

pre-install

*it ain't what you don't know that
hurts you, it's what you think you
know, that just ain't so*

So what do you have??

- It's a good idea before running any OS installer to know what you're installing it on
- RedHat install docs reference Windows hardware utilities
- There are better tools

Virtual Terminals

Linux like all UNIX variants is designed from the ground up as a multi-user system (designed to have multiple different users logged on simultaneously).

You could set up remote terminals and log on to the same system, OR you can log on to the same system using "virtual" terminals using the CNTRL-ALT-Fx key combination

Pressing CNTRL-ALT-F1 will switch the display to virtual terminal 1. CNTRL-ALT-F7 will switch back to the GUI terminal

Using Virtual Terminals On Install

- Use CNTRL-ALT-F1 for install messages
- Use CNTRL-ALT-F2 to enter commands
- Use CNTRL-ALT-F4 for error message detail
- Use CNTRL-ALT-F7 to get back to the GUI

Know Your Local Settings

- The machine name
- If you are using DHCP or static addresses
 - The IP address if you are using static addresses
- The gateway or router port IP
- The DNS server IP

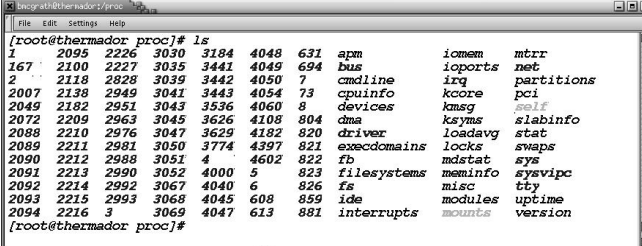
Get Hardware Info with Red Hat Tools

- Boot from CD-ROM
- Switch to virtual terminal 2 CTRL-ALT-F2
- Use /proc
 - for cpu type and speed
 - for memory information
- Use lspci
 - for PCI cards (graphics/network) installed

/proc

Configuration information for Linux can be found and modified in the /proc directory

Although it seems like a directory with config files, you are really reading the running configuration (static configuration files are found in /etc)



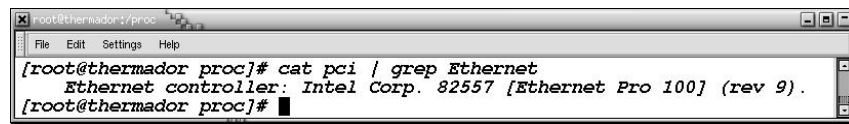
```
[root@thermador: /proc]# ls
1          2095 2226 3030 3184 4048 631  apm          iomem      mtrr
167       2100 2227 3035 3441 4049 694  bus          ioports   net
2         2118 2828 3039 3442 4050 7    cmdline    irq        partitions
2007      2138 2949 3041 3443 4054 73   cpuinfo    kcore     pci
2049      2182 2951 3043 3536 4060 8    devices    kmsg      self
2072      2209 2963 3045 3626 4108 804   dma        ksyms     slabinfo
2088      2210 2976 3047 3629 4182 820   driver     loadavg   stat
2089      2211 2981 3050 3774 4397 821   execdomains locks     swaps
2090      2212 2988 3051 4    4602 822   fb         mdstat    sys
2091      2213 2990 3052 4000 5    823   filesystems meminfo   sysvipc
2092      2214 2992 3067 4040 6    826   fs         misc      tty
2093      2215 2993 3068 4045 608  859   ide        modules   uptime
2094      2216 3    3069 4047 613  881   interrupts mounts     version
[root@thermador: /proc]#
```

accessing proc

You can access the /proc information by using the standard commands you would use to read a file

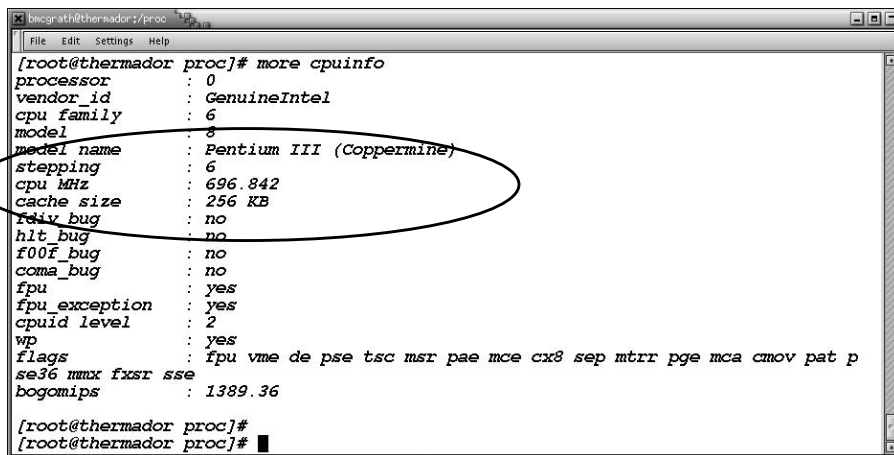
more - paged output

cat - raw output



```
root@thermador:~# cat pci | grep Ethernet
Ethernet controller: Intel Corp. 82557 [Ethernet Pro 100] (rev 9).
root@thermador:~#
```

CPU



```
root@thermador:~# more cpuinfo
processor          : 0
vendor_id        : GenuineIntel
cpu family       : 6
model            : 8
model name       : Pentium III (Coppermine)
stepping         : 6
cpu MHz          : 696.842
cache size       : 256 KB
fdiv_bug         : no
hit_bug         : no
f00f_bug        : no
coma_bug        : no
fpu              : yes
fpu_exception    : yes
cpuid level      : 2
wp               : yes
flags            : fpu vme de pse tsc msr pae mce cx8 sep mtrr pge mca cmov pat p
se36 mmx fxsr sse
bogomips         : 1389.36
root@thermador:~#
```

Intel 700MHz Pentium 3

Memory

```
incprati@thermador:/proc
File Edit Settings Help
total: used: free: shared: buffers: cached:
Mem: 19578880 185589760 10199040 0 13070336 88092672
Swap: 539336704 23834624 515502080
MemTotal: 191200 kB
MemFree: 9960 kB
MemShared: 0 kB
Buffers: 12764 kB
Cached: 82720 kB
SwapCached: 3308 kB
Active: 96576 kB
Inact_dirty: 55920 kB
Inact_clean: 2892 kB
Inact_target: 31076 kB
HighTotal: 0 kB
HighFree: 0 kB
LowTotal: 191200 kB
LowFree: 9960 kB
SwapTotal: 526696 kB
SwapFree: 503420 kB
Committed_AS: 148980 kB
[root@thermador: proc]#
```

MemTotal is installed physical memory (192MB here)

SwapTotal is the swap size (512 MB here)

IDE

IDE devices are named:

PRIMARY

Master hda

Slave hdb

SECONDARY

Master hdc

Slave hdd

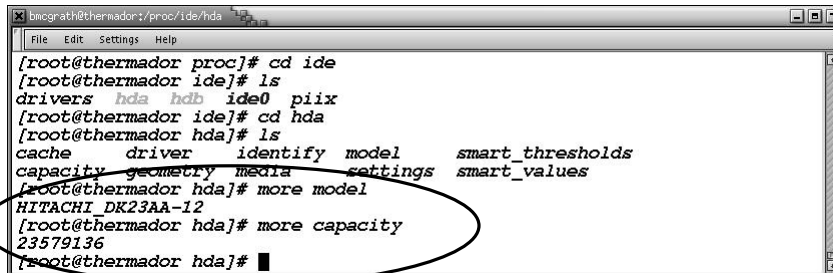
Primary IDE Disk Model

ide subdirectory

hda = ide primary master device

hdb = ide primary slave device

No hdc or hdd subdirectory means no devices on IDE secondary



```
bmccgrath@thermador2:/proc/ide/hda
File Edit Settings Help
[thermador proc]# cd ide
[thermador ide]# ls
drivers hda hdb ide0 piix
[thermador ide]# cd hda
[thermador hda]# ls
cache driver identify model smart_thresholds
capacity geometry media settings smart_values
[thermador hda]# more model
HITACHI_DK23AA-12
[thermador hda]# more capacity
23579136
[thermador hda]#
```

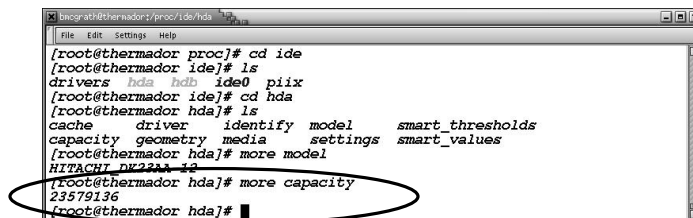
model = Hitachi DK23AA-12
capacity = 23579136 = ????

Disk Capacity

Disk capacity is in SECTORS

This is not being perverse just to be perverse.

The utility is displaying information FROM THE DRIVE ITSELF and IDE does capacity by sectors



```
bmccgrath@thermador2:/proc/ide/hda
File Edit Settings Help
[thermador proc]# cd ide
[thermador ide]# ls
drivers hda hdb ide0 piix
[thermador ide]# cd hda
[thermador hda]# ls
cache driver identify model smart_thresholds
capacity geometry media settings smart_values
[thermador hda]# more model
HITACHI_DK23AA-12
[thermador hda]# more capacity
23579136
[thermador hda]#
```

capacity = 23579136 * 512 bytes/sector = 12,072,517,632
About 12 GigaByte

lspci

- Scans PCI bus and displays configuration information
 - lspci -v and lspci -vv reveal progressively more information
- Will reveal board chipset and ID any PCI bus cards in the system
 - network cards
 - graphics cards

lspci

Motherboard chipset

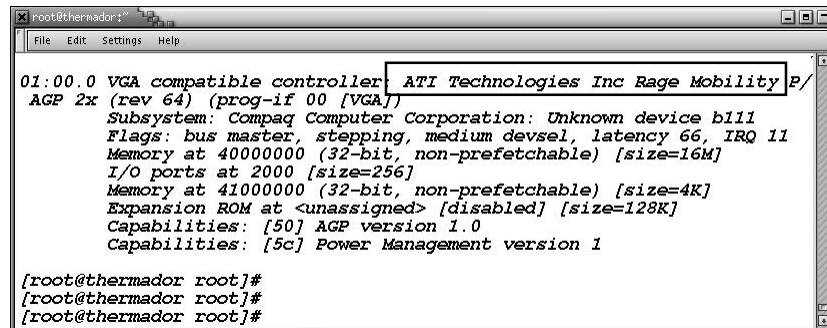
```
root@thermador:~# lspci -v | more
00:00.0 Host bridge: Intel Corp. 440BX/ZX/DX - 82443BX/ZX/DX Host bridge
 (rev 03)
  Subsystem: Compaq Computer Corporation: Unknown device b110
  Flags: bus master, medium devsel, latency 64
  Memory at 50000000 (32-bit, prefetchable) [size=64M]
  Capabilities: [a0] AGP version 1.0

00:01.0 PCI bridge: Intel Corp. 440BX/ZX/DX - 82443BX/ZX/DX AGP bridge
 (rev 03) (prog-if 00 [normal decode])
  Flags: 66Mhz, medium devsel
  Bus: primary=00, secondary=01, subordinate=01, sec-latency=0
  I/O behind bridge: 00002000-00002fff
  Memory behind bridge: 40000000-410fffff

00:04.0 CardBus bridge: Texas Instruments PCI1450 (rev 03)
  Subsystem: Compaq Computer Corporation: Unknown device b113
  Flags: bus master, medium devsel, latency 168, IRQ 11
--More--
```

PCMCIA chipset

Graphics Card

A terminal window titled "root@thermador:" with a menu bar (File, Edit, Settings, Help). The terminal displays the output of the command "lspci -vv" for the graphics card at address 01:00.0. The output is as follows:

```
01:00.0 VGA compatible controller: ATI Technologies Inc Rage Mobility P/
AGP 2x (rev 64) (prog-if 00 [VGA])
Subsystem: Compaq Computer Corporation: Unknown device b111
Flags: bus master, stepping, medium devsel, latency 66, IRQ 11
Memory at 40000000 (32-bit, non-prefetchable) [size=16M]
I/O ports at 2000 [size=256]
Memory at 41000000 (32-bit, non-prefetchable) [size=4K]
Expansion ROM at <unassigned> [disabled] [size=128K]
Capabilities: [50] AGP version 1.0
Capabilities: [5c] Power Management version 1

[root@thermador root]#
[root@thermador root]#
[root@thermador root]#
```