 9
  slot: Internal L1 Cache
  capabilities: burst internal
*-cache:1 DISABLED
  description: L2 cache
  physical id: a
  slot: Cache L2
```

```
        capacity: 4MB
        capabilities: burst internal
*-logicalcpu:0
    description: Logical CPU
    physical id: 0.1
    capabilities: logical
*-logicalcpu:1
    description: Logical CPU
    physical id: 0.2
    capabilities: logical
*-memory:0
    description: System Memory
    physical id: 36
    slot: System board or motherboard
*-bank:0
    description: DIMM Synchronous 667 MHz (1.5 ns)
    product: HYMP564U72CP8-Y5
    vendor: JEDEC ID:AD 00 00 00 00 00 00 00
    physical id: 0
    serial: 46600000
    slot: XMM1
    size: 512MB
    width: 64 bits
    clock: 667MHz (1.5ns)
*-bank:1
    description: DIMM Synchronous [empty]
    vendor: JEDEC ID:
    physical id: 1
    slot: XMM2
*-bank:2
    description: DIMM Synchronous 667 MHz (1.5 ns)
    product: HYMP564U72CP8-Y5
    vendor: JEDEC ID:AD 00 00 00 00 00 00 00
    physical id: 2
    serial: 45500000
    slot: XMM3
    size: 512MB
    width: 64 bits
    clock: 667MHz (1.5ns)
*-bank:3
    description: DIMM Synchronous [empty]
    vendor: JEDEC ID:
    physical id: 3
    slot: XMM4
*-memory:1 UNCLAIMED
    description: Flash Memory
    physical id: 37
    slot: System board or motherboard
    capacity: 1MB
*-bank UNCLAIMED
    description: Chip FLASH Non-volatile
```

```
    physical id: 0
    slot: SYSTEM ROM
    size: 1MB
    width: 2 bits
*-memory:2 UNCLAIMED
    physical id: 0
*-memory:3 UNCLAIMED
    physical id: 2
*-pci
    description: Host bridge
    product: 975X Express Memory Controller Hub
    vendor: Intel Corporation
    physical id: 100
    bus info: pci@00:00.0
    version: 00
    width: 32 bits
    clock: 33MHz
*-pci:0
    description: PCI bridge
    product: 975X Express PCI Express Root Port
    vendor: Intel Corporation
    physical id: 1
    bus info: pci@00:01.0
    version: 00
    width: 32 bits
    clock: 33MHz
    capabilities: pci normal_decode bus_master cap_list
*-display
    description: VGA compatible controller
    product: Quadro FX 560
    vendor: nVidia Corporation
    physical id: 0
    bus info: pci@01:00.0
    version: a1
    size: 256MB
    width: 64 bits
    clock: 33MHz
    capabilities: vga bus_master cap_list
    configuration: driver=nvidia latency=0
    resources: iomemory:e1000000-e1ffffff iomemory:d0000000-
dfffffff iomemory:e2000000-e2ffffff ioport:1000-107f irq:145
*-multimedia
    description: Audio device
    product: 82801G (ICH7 Family) High Definition Audio Controller
    vendor: Intel Corporation
    physical id: 1b
    bus info: pci@00:1b.0
    version: 01
    width: 64 bits
    clock: 33MHz
```

```
capabilities: bus_master cap_list
configuration: driver=HDA Intel latency=0
resources: iomemory:e0a00000-e0a03fff irq:185
*-pci:1
  description: PCI bridge
  product: 82801G (ICH7 Family) PCI Express Port 1
  vendor: Intel Corporation
  physical id: 1c
  bus info: pci@00:1c.0
  version: 01
  width: 32 bits
  clock: 33MHz
  capabilities: pci normal_decode bus_master cap_list
*-pci:2
  description: PCI bridge
  product: 82801GR/GH/GHM (ICH7 Family) PCI Express Port 5
  vendor: Intel Corporation
  physical id: 1c.4
  bus info: pci@00:1c.4
  version: 01
  width: 32 bits
  clock: 33MHz
  capabilities: pci normal_decode bus_master cap_list
*-network
  description: Ethernet interface
  product: NetXtreme BCM5751 Gigabit Ethernet PCI Express
  vendor: Broadcom Corporation
  physical id: 0
  bus info: pci@28:00.0
  logical name: eth0
  version: 21
  serial: 00:10:18:27:55:de
  size: 100MB/s
  capacity: 1GB/s
  width: 64 bits
  clock: 33MHz
  capabilities: bus_master cap_list ethernet physical mii 10bt
10bt-fd 100bt 100bt-fd 1000bt 1000bt-fd autonegotiation
  configuration: autonegotiation=on broadcast=yes driver=tg3
driver=3.52-rh duplex=full firmware=5751-v3.58 ip=158.109.55.31
latency=0 link=yes multicast=yes port=twisted pair speed=100MB/s
  resources: iomemory:e0500000-e050ffff irq:217
*-pci:3
  description: PCI bridge
  product: 82801GR/GH/GHM (ICH7 Family) PCI Express Port 6
  vendor: Intel Corporation
  physical id: 1c.5
  bus info: pci@00:1c.5
  version: 01
  width: 32 bits
  clock: 33MHz
```

```
capabilities: pci normal_decode bus_master cap_list
*-network
    description: Ethernet interface
    product: NetXtreme BCM5755 Gigabit Ethernet PCI Express
    vendor: Broadcom Corporation
    physical id: 0
    bus info: pci@3f:00.0
    logical name: eth1
    version: 02
    serial: 00:19:bb:57:96:9b
    size: 100MB/s
    capacity: 1GB/s
    width: 64 bits
    clock: 33MHz
    capabilities: bus_master cap_list ethernet physical mii 10bt
10bt-fd 100bt 100bt-fd 1000bt 1000bt-fd autonegotiation
    configuration: autonegotiation=on broadcast=yes driver=tg3
driver=3.52-rh duplex=full firmware=5755-v3.17 ip=149.236.99.1
latency=0 link=yes multicast=yes port=twisted pair speed=100MB/s
    resources: iomemory:e0400000-e040ffff irq:225
*-usb:0
    description: USB Controller
    product: 82801G (ICH7 Family) USB UHCI #1
    vendor: Intel Corporation
    physical id: 1d
    bus info: pci@00:1d.0
    version: 01
    width: 32 bits
    clock: 33MHz
    capabilities: uhci bus_master
    configuration: driver=uhci_hcd latency=0
    resources: ioport:2000-201f irq:177
*-usbhost
    product: UHCI Host Controller
    vendor: Linux 2.6.9-42.0.3.ELsmp uhci_hcd
    physical id: 1
    bus info: usb@2
    logical name: usb2
    version: 2.06
    capabilities: usb-1.10
    configuration: driver=hub maxpower=0mA slots=2
speed=12.0MB/s
*-usb:0
    description: Mouse
    product: Logitech USB Optical Mouse
    vendor: Logitech
    physical id: 1
    bus info: usb@2:1
    version: 43.00
    capabilities: usb-2.00
```

```
configuration: driver=usbhid maxpower=100mA speed=1.5MB/s
*-usb:1
  description: Human interface device
  product: ShuttlePRO v2
  vendor: Contour Design
  physical id: 2
  bus info: usb@2:2
  version: 1.17
  capabilities: usb-1.10
  configuration: driver=usbhid maxpower=100mA speed=1.5MB/s
*-usb:1
  description: USB Controller
  product: 82801G (ICH7 Family) USB UHCI #2
  vendor: Intel Corporation
  physical id: 1d.1
  bus info: pci@00:1d.1
  version: 01
  width: 32 bits
  clock: 33MHz
  capabilities: uhci bus_master
  configuration: driver=uhci_hcd latency=0
  resources: ioport:2020-203f irq:161
*-usbhost
  product: UHCI Host Controller
  vendor: Linux 2.6.9-42.0.3.ELsmp uhci_hcd
  physical id: 1
  bus info: usb@3
  logical name: usb3
  version: 2.06
  capabilities: usb-1.10
  configuration: driver=hub maxpower=0mA slots=2
speed=12.0MB/s
*-usb:2
  description: USB Controller
  product: 82801G (ICH7 Family) USB UHCI #3
  vendor: Intel Corporation
  physical id: 1d.2
  bus info: pci@00:1d.2
  version: 01
  width: 32 bits
  clock: 33MHz
  capabilities: uhci bus_master
  configuration: driver=uhci_hcd latency=0
  resources: ioport:2040-205f irq:185
*-usbhost
  product: UHCI Host Controller
  vendor: Linux 2.6.9-42.0.3.ELsmp uhci_hcd
  physical id: 1
  bus info: usb@4
  logical name: usb4
  version: 2.06
```

```
capabilities: usb-1.10
configuration: driver=hub maxpower=0mA slots=2
speed=12.0MB/s
*-usb:3
description: USB Controller
product: 82801G (ICH7 Family) USB UHCI #4
vendor: Intel Corporation
physical id: 1d.3
bus info: pci@00:1d.3
version: 01
width: 32 bits
clock: 33MHz
capabilities: uhci bus_master
configuration: driver=uhci_hcd latency=0
resources: ioport:2060-207f irq:193
*-usbhost
product: UHCI Host Controller
vendor: Linux 2.6.9-42.0.3.ELsmp uhci_hcd
physical id: 1
bus info: usb@5
logical name: usb5
version: 2.06
capabilities: usb-1.10
configuration: driver=hub maxpower=0mA slots=2
speed=12.0MB/s
*-usb:4
description: USB Controller
product: 82801G (ICH7 Family) USB2 EHCI Controller
vendor: Intel Corporation
physical id: 1d.7
bus info: pci@00:1d.7
version: 01
width: 32 bits
clock: 33MHz
capabilities: ehci bus_master cap_list
configuration: driver=ehci_hcd latency=0
resources: iomemory:50000000-500003ff irq:177
*-usbhost
product: EHCI Host Controller
vendor: Linux 2.6.9-42.0.3.ELsmp ehci_hcd
physical id: 1
bus info: usb@1
logical name: usb1
version: 2.06
capabilities: usb-2.00
configuration: driver=hub maxpower=0mA slots=8
speed=480.0MB/s
*-pci:4
description: PCI bridge
product: 82801 PCI Bridge
```



```

    vendor: Intel Corporation
    physical id: 1e
    bus info: pci@00:1e.0
    version: e1
    width: 32 bits
    clock: 33MHz
    capabilities: pci subtractive_decode bus_master cap_list
*-isa
    description: ISA bridge
    product: 82801GB/GR (ICH7 Family) LPC Interface Bridge
    vendor: Intel Corporation
    physical id: 1f
    bus info: pci@00:1f.0
    version: 01
    width: 32 bits
    clock: 33MHz
    capabilities: isa bus_master cap_list
    configuration: latency=0
*-ide
    description: IDE interface
    product: 82801G (ICH7 Family) IDE Controller
    vendor: Intel Corporation
    physical id: 1f.1
    bus info: pci@00:1f.1
    version: 01
    width: 32 bits
    clock: 33MHz
    capabilities: ide bus_master
    configuration: driver=PIIX_IDE latency=0
    resources: ioport:20a0-20af irq:153
*-ide
    description: IDE Channel 0
    physical id: 0
    bus info: ide@0
    logical name: ide0
    clock: 33MHz
*-cdrom
    description: DVD writer
    product: LITE-ON DVDRW SHM-165H6S
    physical id: 0
    bus info: ide@0.0
    logical name: /dev/hda
    version: HQSA
    capabilities: packet atapi cdrom removable nonmagnetic
dma lba iordy audio cd-r cd-rw dvd dvd-r
    configuration: mode=udma3
*-disc
    physical id: 0
    logical name: /dev/hda
*-storage
    description: RAID bus controller

```

```
product: 82801GR/GH (ICH7 Family) Serial ATA Storage Controller
RAID
vendor: Intel Corporation
physical id: 1f.2
bus info: pci@00:1f.2
logical name: scsi0
version: 01
width: 32 bits
clock: 66MHz
capabilities: storage bus_master cap_list emulated
configuration: driver=ahci latency=0
resources: ioport:20d0-20d7 ioport:20e8-20eb ioport:20d8-20df
ioport:20ec-20ef ioport:20b0-20bf iomemory:e0a04400-e0a047ff irq:209
*-disk
    description: SCSI Disk
    product: ST3160812AS
    vendor: ATA
    physical id: 0.0.0
    bus info: scsi@0:0.0.0
    logical name: /dev/sda
    version: 3.AH
    serial: 5LS68H19
    size: 149GB
    capabilities: partitioned partitioned:dos
    configuration: ansiversion=5
*-volume:0
    description: Linux filesystem partition
    physical id: 1
    bus info: scsi@0:0.0.0,1
    logical name: /dev/sda1
    capacity: 125MB
    capabilities: primary bootable
*-volume:1
    description: Linux filesystem partition
    physical id: 2
    bus info: scsi@0:0.0.0,2
    logical name: /dev/sda2
    capacity: 15GB
    capabilities: primary
*-volume:2
    description: Linux swap / Solaris partition
    physical id: 3
    bus info: scsi@0:0.0.0,3
    logical name: /dev/sda3
    capacity: 8001MB
    capabilities: primary nofs
*-volume:3
    description: Linux filesystem partition
    physical id: 4
    bus info: scsi@0:0.0.0,4
```

```
logical name: /dev/sda4
capacity: 125GB
capabilities: primary
[root@cie-55-31 ~]#
```

CPU Specifications (cpuinfo)

```
[root@cie-55-31 proc]# more cpuinfo
processor      : 0
vendor_id     : GenuineIntel
cpu family    : 6
model         : 15
model name    : Intel(R) Core(TM)2 CPU          6600  @ 2.40GHz
stepping      : 6
cpu MHz       : 2400.658
cache size    : 4096 KB
physical id   : 0
siblings      : 1
core id       : 0
cpu cores     : 2
fdiv_bug      : no
hlt_bug       : no
f00f_bug      : no
coma_bug      : no
fpu           : yes
fpu_exception : yes
cpuid level   : 10
wp            : yes
flags         : fpu vme de pse tsc msr pae mce cx8 apic sep mtrr pge mca
cmov
pat pse36 clflush dts acpi mmx fxsr sse sse2 ss ht tm pbe nx lm pn1 monitor
ds_c
pl est tm2 xtpr
bogomips      : 4804.66
```

Descripció tècnica

Dades per l'inventari

Descripció	Estació de treball HP xw4400 HDD 160GB
Marca	Hewlett Packard
Model	HP Workstation xw400 Base Unit
Núm. sèrie	CZC70116S7
Núm. referència	ET115AV
Potència	200 W
Emplaçament	c2/-135

Estació de treball per l'Avance-II+ 600MHz

PC HP xw4400 - AVANCE-III 400MHZ SB	
Data de compra	2007-xx-xx 
DHCP UAB	
Data d'alta	2007-10-22
Adreça MAC	3CD92B73EA93
Hostname	cie-55-31
Adreça IP	158.109.55.31
DADES TÈCNIQUES	
Descripció	Estació de treball
Marca	Hewlett Packard
Model	HP Workstation xw4400 Base Unit
Núm. sèrie	CZC70116S7
Núm. referència	ET115AV
Potència	200 W
Emplaçament	c2/-135 (sala de l'AvanceIII 400MHz SB)
HP Care Pack	no cal. Garantia de 3 anys inclosa al producte

Targeta gràfica

La targeta gràfica que ve per defecte es una ,

```
[ 0.509876] tg3.c:v3.116 (December 3, 2010)
[ 0.509894] tg3 0000:28:00.0: PCI INT A -> GSI 16 (level, low) -> IRQ 16
[ 0.509902] tg3 0000:28:00.0: setting latency timer to 64
...
[ 3.364682] intel_rng: Firmware space is locked read-only. If you can't
or
[ 3.364683] intel_rng: don't want to disable this in firmware setup, and
if
[ 3.364684] intel_rng: you are certain that your system has a functional
[ 3.364685] intel_rng: RNG, try using the 'no_fwh_detect' option.
[ 3.458212] EDAC MC0: Giving out device to 'i82975x_edac' 'i82975x': DEV
<NULL>
[ 3.458721] [drm] Initialized drm 1.1.0 20060810
[ 3.787993] HDA Intel 0000:00:1b.0: PCI INT A -> GSI 21 (level, low) ->
IRQ 21
[ 3.788057] HDA Intel 0000:00:1b.0: setting latency timer to 64
[ 3.862605] nouveau 0000:01:00.0: PCI INT A -> GSI 16 (level, low) -> IRQ
16
[ 3.862610] nouveau 0000:01:00.0: setting latency timer to 64
[ 3.864693] [drm] nouveau 0000:01:00.0: failed to evaluate _DSM: 5
[ 3.864973] [drm] nouveau 0000:01:00.0: Detected an NV40 generation card
(0x04be00a2)
[ 3.865325] [drm] nouveau 0000:01:00.0: Attempting to load BIOS image
from PROM
[ 4.064651] [drm] nouveau 0000:01:00.0: ... appears to be valid
```

```

[ 4.064654] [drm] nouveau 0000:01:00.0: BIT BIOS found
[ 4.064656] [drm] nouveau 0000:01:00.0: Bios version 05.73.22.23
[ 4.064659] [drm] nouveau 0000:01:00.0: TMDS table script pointers not
stubbed
[ 4.064661] [drm] nouveau 0000:01:00.0: BIT table 'd' not found
[ 4.064663] [drm] nouveau 0000:01:00.0: Found Display Configuration Block
version 3.0
[ 4.064666] [drm] nouveau 0000:01:00.0: DCB connector table: VHER 0x30 5
10 2
[ 4.064668] [drm] nouveau 0000:01:00.0: 0: 0x00001030: type 0x30 idx 0
tag 0x07
[ 4.064671] [drm] nouveau 0000:01:00.0: 1: 0x00002130: type 0x30 idx 1
tag 0x08
[ 4.064673] [drm] nouveau 0000:01:00.0: 2: 0x00000210: type 0x10 idx 2
tag 0xff
[ 4.064675] [drm] nouveau 0000:01:00.0: 3: 0x00000211: type 0x11 idx 2
tag 0xff
[ 4.064678] [drm] nouveau 0000:01:00.0: 4: 0x00000213: type 0x13 idx 2
tag 0xff
[ 4.064680] [drm] nouveau 0000:01:00.0: Raw DCB entry 0: 01000300
00000028
[ 4.064683] [drm] nouveau 0000:01:00.0: Raw DCB entry 1: 03000302
00000000
[ 4.064685] [drm] nouveau 0000:01:00.0: Raw DCB entry 2: 04011310
00000028
[ 4.064687] [drm] nouveau 0000:01:00.0: Raw DCB entry 3: 04011312
00000000
[ 4.064689] [drm] nouveau 0000:01:00.0: Raw DCB entry 4: 020223f1
00c0c080
[ 4.064695] [drm] nouveau 0000:01:00.0: Parsing VBIOS init table 0 at
offset 0xDE0C
[ 4.064750] [drm] nouveau 0000:01:00.0: Parsing VBIOS init table 1 at
offset 0xE498
[ 4.112601] [drm] nouveau 0000:01:00.0: Parsing VBIOS init table 2 at
offset 0xEB55
[ 4.112619] [drm] nouveau 0000:01:00.0: Parsing VBIOS init table 3 at
offset 0xECD0
[ 4.136596] [drm] nouveau 0000:01:00.0: Parsing VBIOS init table 4 at
offset 0xEE2A
[ 4.155817] [TTM] Zone kernel: Available graphics memory: 513218 kiB.
[ 4.155828] [drm] nouveau 0000:01:00.0: 128 MiB VRAM
[ 4.157109] [drm] nouveau 0000:01:00.0: 64 MiB GART (aperture)
[ 4.158357] [drm] nouveau 0000:01:00.0: Allocating FIFO number 0
[ 4.160123] [drm] nouveau 0000:01:00.0: nouveau_channel_alloc:
initialised FIFO 0
[ 4.160129] [drm] nouveau 0000:01:00.0: Initial CRTC_OWNER is 0
[ 4.160135] [drm] nouveau 0000:01:00.0: Saving VGA fonts
[ 4.199222] [drm] nouveau 0000:01:00.0: Detected a DVI-I connector
[ 4.199274] [drm] nouveau 0000:01:00.0: Detected a DVI-I connector
[ 4.199302] [drm] nouveau 0000:01:00.0: Detected a TV connector
[ 4.200518] [drm] nouveau 0000:01:00.0: Setting dpms mode 3 on vga

```

```
encoder (output 0)
[ 4.200521] [drm] nouveau 0000:01:00.0: Setting dpms mode 3 on tmds
encoder (output 1)
[ 4.200524] [drm] nouveau 0000:01:00.0: Setting dpms mode 3 on vga
encoder (output 2)
[ 4.200526] [drm] nouveau 0000:01:00.0: Setting dpms mode 3 on tmds
encoder (output 3)
[ 4.200528] [drm] nouveau 0000:01:00.0: Setting dpms mode 3 on TV encoder
(output 4)
[ 4.307786] input: HDA Digital PCBeep as
/devices/pci0000:00/0000:00:1b.0/input/input6
[ 4.384233] [drm] nouveau 0000:01:00.0: allocated 1280x1024 fb: 0x49000,
bo ffff88002fd70000
[ 4.397047] [drm] nouveau 0000:01:00.0: Output DVI-I-1 is running on CRTC
0 using output A
[ 4.397051] [drm] nouveau 0000:01:00.0: 0xD1CA: Parsing digital output
script table
[ 4.452076] [drm] nouveau 0000:01:00.0: Setting dpms mode 0 on tmds
encoder (output 1)
[ 4.452080] [drm] nouveau 0000:01:00.0: Output DVI-I-1 is running on CRTC
0 using output A
[ 4.452925] Console: switching to colour frame buffer device 160x64
[ 4.453754] fb0: nouveaufb frame buffer device
[ 4.453756] registered panic notifier
[ 4.453760] [drm] Initialized nouveau 0.0.15 20090420 for 0000:01:00.0 on
minor 0
...
```

- Manual: 
- Drivers: 

Instal·lació de Debian GNU/Linux

La distribució de GNU/Linux instal·lada és la **Debian version 6.0.3, released on October 8th, 2011, codenamed squeeze, AMD64 architecture**, actualitzada via xarxa a **Debian version 6.0.5 released on May 12th, 2012**.

Configuració inicial

- Language: English
- Country: Spain
- Locale: en_US.UTF-8
- Keymap: Spanish
- Host name: cie-55-31 (assignat automàticament per DHCP)
- Domain name: uab.es (assignat automàticament per DHCP)
- User name:
 - sermnuab (SeRMN-UAB Users)
 - sermnadmin (SeRMN-UAB Staff)

- Time zone: Madrid

Partició del disc

Aplico el mateix esquema de partició emprat a l'estació de treball Z400 del 600:

- Partició primària / **(root)** de 20 GB. Inclou /usr i /tmp
- Partició lògica **/var** de 5 GB.
- Partició swap de 12 GB.
- Partició lògica **/opt** de 20 GB. Pel Topspin i altre programari Bruker.
- Partició lògica **/home** de 95 GB (resta d'espai al disc). Entre altres, és on es guardaran les dades dels usuaris.

```
root@cie-55-31:/etc/apt# sfdisk -l
```

```
Disk /dev/sda: 19457 cylinders, 255 heads, 63 sectors/track
Warning: extended partition does not start at a cylinder boundary.
DOS and Linux will interpret the contents differently.
Units = cylinders of 8225280 bytes, blocks of 1024 bytes, counting from 0
```

Device	Boot	Start	End	#cyls	#blocks	Id	System
/dev/sda1	*	0+	2431-	2432-	19530752	83	Linux
/dev/sda2		2431+	19457-	17026-	136757249	5	Extended
/dev/sda3		0	-	0	0	0	Empty
/dev/sda4		0	-	0	0	0	Empty
/dev/sda5		2431+	3039-	608-	4881408	83	Linux
/dev/sda6		3039+	4498-	1459-	11717632	82	Linux swap / Solaris
/dev/sda7		4498+	6929-	2432-	19529728	83	Linux
/dev/sda8		6929+	19457-	12528-	100625408	83	Linux

Instal·lació i configuració de Debian

Instal·lació bàsica de programes

Les *col·leccions* de programes a instal·lar seleccionades són:

- Desktop Environment
- Standard System

La resta de programes que poguessin ser necessaris, s'instal·laran més endavant.

GRUB Boot Loader

GRUB Boot Loader s'instal·la al MBR.

Reiniciar per primer cop

Un cop s'han instal·lat tots els paquets, reinicio l'ordinador i entro a la sessió de GNU/Debian Squeeze.

Simplificació de l'escriptori

Simplifico l'escriptori:

- Elimino el panel inferior. Abans de fer-ho, moc els applets *Window List* i *Workspace Switcher* al panel superior.
- Elimino els applets *Notification Area* i *Window Selector* al panel superior, el primer perquè no vull que els usuaris enredin les connexions a la xarxa, i el segon perquè és redundant amb el *Window List*.
- Al *Workspace Switcher* redueixo el nombre d'escriptoris a 2. Els usuaris de MS-Windows no coneixen el concepte d'escriptoris i tenen tendència a perdre's.
- Canvio la configuració del *Workpsace Switcher*
 - Show windows from all workspaces
 - Group windows when space is limited
 - Restore to native workspace (les finestres minimitzades s'obren a l'escriptori on es van tancar)
- Afegeixo els applets *Lock Screen Button* per bloquejar la pantalla, i *Log Out Button* per sortir de la sessió o per canviar a un altre usuari.

Edito el menú per amagar les aplicacions que no vull que vegin els usuaris (jocs i altres entreteniments). Més endavant miraré d'esbrinar com es poden desinstal·lar algunes d'aquestes aplicacions innecessàries. Entre altres:

- L'usuari "normal" no hauria de veure el menú *System | Administration*
- L'usuari "normal" no hauria de veure moltes de les opcions disponibles al menú *System | Preferences*
- ...

Addició d'altres magatzems (repositories) de programes

Afegeixo altres magatzems (repositories) de programes:

- deb <http://backports.debian.org/debian-backports/> squeeze-backports main
- deb <http://www.debian-multimedia.org/> squeeze main contrib non-free

i la signatura (debian-multimedia-keyring) del magatzem *debian-multimedia*, i instal·lo:

- Adobe Acrobat Reader

Altres paquets i programes de Debian

Afegeixo els següents paquets o programes (aquest no és un llistat exhaustiu, només inclou els dimonis i servidors de xarxa, i altres programes importants):

- ssh (openssh-server, openssh-client)
- mc (midnight commander)
- rsync
- ftp-ssl en comptes de ftp
- denyhosts
- nfs-kernel-server
- tftp-hpa
- tftpd-hpa **Cal reconfigurar!**
- bootparamd **Cal reconfigurar!**
- xinetd (en comptes del programa per defecte: openbsd-inetd)

Elimino els paquets o programes:

- telnet
- ...

Elimino els següents metapackages per poder eliminar altres paquets o programes que depenen d'ells sense haver de desinstal·lar altres paquets que sí que m'interessen,

- gnome
- gnome-desktop-environment
- gnome-office

Llavors desinstal·lo:

- gnome-games, gnome-games-data, gnome-games-extra-data
- simple-scan, xsane, xsane-common, i les biblioteques relacionades
- ...

Substitueixo la versió lliure de Java (java-6-openjdk i paquets que en dependen) per la versió oficial (sun-java6-jdk i paquets que en depenen).

Configuració de la xarxa

Actualment la configuració de la xarxa de la UAB la proporciona un servidor de DHCP. Per evitar que la caiguda de la xarxa afecti el funcionament de l'espectròmetre, **la configuració s'haurà de canviar a estàtica**. Els paràmetres són,

- Hostname: cie-55-31
- Domain: uab.es
- IP address: 158.109.55.31
- Broadcast: 158.109.63.255
- Netmask: 255.255.240.0
- DNS:
 - domain uab.es
 - search uab.es
 - nameserver 158.109.0.9
 - nameserver 158.109.254.130
 - nameserver 158.109.0.1

La configuració de més amunt és l'emprada per la targeta de xarxa de la placa base,

```
eth0      Link encap:Ethernet  HWaddr 3c:d9:2b:73:ea:93
          inet addr:158.109.56.18  Bcast:158.109.63.255  Mask:255.255.240.0
          inet6 addr: fec0::a:3ed9:2bff:fe73:ea93/64  Scope:Site
          inet6 addr: 2002:9e6d:3b49:a:3ed9:2bff:fe73:ea93/64  Scope:Global
          inet6 addr: fe80::3ed9:2bff:fe73:ea93/64  Scope:Link
          UP BROADCAST RUNNING MULTICAST  MTU:1500  Metric:1
          RX packets:91257 errors:0 dropped:0 overruns:0 frame:0
          TX packets:1609 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:23348532 (22.2 MiB)  TX bytes:123310 (120.4 KiB)
          Interrupt:17
```

i ha estat obtinguda del servidor de DHCP de la universitat, a l'igual que la configuració de servidors de noms,

```
# more resolv.conf
# Generated by NetworkManager
domain uab.es
search uab.es
nameserver 158.109.0.9
nameserver 158.109.254.130
nameserver 158.109.0.1
```

La targeta de xarxa addicional també es reconeix,

```
eth1      Link encap:Ethernet  HWaddr 1c:7e:e5:10:90:0a
          UP BROADCAST MULTICAST  MTU:1500  Metric:1
          RX packets:0 errors:0 dropped:0 overruns:0 frame:0
          TX packets:0 errors:0 dropped:0 overruns:0 carrier:0
          collisions:0 txqueuelen:1000
          RX bytes:0 (0.0 B)  TX bytes:0 (0.0 B)
          Interrupt:21 Base address:0x6000
```

però no té una configuració assignada. Caldrà configurar-la de forma estàtica amb els paràmetres de connexió emprats actualment per la connexió de l'estació de treball a la consola.

Paquets i programes de Debian

Com que la configuració de la xarxa és estàtica, per evitar problemes elimino,

- network-manager i network-manager-gnome, i
- isc-dhcp i isc-dhcp-common,

i instal·lo

- net-tools, i
- ifupdown-extra, que alhora arrossega els paquets
 - ethtools, i
 - iputils-arping

Configuració de les targetes de xarxa

Per evitar que en algun moment es pugui bescanviar la configuració de les targetes de xarxa poso en pràctica les opcions esmentades a [How to reorder or rename logical interface names in Linux](#).

Una opció seria fer servir el programa `nameif` (paquet *net-tools*) per assignar un nom de dispositiu en funció de l'adreça física de la targeta; i després emprar el nom de dispositiu assignat al fitxer de configuració *etc/network/interface*.

Però una consulta al fitxer *etc/udev/rules.d/70-persistent-net.rules* indica que l'assignació del nom de dispositiu, *eth0* o *eth1* feta pel programa `udev` és fixe, i que no hi ha perill de que canviï en reiniciar l'ordinador,

```
root@cie-55-31:/etc/udev/rules.d# more 70-persistent-net.rules
# This file was automatically generated by the /lib/udev/write_net_rules
# program, run by the persistent-net-generator.rules rules file.
#
# You can modify it, as long as you keep each rule on a single
# line, and change only the value of the NAME= key.

# PCI device 0x14e4:0x1684 (tg3)
SUBSYSTEM=="net", ACTION=="add", DRIVERS=="?*",
ATTR{address}=="3c:d9:2b:73:ea:93",
    ATTR{dev_id}=="0x0", ATTR{type}=="1", KERNEL=="eth*", NAME="eth0"

# PCI device 0x1186:0x4300 (r8169)
SUBSYSTEM=="net", ACTION=="add", DRIVERS=="?*",
ATTR{address}=="1c:7e:e5:10:90:0a",
    ATTR{dev_id}=="0x0", ATTR{type}=="1", KERNEL=="eth*", NAME="eth1"
```

Així doncs, podem fer servir *eth0* i *eth1* al fitxer de configuració *etc/network/interfaces* sense preocupacions.

Bibliografia

- [Network Configuration](#) a la wiki de Debian.
- [NetworkManager](#) a la wiki de Debian.
- [Chapter 5. Network setup](#), a *Debian Reference*, by Osamu Aoki.
- [Disable NetworkManager](#)
- ...

Fitxers de configuració provisionals

Aquesta és la configuració de xarxa provisional emprada per la instal·lació i configuració del sistema operatiu i del programa TopSpin.

/etc/hosts

```
127.0.0.1    localhost
127.0.1.1    cie-55-31.uab.es    cie-55-31
```

/etc/resolv.conf

```
# Generated by NetworkManager
domain uab.es
search uab.es
nameserver 158.109.0.9
nameserver 158.109.254.130
nameserver 158.109.0.1
```

/etc/network/interfaces

```
# This file describes the network interfaces available on your system
# and how to activate them. For more information, see interfaces(5).

# The loopback network interface
auto lo
iface lo inet loopback

# Ethernet interfaces are assigned to physical devices in a
# persistent way according to rules in file:
#
#   /etc/udev/rules.d/70-persistent-net.rules
#
# Hence, each of eth0 and eth1 will **always** correspond to
# the same device. The configuration below assumes that,
#
#   eth0 -> lan (internet)
#   eth1 -> nmr (spectrometer ccu or ipso)
#
auto eth0 eth1

# LAN / INTERNET - Assigned to the primary network interface,
# which usually will be the motherboard integrated NIC.
#
iface eth0 inet static
    address 158.109.55.31
    netmask 255.255.240.0
    broadcast 158.109.63.255
    gateway 158.109.0.3

# NMR CONSOLE LAN - Assigned to the secondary network interface,
# which usually will be the added NIC.
#
iface eth1 inet static
    address 149.236.99.255
    netmask 255.255.255.0
    network 149.236.99.0
```

```
broadcast 10.10.255.255
```

/etc/udev/rules.d/70-persistent-net.rules

```
# This file was automatically generated by the /lib/udev/write_net_rules
# program, run by the persistent-net-generator.rules rules file.
#
# You can modify it, as long as you keep each rule on a single
# line, and change only the value of the NAME= key.

# PCI device 0x14e4:0x1684 (tg3)
SUBSYSTEM=="net", ACTION=="add", DRIVERS=="?*",
ATTR{address}=="3c:d9:2b:73:ea:93",
    ATTR{dev_id}=="0x0", ATTR{type}=="1", KERNEL=="eth*", NAME="eth0"

# PCI device 0x1186:0x4300 (r8169)
SUBSYSTEM=="net", ACTION=="add", DRIVERS=="?*",
ATTR{address}=="1c:7e:e5:10:90:0a",
    ATTR{dev_id}=="0x0", ATTR{type}=="1", KERNEL=="eth*", NAME="eth1"
```

Configuració de serveis

Avahi

 S'ha de configurar (fitxer `/etc/avahi/avahi-daemon.conf`) per tal de restringir la difusió dels serveis disponibles a l'ordinador i, potser, la cerca de serveis a la xarxa.

Trivial FTP daemon

Enllaços sobre la configuració del *tftpd*

- <http://chschneider.eu/linux/server/tftpd-hpa.shtml>
- <http://diablo.craem.net/wordpress/?p=171>
- ...

Bootparam

Cal configurar-lo per servir el sistema operatiu de la consola.

NFS

Cal configurar-lo per servir el sistema operatiu de la consola.

NTP

Instal·lo el paquet *ntp* i al final del fitxer */etc/ntp.conf* afegeixo els següents servidors de temps,

- server swisstime.ethz.ch
- server ntp.uab.es
- server ntp.univ-lyon1.fr

Altres programes no procedents de Debian

Afegeixo els programes:

- Firefox del lloc web de Mozilla
- Filezilla?  potser no cal, perquè el gestor de fitxers ja incorpora un client de ftp/ssh.
- ...

Hardware especial

Drivers per la targeta gràfica

Instal·lo els drivers més actuals disponibles a debian-backports.

Per més informació consultar:

- http://wiki.debian.org/NvidiaGraphicsDrivers#non-free_drivers
- <http://www.nvidia.com/object/unix.html>
- <http://www.nvidia.com/object/linux-display-amd64-290.10-driver.html>
- <http://packages.debian.org/search?keywords=nvidia-glx>
- ...

Per veure si es poden connectar dos monitors consultar:

- http://en.gentoo-wiki.com/wiki/X.Org/Dual_Monitors/Nvidia
- http://www.nvidia.com/object/feature_twinview.html
- <http://ubuntuforums.org/showthread.php?t=1817622>
- <http://www.ublug.org/ubuntu/twinview/twinview-howto-breezy.html>
- <http://us.download.nvidia.com/solaris/96.43.21/README/appendix-g.html>
- http://defindit.com/readme_files/x_windows_dual_monitor.html
- <http://forums.nvidia.com/>
- ...

Drivers per la 2a targeta de xarxa

Aparentment no cal instal·lar cap driver especial ja que la targeta és suportada per GNU/Linux, però per si de cas, aquests són alguns enllaços relacionats amb aquest model de targeta:

- [linux driver dge-528t](#) a Google

- [Technical Support - DGE-528T - Copper Gigabit PCI Card for PC](#)
- [DGE-528T - Copper Gigabit PCI Card for PC](#)
- [Components supported by the r8169 module](#)

Drivers per la targeta amb ports sèrie

La targeta és reconeguda i configurada pel sistema, no cal instal·lar cap controlador addicional,

```
[ 0.688353] Serial: 8250/16550 driver, 4 ports, IRQ sharing enabled
[ 0.688545]   alloc irq_desc for 16 on node -1
[ 0.688546]   alloc kstat_irqs on node -1
[ 0.688550] serial 0000:1c:00.0: PCI INT A -> GSI 16 (level, low) -> IRQ
16
[ 0.688562] 2 ports detected on Oxford PCI Express device
[ 0.688613] ttyS0: detected caps 00000700 should be 00000100
[ 0.688617] 0000:1c:00.0: ttyS0 at MMIO 0xec401000 (irq = 16) is a
16C950/954
[ 0.688670] ttyS1: detected caps 00000700 should be 00000100
[ 0.688674] 0000:1c:00.0: ttyS1 at MMIO 0xec401200 (irq = 16) is a
16C950/954
```

Configuració de la BIOS



Quan tot estigui funcionant caldrà verificar la configuració de la BIOS, per exemple, per protegir l'accés amb una contrasenya.

Securing Debian GNU/Linux

- [Debian SELinux support](#). The Debian packaged Linux kernels have had SELinux support compiled in (but disabled by default) since version 2.6.9.
 - [SELinux Setup](#)
- [Security-Enhanced Linux](#)
- [SELinux Project Wiki](#)
- [SELINUX \(Security-Enhanced Linux\)](#)
- [Securing and Hardening Red Hat Linux Production Systems](#). A Practical Guide to Basic Linux Security in Production Enterprise Environments. Written by Werner Puschitz.

Altres millores a Debian

Devil's pie

- [Devil's Pie](#) is a window-matching utility, inspired by Sawfish's "Matched Windows" option and the lack of the functionality in Metacity. Metacity lacking window matching is not a bad thing — Metacity is a lean window manager, and window matching does not have to be a window manager task. Devil's Pie can be configured to detect windows as they are created, and match the window to a set of rules. If the window matches the rules, it can perform a series of actions

on that window. For example, I can make all windows created by X-Chat appear on all workspaces, and the main Gkrellm1 window does not appear in the pager or task list.

- [Devilspie](#) is a non-gui utility that lets you make applications start in specified workplaces, in specified sizes and placements, minimized or maximized and much more based on simple config files.
- [GDevilspie](#) is a user friendly interface to the devilspie window matching daemon, to create rules easily.
 - [How do I tell a start up program to start minimized?](#)

Teamviewer

- [TeamViewer](#) the All-In-One Solution for Remote Access and Support over the Internet. TeamViewer connects to any PC or server around the world within a few seconds. You can remote control your partner's PC as if you were sitting right in front of it.

Configuració de GNOME

Consultar els següents enllaços sobre cómo millorar o personalitzar el comportament de Gnome

- [GNOME](#) at ArchLinux
 - [GNOME Tips](#)
 - [Configuring GDM 2.28](#)

Instal·lació del Topspin

- [Instal·lació del Topspin 3.1](#)
- [Instal·lació del Topspin 2.1](#)

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