

Installing new Kernel in Boston machines (SuperServers 6022P-6). The RedHat version available in the department is RedHat 7.2 (kernel 2.4.7-10smp). With this version of kernel the GigE NIC (Intel PRO/1000 XT) doesn't work.

To make it working I had to install the kernel version 2.4.9-34smp that I downloaded from:
<ftp://updates.redhat.com/7.2/en/os/i586/>

To install the kernel use the documentation from RedHat site from:
<http://www.redhat.com/support/resources/howto/kernel-upgrade/>

When installing the kernel doing:

```
# rpm -ihv kernel-smp-2.4.9-34.i586.rpm
```

can complain because:

```
modutils >= 2.4.13 is needed by kernel-smp-2.4.9-34
tux < 2.1.1-10 conflicts with kernel-smp-2.4.9-34
```

Update these packages from the site:

<ftp://updates.redhat.com/7.2/en/os/i386/>

Doing for instance:

```
rpm -Uhv modutils-2.4.13-0.7.1.i386.rpm
```

and install the kernel again.

If you are using grub as boot manager, change the /etc/grub.conf file adding (or something similar):

```
title Red Hat Linux-up (2.4.9-34smp)
  root (hd0,0)
  kernel /boot/vmlinuz-2.4.9-34smp ro root=/dev/hda1
  initrd /boot/initrd-2.4.9-34smp.img
```

That is an example of grub.conf ready to boot in the new kernel:

```
# grub.conf generated by anaconda
#
#boot=/dev/hda
default=3
timeout=10
splashimage=(hd0,0)/boot/grub/splash.xpm.gz
title Red Hat Linux (2.4.9-34smp)
  root (hd0,0)
  kernel /boot/vmlinuz-2.4.9-34smp ro root=/dev/hda1
  initrd /boot/initrd-2.4.9-34smp.img
title Red Hat Linux (2.4.7-10smp)
  root (hd0,0)
  kernel /boot/vmlinuz-2.4.7-10smp ro root=/dev/hda1
  initrd /boot/initrd-2.4.7-10smp.img
title Red Hat Linux-up (2.4.7-10)
  root (hd0,0)
  kernel /boot/vmlinuz-2.4.7-10 ro root=/dev/hda1
  initrd /boot/initrd-2.4.7-10.img
title Red Hat Linux-up (2.4.9-34smp)
  root (hd0,0)
```

```
kernel /boot/vmlinuz-2.4.9-34smp ro root=/dev/hda1
initrd /boot/initrd-2.4.9-34smp.img
```

and finally reboot the server.

To check the parameters for our e1000 driver we can do:

```
$cat /proc/net/PRO_LAN_Adapters/eth2.info
```

We will see something like:

```
Description      Intel(R) PRO/1000 Network Connection
Part_Number      a68178-003
Driver_Name      e1000
Driver_Version   3.1.23
PCI_Vendor       0x8086
PCI_Device_ID    0x1008
PCI_Subsystem_Vendor 0x8086
PCI_Subsystem_ID 0x1107
PCI_Revision_ID  0x02
PCI_Bus          5
PCI_Slot         1
PCI_Bus_Type     PCI
PCI_Bus_Speed    66MHz
PCI_Bus_Width    64-bit
IRQ              96
System_Device_Name eth2
Current_HWaddr   00:02:B3:A8:48:B0
Permanent_HWaddr 00:02:B3:A8:48:B0

Link            up
Speed           1000
Duplex          full
State           up
```

We can download the latest version of the driver from:

<http://support.intel.com/support/network/adapter/1000/software.htm>