

# Llicències del ParaVision

Les llicències a l'antic ordinador estaven associades al **hostid = 001635008807**

```
...
#<!-- LICENSE START -->
SERVER sermn112 001635008807 1700
DAEMON bruker_ls /usr/local/flexlm/Bruker
DAEMON bbmri_ls /usr/local/flexlm/Bruker
...
```

que es correspon a l'**adreça MAC 00:16:35:00:88:07** del dispositiu de xarxa *eth0*

```
[root@sermn112 root]# ip addr
1: lo: <LOOPBACK,UP> mtu 16436 qdisc noqueue
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 brd 127.255.255.255 scope host lo
4: dev11794: <BROADCAST,MULTICAST> mtu 1500 qdisc noop qlen 1000
    link/ether 00:10:18:14:59:ff brd ff:ff:ff:ff:ff:ff
5: eth0: <BROADCAST,MULTICAST,UP> mtu 1500 qdisc pfifo_fast qlen 1000
    link/ether 00:16:35:00:88:07 brd ff:ff:ff:ff:ff:ff
    inet 192.168.2.12/24 brd 192.168.2.255 scope global eth0
```

Aquest dispositiu **és el que està a la placa base**, o sigui que no es pot transferir al nou ordinador i, en conseqüència, les llicències associades a aquest hostid tampoc es poden transferir.

## Fitxer de llicències

Aquestes són les llicències del ParaVision a l'ordinador antic que s'hauran de transferir al nou ordinador,

```
#NOTE: You can edit the hostname on the server line (1st arg),
#       the port address on the server line (3rd arg),
#       or the path to the daemon on the daemon line (2nd arg)
#       and any right-half of a string (b) of the form a=b
#       where a is all lowercase.
#       Any other changes will invalidate this license.

#<!-- LICENSE START -->
SERVER sermn112 001635008807 1700
DAEMON bruker_ls /usr/local/flexlm/Bruker
DAEMON bbmri_ls /usr/local/flexlm/Bruker
#
# TOPSPIN 2
#
FEATURE TOPSPIN2 bruker_ls 0.0 29-may-2024 1 DB5EE0D1B6D41336FB3E \
    vendor_info=" for hostid(s) : 001635008807" \
```

```
ISSUER=003048741683
FEATURE TOPSPIN_1D bruker_ls 0.0 29-may-2024 1 2B7E00A170B10F13CE6C \
  vendor_info=" for hostid(s) : 001635008807" \
  ISSUER=003048741683
FEATURE TOPSPIN_2D bruker_ls 0.0 29-may-2024 1 2B9E30E170A9446ED119 \
  vendor_info=" for hostid(s) : 001635008807" \
  ISSUER=003048741683
FEATURE XWINPLOT bruker_ls 0.0 29-may-2024 1 EB3E7041DC49A8E88C66 \
  vendor_info=" for hostid(s) : 001635008807" \
  ISSUER=003048741683
FEATURE TOPSPIN_ACQU bruker_ls 0.0 29-may-2024 1 7BCE408134EF3D45D6FB \
  vendor_info=" for hostid(s) : 001635008807" \
  ISSUER=003048741683
FEATURE NMRSIM bruker_ls 0.0 29-may-2024 1 EBDE1011C44DB45F3533 \
  vendor_info=" for hostid(s) : 001635008807" \
  ISSUER=003048741683
FEATURE NMRCHECK bruker_ls 0.0 29-may-2024 1 BBDEC0F1ED2C3CD7A387 \
  vendor_info=" for hostid(s) : 001635008807" \
  ISSUER=003048741683
FEATURE NMRGUIDE bruker_ls 0.0 29-may-2024 1 7BBE80E13B533908CD0F \
  vendor_info=" for hostid(s) : 001635008807" \
  ISSUER=003048741683
FEATURE AUREMOL2.0 bruker_ls 0.0 29-aug-2009 uncounted \
  AB0EC0D1D587C8731CB0 HOSTID=001635008807 vendor_info=" for \
  hostid(s) : 001635008807" ISSUER=003048741683
FEATURE AUTOLINK bruker_ls 0.0 29-nov-2009 uncounted \
  1BFEF071CF46CED2DEFF HOSTID=001635008807 vendor_info=" for \
  hostid(s) : 001635008807" ISSUER=003048741683
FEATURE TOPSPIN_ACQU bruker_ls 0.0 29-apr-2023 1 6B6E50B17D9F36A5A09C \
  vendor_info=" for hostid(s) : 001635008807" \
#
# PV License Manager 1.000 (C) Copyright Bruker BioSpin MRI GmbH, 2002-2008
# generated on host 149.236.5.194
# License ID : 28227@1209393614
#
INCREMENT PVSTARTUP bbmri_ls 4.000 28-apr-2033 1 \
  ISSUER=00304870aa810430WWwWtHIommFWwEItuWPPWo0493S2380w \
  SIGN="0050 9718 2699 9B19 AFC6 4000 79C1 3400 9D6B 342E FA6C \
  1BAC 65FA 8997 BF7B"
INCREMENT PVDATMAN bbmri_ls 4.000 28-apr-2033 1 \
  ISSUER=00304870aa810430WWwWtHIommFWwEItuWPPWo04gS3BSnw \
  SIGN="00CA 0D06 080D 85C3 990C 1964 93C8 AD00 2344 26E6 86F2 \
  0E76 5E89 11AC 34A9"
INCREMENT 3DVISUAL bbmri_ls 4.000 28-apr-2033 1 \
  ISSUER=00304870aa810430WWwWtHIommFWwEItuWPPWotg4Z98Svw \
  SIGN="00E4 11CD B5D7 A957 C51C 44AF 7AAC 7500 33F9 6847 EB32 \
  F6A7 6D89 28C3 1DBB"
INCREMENT NMRCALC bbmri_ls 4.000 28-apr-2033 1 \
  ISSUER=00304870aa8171dd999394i6QEEy99364599ww9QWqYyrGyg \
```

```
SIGN="004E 1FA2 94E8 2A7D 9347 1407 EC6B 9300 D4B8 CA57 11FC \
CD0D 53DC BEB7 CC7B"
INCREMENT DCMSTORAGE bbmri_ls 4.000 28-apr-2033 1 \
ISSUER=00304870aa8171dd999394i6QEEy99364599ww9QUyquIeYrpig \
SIGN="001E 22F1 B512 48B4 E0B0 3E7B 6F8C 6600 DA65 5B79 B0D5 \
3942 188C 1DBD 0F84"
INCREMENT PVMDTI bbmri_ls 4.000 28-apr-2033 1 \
ISSUER=00304870aa8171dd999394i6QEEy99364599ww9QRPqUIsg \
SIGN="00DF C064 A08C E843 4FB9 0D53 1B0B 3400 41E8 BE5B D9EF \
B4E3 359E 34CE F1A2"
INCREMENT PVMSPECTRO bbmri_ls 4.000 28-apr-2033 1 \
ISSUER=00304870aa8171dd999394i6QEEy99364599ww9QRPquRiyIYeg \
SIGN="0037 3502 A879 1567 43C9 E4E2 7BA1 F200 2E6A BB8B 6F4A \
5A6E 40BA 474A 16F0"
#
# PV License Manager 1.000 (C) Copyright Bruker BioSpin MRI GmbH, 2002-2008
# generated on host 149.236.5.194
# License ID : 4272@1236257295
#
INCREMENT PVSTARTUP bbmri_ls 5.000 5-mar-2034 1 \
ISSUER=003048c038225177xxxCx501994xxC0BMxx22x1pqDf3sfGpY \
SIGN="001A 29C0 E1D2 79AE EBF8 A2DC D65E 6A00 7DD1 D207 CEF1 \
5F92 D140 8285 8FAA"
INCREMENT PVDATMAN bbmri_ls 5.000 5-mar-2034 1 \
ISSUER=003048c038225177xxxCx501994xxC0BMxx22x1pq73fU3iY \
SIGN="00B6 74C0 13A1 E315 3B6A EE2A 9984 3800 6FEE 895E F1EA \
79F0 0398 AD26 9815"
INCREMENT 3DVISUAL bbmri_ls 5.000 5-mar-2034 1 \
ISSUER=003048c038225177xxxCx501994xxC0BMxx22x1B7qEDG3yY \
SIGN="004F 2C97 3896 9DA9 4205 BFBB F1FE 3200 5FDA 67BC 7651 \
1CCB 02FC A20F 6A63"
INCREMENT NMRCALC bbmri_ls 5.000 5-mar-2034 1 \
ISSUER=003048c038225177xxxCx501994xxC0BMxx22x1iUs43y4Y \
SIGN="0044 0EE4 73E1 BB1A 0769 4304 33A4 D300 E0D5 9427 FA52 \
1C82 565B F9F5 D4AB"
INCREMENT DCMSTORAGE bbmri_ls 5.000 5-mar-2034 1 \
ISSUER=003048c038225177xxxCx501994xxC0BMxx22x174UDf0s3Q5Y \
SIGN="00A3 62E8 FDAB ED1B DD22 C306 EE0B 5700 6065 6A4C 5E96 \
945A 4B89 F0B5 8508"
INCREMENT PVMDTI bbmri_ls 5.000 5-mar-2034 1 \
ISSUER=003048c038225177xxxCx501994xxC0BMxx22x1pqU7fEY \
SIGN="0016 A048 7FEB DA0B 94B6 E1AB A50B 7700 BB7A 07F2 BA7E \
8DFF 7BDB DFC2 6347"
INCREMENT PVMEPI bbmri_ls 5.000 5-mar-2034 1 \
ISSUER=003048c038225177xxxCx501994xxC0BMxx22x1pqU5pEY \
SIGN="0095 8C66 E0FE E142 AA68 7778 6D33 1700 AE4D 72C6 0815 \
2C44 70F9 151A EE3D"
INCREMENT PVMUTE bbmri_ls 5.000 5-mar-2034 1 \
ISSUER=003048c038225177xxxCx501994xxC0BMxx22x1pqUGf5Y \
SIGN="0060 13DC 8050 A699 AF01 A44F 4493 7200 739E CA75 1E5D \
17CF 8E9A 1C8C 4EB2"
```

```
INCREMENT PVMSPECTRO bbmri_ls 5.000 5-mar-2034 1 \
    ISSUER=003048c038225177xxxCx501994xxC0BMxx22x1pqUDp54fs0Y \
    SIGN="0067 5C0E C11C F727 52BF 239F E74A 0200 7969 91CD EC4E \
    5A06 4F72 3EB9 9FD9"
# NOTE: You can edit the following items:
#       - hostnames in the SERVER line(s),
#       - port number(s) (TCP/IP) in the SERVER line(s), or
#       - pathnames in the DAEMON line
#       Any other changes may invalidate your license!
#<!-- LICENSE END -->
```

## Virtual Ethernet Interface

Una possible solució seria crear una interfície de xarxa virtual amb l'adreça MAC corresponent al hostid de les llicències,

- [How can I create a virtual ethernet interface on a machine without a physical adapter?](#)
  - [Wiproute2](#)
  - [Linux Networking: Dummy Interfaces and Virtual Bridges](#)
- [How can we create multiple dummy interfaces on Linux?](#)
- [Dummy Interface](#)

Provo a crear un dispositiu de xarxa virtual,

```
root@cie-50-189:/etc/apt/sources.list.d# lsmod | grep dummy
root@cie-50-189:/etc/apt/sources.list.d# modprobe dummy
root@cie-50-189:/etc/apt/sources.list.d# lsmod | grep dummy

root@cie-50-189:/etc/apt/sources.list.d# ip link set name eth10 dev dummy0

root@cie-50-189:/etc/apt/sources.list.d# ip link show eth10
3: eth10: <BROADCAST,NOARP> mtu 1500 qdisc noop state DOWN mode DEFAULT
group default qlen 1000
    link/ether 72:41:bb:27:88:0d brd ff:ff:ff:ff:ff:ff

root@cie-50-189:/etc/apt/sources.list.d# ip link set eth10 address
00:16:35:00:88:07
```

i comprovo que efectivament es crea un dispositiu de xarxa amb l'adreça MAC 00:16:35:00:88:07 corresponent al hostid de les llicències que tenim: 001635008807,

```
root@cie-50-189:/etc/apt/sources.list.d# ip link show eth10
3: eth10: <BROADCAST,NOARP> mtu 1500 qdisc noop state DOWN mode DEFAULT
group default qlen 1000
    link/ether 00:16:35:00:88:07 brd ff:ff:ff:ff:ff:ff
```

Per ara el desactivo

```
root@cie-50-189:/etc/modules-load.d# ip link set eth10 down
root@cie-50-189:/etc/modules-load.d# ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group
default qlen 1
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state
UP group default qlen 1000
    link/ether dc:4a:3e:6f:8d:fa brd ff:ff:ff:ff:ff:ff
    inet 192.168.2.15/24 brd 192.168.2.255 scope global eth0
        valid_lft forever preferred_lft forever
    inet6 fe80::de4a:3eff:fe6f:8dfa/64 scope link
        valid_lft forever preferred_lft forever
3: eth10: <BROADCAST,NOARP> mtu 1500 qdisc noop state DOWN group default
qlen 1000
    link/ether 00:16:35:00:88:07 brd ff:ff:ff:ff:ff:ff
```

si tingués una adreça IP assignada l'hauríem d'esborrar,

```
ip addr del 192.168.0.77/24 dev eth10
```

i elimino el dispositiu virtual (dummy kernel module)

```
root@cie-50-189:/etc/modules-load.d# rmmod dummy
root@cie-50-189:/etc/modules-load.d# ip addr
1: lo: <LOOPBACK,UP,LOWER_UP> mtu 65536 qdisc noqueue state UNKNOWN group
default qlen 1
    link/loopback 00:00:00:00:00:00 brd 00:00:00:00:00:00
    inet 127.0.0.1/8 scope host lo
        valid_lft forever preferred_lft forever
    inet6 ::1/128 scope host
        valid_lft forever preferred_lft forever
2: eth0: <BROADCAST,MULTICAST,UP,LOWER_UP> mtu 1500 qdisc pfifo_fast state
UP group default qlen 1000
    link/ether dc:4a:3e:6f:8d:fa brd ff:ff:ff:ff:ff:ff
    inet 192.168.2.15/24 brd 192.168.2.255 scope global eth0
        valid_lft forever preferred_lft forever
    inet6 fe80::de4a:3eff:fe6f:8dfa/64 scope link
        valid_lft forever preferred_lft forever
```

El problema ara és que el gestor de llicències fa servir l'adreça MAC del dispositiu de xarxa de nom *eth0*, però aquest correspon al dispositiu de xarxa real i no el virtual. Així doncs, caldrà assignar a aquest dispositiu un nom diferent, per exemple *eth1*, i així poder crear un dispositiu de xarxa virtual de nom *eth0*.

Per aconseguir-ho caldrà modificar al fitxer */etc/udev/rules.d/70-persistent-net.rules* la regla d'assignació del gestor de dispositius *udev* [creada anteriorment](#) de forma semblant a com es descriu a [Configuring eth0 for Flexlm/Hostid](#).

Canvio el nom assignat al dispositiu de *eth0* a *eth1*:

```
root@cie-50-189:/etc/udev/rules.d# cat 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 0x8086:0x15b7 (e1000e)
SUBSYSTEM=="net", ACTION=="add", DRIVERS=="?*",
ATTR{address}=="dc:4a:3e:6f:8d:fa", ATTR{dev_id}=="0x0", ATTR{type}=="1",
KERNEL=="eth*", NAME="eth1"
```

També cal comprovar els fitxers de configuració del gestor de xarxes *systemd-networkd*, on sembla ser que també es podrà definir del dispositiu virtual de xarxa:

The configuration files are read from the files located in the system network directory `/lib/systemd/network`, the volatile runtime network directory `/run/systemd/network` and the local administration network directory `/etc/systemd/network`.

Networks are configured in `.network` files, see `systemd.network(5)`, and virtual network devices are configured in `.netdev` files, see `systemd.netdev(5)`.

Per informació sobre cómo fer-ho, cal consultar les següents pàgines del manual (man pages)

- `systemd.network`
- `systemd-networkd` (`systemd-networkd.service`)
- ...

## Load dummy module at boot

A Debian, els mòduls que s'han de carregar quan es posa en marxa l'ordinador es poden definir al fitxer */etc/modules*,

The `/etc/modules` file contains the names of kernel modules that are to be loaded at boot time, one per line. Arguments can be given in the same line as the module name. Lines beginning with a '#' are ignored.

o dins la carpeta */etc/modules-load.d* tal i com s'explica a,

- [modules-load.d - Configure kernel modules to load at boot](#)
- [Permanent dummy interface](#)
- [Automate modprobe command at boot time on Fedora](#)
- [Where to put fake interface commands and startup? which file?](#)
- [Load kernel modules at boot time on Redhat/Centos Linux](#)

- [Kernel modules](#)

Així doncs...

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