

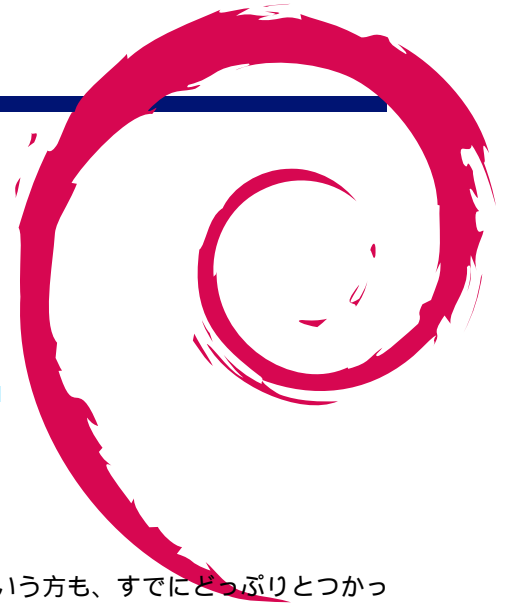


東京エリア Debian 勉強会

Debian 勉強会幹事 上川 純一
2007 年 10 月 6 日

1 Introduction

上川 純一



今月の Debian 勉強会へようこそ。これから Debian のあやしい世界に入るといふ方も、すでにどっぷりとつかっているといふ方も、月に一回 Debian について語りませんか？

目的として次の二つを考えています。

- メールではよみとれない、もしくはよみとってられないような情報について情報共有する場をつくる
- Debian を利用する際の情報をまとめて、ある程度の塊として整理するための場をつくる

Debian の勉強会といふことで究極的には参加者全員が Debian Package をがりがりとするスーパーハッカーになった姿を妄想しています。

Debian をこれからどうするといふ能動的な展開への土台としての空間を提供し、情報の共有をしたい、といふのが目的です。

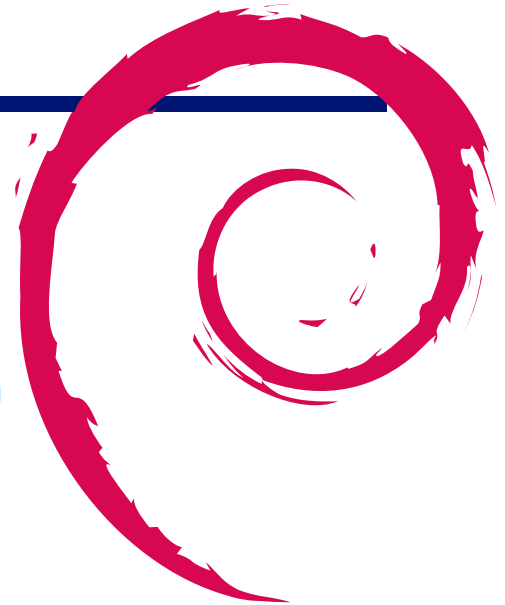
Debian 勉強会レポート

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2 最近の Debian 関連のミーティング報告

岩松 信洋



2.1 東京エリア Debian 勉強会 32 回目報告

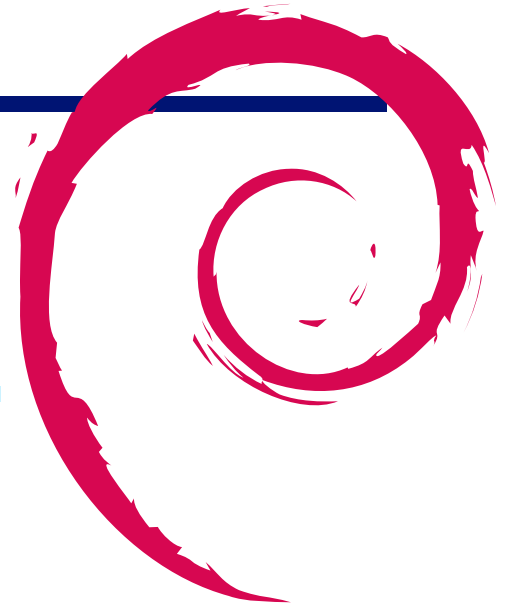
まず小室さんに exim の簡単な情報、設定方法、exim-jp の活動について話していただきました。exim は他の MTA と比べると、設定が容易にでき、他のアプリケーション (ClamAV など) の連携も簡単で、1 行で使用可能になるところが魅力的に感じました。exim のマニュアルは 3 万行あるとのこと。3 万行の英語から 特定の情報を取り出すのは大変なので、ユーザーのために exim-jp で翻訳しているとのこと。また、簡単なチュートリアルや、他の MTA との比較があれば導入しやすくなるので、そちらも平行展開していくのがいいのではないかと、という意見がありました。

その次にあまり知られていない apt-xxx について岩松が話しました。10 個ほどの apt-xxx について簡単に説明をしました。どれもあまり使われていない/存在すらしないということがわかりました。その中で、apt-proxy / apt-cacher 、apt-transport-https について、興味がある方が多かったです。今後の勉強会で取り上げられることがあるかもしれません。期待です。

最後に「あなたが Debian で使っている MTA のこだわりの設定」もしくは「Debian で利用しているこんな便利な / 楽しいメッセージツールあるいは日頃使っていて気にかかるメッセージ関連ソフトのこの部分」として事前課題を提出していただき、ディスカッションを行いました。

Postfix を使っている方が多く、日本語での情報が多いことがキーになっているようです。しかし、設定ファイルを記述するのがけっこうめんどくさいという意見がありました。小室さんの発表してくれた exim では容易に設定できるようなので exim 魅力を感じている人が増えたような気がします。

帰り際に青木さんが im-switch の実装のための インпутメソッドの 調査をしました。Debian では多くの入力用ソフトウェアが存在するのですが、インпутメソッド 切り替え用の フロントエンドである im-switch の整備を行うためです。後藤さんが出してくれた現在のインпутメソッド環境は複雑になっているので、IM-BUS の実装に期待です。



3 HP ML350G5 Debian etch 動作確認

上川 純一

3.1 サーバ

HP ML350G5 は Intel Xeon CPU を搭載している Debian 4.0 (etch) が稼働することがハードウェアベンダ、および Debian プロジェクトの有志によって確認されているサーバ^{*1} ^{*2} です。今回利用したサーバには 300GB の SAS ディスクが 6 本搭載されていました。

3.2 インストール前の準備

サーバの起動時に「F8」を押し、ハードウェア RAID 機能の設定を行います。今回は一つの RAID5 のボリューム (約 1.5TB) として OS に見せる設定にしました。

3.3 インストール

Debian installer でインストールします。今回は Debian GNU/Linux 4.0r1 DVD の 1 枚目を利用しました。ML350G5 は em64t 対応の Xeon のため、i386 でも amd64 でも動作します。今回は amd64 をインストールしました。

3.4 デバイスの認識

各種デバイスは簡単に稼働します。グラフィックカードは ati ドライバで動作します。debconf で自動設定した値で適切な設定ファイルが出力されます。

```
# dpkg-reconfigure xserver-xorg
```

3.5 USB ストレージデバイスの認識

手元にあった「Green house GH-UFD2GR」の USB メモリで動作確認したところ、認識しました。

dmesg は次のようになりました：

^{*1} HP の ProLiant の Debian GNU/Linux 対応ページ: <http://www.hp.com/go/debian>

^{*2} Debian の ProLiant on Debian ページ: <http://wiki.debian.org/HP/ProLiant>

```
usb 6-6: new high speed USB device using ehci_hcd and address 4
usb 6-6: configuration #1 chosen from 1 choice
Initializing USB Mass Storage driver...
scsi0 : SCSI emulation for USB Mass Storage devices
usbcore: registered new driver usb-storage
USB Mass Storage support registered.
usb-storage: device found at 4
usb-storage: waiting for device to settle before scanning
 Vendor: USBDisk   Model: FlashDisk   Rev: 1.00
  Type:   Direct-Access           ANSI SCSI revision: 02
usb-storage: device scan complete
SCSI device sda: 4005000 512-byte hdwr sectors (2051 MB)
sda: Write Protect is off
sda: Mode Sense: 0b 00 00 08
sda: assuming drive cache: write through
SCSI device sda: 4005000 512-byte hdwr sectors (2051 MB)
sda: Write Protect is off
sda: Mode Sense: 0b 00 00 08
sda: assuming drive cache: write through
sda: sda1
sd 0:0:0:0: Attached scsi removable disk sda
FAT: utf8 is not a recommended IO charset for FAT filesystems, filesystem will be case sensitive!
```

df で確認しても認識されているのがわかります :

```
# df -h /media/usbdisk/
Filesystem      Size  Used Avail Use% Mounted on
/dev/sda1       2.0G  76M  1.9G   4% /media/usbdisk
# df -T /media/usbdisk/
Filesystem      Type  1K-blocks      Used Available Use% Mounted on
/dev/sda1       vfat  2001888       76864  1925024   4% /media/usbdisk
```

3.6 USB webcam の認識

PlayStation2 用 USB カメラ EyeToy を動作させてみました。ov51x-jpeg のデバイスドライバを認識させるためのドライバは残念ながら Debian 4.0 には含まれていないので、最新のドライバをバックポートしてみました。



図 1 EyeToy カメラ

まず、インストールされたカーネルでコンパイルするために必要なパッケージをインストールします。

```
apt-get install linux-headers-2.6.18-5-amd64 linux-kbuild-2.6.18 \
linux-source-2.6.18
```

ov51x-jpeg のソースを取得して make コマンドでビルドできます。

```
debian:/home/hoge/ov51x-jpeg# make
make -C /lib/modules/2.6.18-5-amd64/build M=/home/hoge/ov51x-jpeg modules
make[1]: Entering directory '/usr/src/linux-headers-2.6.18-5-amd64'
CC [M] /home/hoge/ov51x-jpeg/ov51x-jpeg-core.o
CC [M] /home/hoge/ov51x-jpeg/ov511-decomp.o
CC [M] /home/hoge/ov51x-jpeg/ov518-decomp.o
CC [M] /home/hoge/ov51x-jpeg/ov519-decomp.o
LD [M] /home/hoge/ov51x-jpeg/ov51x-jpeg.o
Building modules, stage 2.
MODPOST
CC /home/hoge/ov51x-jpeg/ov51x-jpeg.mod.o
LD [M] /home/hoge/ov51x-jpeg/ov51x-jpeg.ko
make[1]: Leaving directory '/usr/src/linux-headers-2.6.18-5-amd64'
```

生成されたモジュールをあわせて insmod すれば ekiga で画面が見れるようになります。

```
insmod v411-compat.ko
insmod v412-common.ko
insmod videodev.ko
insmod ov51x-jpeg.ko
```

3.7 謝辞

OSC Tokyo/Fall 2007 Debian ブースにて本作業を行いました。サーバは日本 HP からお借りしました。



図 2 検証時のブースの様子

3.8 付録

3.8.1 dmesg

起動時の dmesg です。

```

Bootdata ok (command line is root=/dev/cciss/c0d0p1 ro )
Linux version 2.6.18-5-amd64 (Debian 2.6.18.dfsg.1-13) (dannf@debian.org) (gcc version 4.1.2 20061115 (prerelease) (Debian 4.1.1-21)) #1 SMP
BIOS-provided physical RAM map:
BIOS-e820: 0000000000000000 - 000000000009f400 (usable)
BIOS-e820: 000000000009f400 - 00000000000a0000 (reserved)
BIOS-e820: 00000000000af000 - 0000000000100000 (reserved)
BIOS-e820: 0000000000100000 - 00000000003fe58000 (usable)
BIOS-e820: 00000000003fe58000 - 00000000003fe60000 (ACPI data)
BIOS-e820: 00000000003fe60000 - 000000000040000000 (reserved)
BIOS-e820: 0000000000fec00000 - 0000000000fed00000 (reserved)
BIOS-e820: 0000000000fee00000 - 0000000000fee10000 (reserved)
BIOS-e820: 0000000000ffc00000 - 0000000100000000 (reserved)
DMI 2.3 present.
ACPI: RSDP (v002 HP                                     ) @ 0x000000000000f400
ACPI: XSDT (v001 HP      D21      0x00000002  0x0000162e) @ 0x00000000003fe58300
ACPI: FADT (v003 HP      D21      0x00000002  0x0000162e) @ 0x00000000003fe58380
ACPI: SPCR (v001 HP      SPCRBSU 0x00000001  0x0000162e) @ 0x00000000003fe58100
ACPI: MCFG (v001 HP      ProLiant 0x00000001  0x00000000) @ 0x00000000003fe58180
ACPI: HPET (v001 HP      D21      0x00000002  0x0000162e) @ 0x00000000003fe581c0
ACPI: SPMI (v005 HP      ProLiant 0x00000001  0x0000162e) @ 0x00000000003fe58200
ACPI: MADT (v001 HP      00000083  0x00000002  0x00000000) @ 0x00000000003fe58240
ACPI: DSDT (v001 HP      DSDT 0x00000001  INTL 0x20030228) @ 0x0000000000000000
No NUMA configuration found
Faking a node at 0000000000000000-00000000003fe58000
Bootmem setup node 0 0000000000000000-00000000003fe58000
On node 0 totalpages: 257159
  DMA zone: 3057 pages, LIFO batch:0
  DMA32 zone: 254102 pages, LIFO batch:31
ACPI: PM-Timer IO Port: 0x908
ACPI: Local APIC address 0xfe00000
ACPI: LAPIC (acpi_id[0x00] lapic_id[0x00] enabled)
Processor #0 6:15 APIC version 20
ACPI: LAPIC (acpi_id[0x04] lapic_id[0x04] disabled)
ACPI: LAPIC (acpi_id[0x02] lapic_id[0x02] disabled)
ACPI: LAPIC (acpi_id[0x06] lapic_id[0x06] disabled)
ACPI: LAPIC (acpi_id[0x01] lapic_id[0x01] enabled)
Processor #1 6:15 APIC version 20
ACPI: LAPIC (acpi_id[0x05] lapic_id[0x05] disabled)
ACPI: LAPIC (acpi_id[0x03] lapic_id[0x03] disabled)
ACPI: LAPIC (acpi_id[0x07] lapic_id[0x07] disabled)
ACPI: LAPIC_NMI (acpi_id[0xff] dfl dfl lint[0x1])
ACPI: IOAPIC (id[0x08] address[0xfec00000] gsi_base[0])
IOAPIC[0]: apic_id 8, version 32, address 0xfec00000, GSI 0-23
ACPI: IOAPIC (id[0x09] address[0xfec80000] gsi_base[24])
IOAPIC[1]: apic_id 9, version 32, address 0xfec80000, GSI 24-47
ACPI: INT_SRC_OVR (bus 0 bus_irq 0 global_irq 2 high edge)
ACPI: INT_SRC_OVR (bus 0 bus_irq 9 global_irq 9 high level)
ACPI: IRQ0 used by override.
ACPI: IRQ2 used by override.
ACPI: IRQ9 used by override.
Setting APIC routing to physical flat
ACPI: HPET id: 0x8086a201 base: 0xfed00000
Using ACPI (MADT) for SMP configuration information
Allocating PCI resources starting at 50000000 (gap: 40000000:bec00000)
SMP: Allowing 8 CPUs, 6 hotplug CPUs
Built 1 zonelists. Total pages: 257159
Kernel command line: root=/dev/cciss/c0d0p1 ro
Initializing CPU#0
PID hash table entries: 4096 (order: 12, 32768 bytes)
time.c: Using 14.318180 MHz WALL HPET GTOD HPET/TSC timer.
time.c: Detected 2666.763 MHz processor.
Console: colour VGA+ 80x25
Dentry cache hash table entries: 131072 (order: 8, 1048576 bytes)
Inode-cache hash table entries: 65536 (order: 7, 524288 bytes)
Checking aperture...
Memory: 1021852k/1046880k available (1927k kernel code, 24640k reserved, 868k data, 176k init)
Calibrating delay using timer specific routine.. 5338.29 BogoMIPS (lpj=10676592)
Security Framework v1.0.0 initialized
SELinux:  Disabled at boot.
Capability LSM initialized
Mount-cache hash table entries: 256
CPU: L1 I cache: 32K, L1 D cache: 32K
CPU: L2 cache: 4096K
using mwait in idle threads.
CPU: Physical Processor ID: 0
CPU: Processor Core ID: 0
CPU0: Thermal monitoring enabled (TM2)
SMP alternatives: switching to UP code
ACPI: Core revision 20060707
Using local APIC timer interrupts.

```



```

result 20834085
Detected 20.834 MHz APIC timer.
SMP alternatives: switching to SMP code
Booting processor 1/2 APIC 0x1
Initializing CPU#1
Calibrating delay using timer specific routine.. 5333.44 BogoMIPS (lpj=10666883)
CPU: L1 I cache: 32K, L1 D cache: 32K
CPU: L2 cache: 4096K
CPU: Physical Processor ID: 0
CPU: Processor Core ID: 1
CPU1: Thermal monitoring enabled (TM2)
Intel(R) Xeon(R) CPU          5150 @ 2.66GHz stepping 06
Brought up 2 CPUs
testing NMI watchdog ... OK.
migration_cost=24
checking if image is initramfs... it is
Freeing initrd memory: 4896k freed
NET: Registered protocol family 16
ACPI: bus type pci registered
PCI: BIOS Bug: MCFG area at e0000000 is not E820-reserved
PCI: Not using MMCONFIG.
PCI: Using configuration type 1
ACPI: Interpreter enabled
ACPI: Using IOAPIC for interrupt routing
ACPI: PCI Root Bridge [PCI0] (0000:00)
PCI: Probing PCI hardware (bus 00)
ACPI: Assume root bridge [_SB_.PCI0] bus is 0
PCI: Ignoring BAR0-3 of IDE controller 0000:00:1f.1
Boot video device is 0000:01:03.0
PCI: Transparent bridge - 0000:00:1e.0
ACPI: PCI Interrupt Routing Table [_SB_.PCI0._PRT]
ACPI: PCI Interrupt Routing Table [_SB_.PCI0.IP2P._PRT]
ACPI: PCI Interrupt Routing Table [_SB_.PCI0.IPTA._PRT]
ACPI: PCI Interrupt Routing Table [_SB_.PCI0.PT02._PRT]
ACPI: PCI Interrupt Routing Table [_SB_.PCI0.PT02.PEX2._PRT]
ACPI: PCI Interrupt Routing Table [_SB_.PCI0.PT02.IPE4._PRT]
ACPI: PCI Interrupt Routing Table [_SB_.PCI0.PT02.IPE4.IPE1._PRT]
ACPI: PCI Interrupt Routing Table [_SB_.PCI0.PT02.IPE4.IPE2._PRT]
ACPI: PCI Interrupt Routing Table [_SB_.PCI0.PT04._PRT]
ACPI: PCI Interrupt Routing Table [_SB_.PCI0.PT05.EEPB._PRT]
ACPI: PCI Interrupt Routing Table [_SB_.PCI0.PT05.EEPB.EPPB._PRT]
ACPI: PCI Interrupt Link [LNKA] (IRqs *5 7 10 11)
ACPI: PCI Interrupt Link [LNKB] (IRqs 5 *7 10 11)
ACPI: PCI Interrupt Link [LNKC] (IRqs 5 7 *10 11)
ACPI: PCI Interrupt Link [LNKD] (IRqs 5 7 *10 11)
ACPI: PCI Interrupt Link [LNKE] (IRqs 5 7 10 11) *0, disabled.
ACPI: PCI Interrupt Link [LNKF] (IRqs *5 7 10 11)
ACPI: PCI Interrupt Link [LNKG] (IRqs 5 7 *10 11)
ACPI: PCI Interrupt Link [LNKH] (IRqs 5 *7 10 11)
Linux Plug and Play Support v0.97 (c) Adam Belay
pnp: PnP ACPI init
pnp: ACPI device : hid PNP0A03
pnp: ACPI device : hid PNP0C02
pnp: ACPI device : hid IPI0001
pnp: ACPI device : hid PNP0103
pnp: ACPI device : hid PNP0200
pnp: ACPI device : hid PNP0800
pnp: ACPI device : hid PNP0303
pnp: ACPI device : hid PNP0F13
pnp: ACPI device : hid PNP0A06
pnp: ACPI device : hid PNP0501
pnp: ACPI device : hid PNP0700
pnp: PnP ACPI: found 11 devices
usbcore: registered new driver usbfs
usbcore: registered new driver hub
PCI: Using ACPI for IRQ routing
PCI: If a device doesn't work, try "pci=routeirq". If it helps, post a report
hpet0: at MMIO 0xfed00000 (virtual 0xffffffffff5fe000), IRQs 2, 8, 0
hpet0: 3 64-bit timers, 14318180 Hz
PCI-GART: No AMD northbridge found.
pnp: the driver 'system' has been registered
pnp: match found with the PnP device '00:01' and the driver 'system'
pnp: 00:01: ioport range 0x408-0x40f has been reserved
pnp: 00:01: ioport range 0x4d0-0x4d1 has been reserved
pnp: 00:01: ioport range 0x700-0x71f has been reserved
PCI: Bridge: 0000:05:00.0
IO window: disabled.
MEM window: disabled.
PREFETCH window: disabled.
PCI: Bridge: 0000:05:01.0
IO window: disabled.
MEM window: disabled.
PREFETCH window: disabled.
PCI: Bridge: 0000:04:00.0
IO window: disabled.
MEM window: disabled.
PREFETCH window: disabled.
PCI: Bridge: 0000:04:00.3
IO window: disabled.
MEM window: disabled.
PREFETCH window: disabled.
PCI: Bridge: 0000:00:02.0
IO window: disabled.
MEM window: fde00000-fdefffff
PREFETCH window: disabled.

```

```

PCI: Bridge: 0000:00:03.0
  IO window: disabled.
  MEM window: disabled.
  PREFETCH window: disabled.
PCI: Bridge: 0000:00:04.0
  IO window: disabled.
  MEM window: disabled.
  PREFETCH window: disabled.
PCI: Bridge: 0000:13:04.0
  IO window: disabled.
  MEM window: disabled.
  PREFETCH window: disabled.
PCI: Bridge: 0000:12:00.0
  IO window: 4000-4fff
  MEM window: fdf00000-fdffffff
  PREFETCH window: 50000000-500fffff
PCI: Bridge: 0000:00:05.0
  IO window: 4000-4fff
  MEM window: fdf00000-fdffffff
  PREFETCH window: 50000000-500fffff
PCI: Bridge: 0000:02:00.0
  IO window: disabled.
  MEM window: fa000000-fbffffff
  PREFETCH window: 50100000-501fffff
PCI: Bridge: 0000:00:1c.0
  IO window: disabled.
  MEM window: fa000000-fbffffff
  PREFETCH window: 50100000-501fffff
PCI: Bridge: 0000:00:1e.0
  IO window: 2000-3fff
  MEM window: f9e00000-f9ffffff
  PREFETCH window: f0000000-f7ffffff
PCI: Setting latency timer of device 0000:00:02.0 to 64
PCI: Setting latency timer of device 0000:04:00.0 to 64
GSI 16 sharing vector 0xA9 and IRQ 16
ACPI: PCI Interrupt 0000:05:00.0[A] -> GSI 16 (level, low) -> IRQ 169
PCI: Setting latency timer of device 0000:05:00.0 to 64
GSI 17 sharing vector 0xB1 and IRQ 17
ACPI: PCI Interrupt 0000:05:01.0[A] -> GSI 17 (level, low) -> IRQ 177
PCI: Setting latency timer of device 0000:05:01.0 to 64
PCI: Setting latency timer of device 0000:04:00.3 to 64
PCI: Setting latency timer of device 0000:00:03.0 to 64
PCI: Setting latency timer of device 0000:00:04.0 to 64
PCI: Setting latency timer of device 0000:00:05.0 to 64
PCI: Setting latency timer of device 0000:12:00.0 to 64
ACPI: PCI Interrupt 0000:00:1c.0[A] -> GSI 16 (level, low) -> IRQ 169
PCI: Setting latency timer of device 0000:00:1c.0 to 64
PCI: Setting latency timer of device 0000:02:00.0 to 64
PCI: Setting latency timer of device 0000:00:1e.0 to 64
NET: Registered protocol family 2
IP route cache hash table entries: 32768 (order: 6, 262144 bytes)
TCP established hash table entries: 131072 (order: 9, 2097152 bytes)
TCP bind hash table entries: 65536 (order: 8, 1048576 bytes)
TCP: Hash tables configured (established 131072 bind 65536)
TCP reno registered
audit: initializing netlink socket (disabled)
audit(1186902200.772:1): initialized
VFS: Disk quotas dquot_6.5.1
Dquot-cache hash table entries: 512 (order 0, 4096 bytes)
Initializing Cryptographic API
io scheduler noop registered
io scheduler anticipatory registered
io scheduler deadline registered
io scheduler cfq registered (default)
PCI: Setting latency timer of device 0000:00:02.0 to 64
pcie_portdrv_probe->Dev[25f7:8086] has invalid IRQ. Check vendor BIOS
assign_interrupt_mode Found MSI capability
Allocate Port Service[0000:00:02.0:pcie00]
PCI: Setting latency timer of device 0000:00:03.0 to 64
pcie_portdrv_probe->Dev[25e3:8086] has invalid IRQ. Check vendor BIOS
assign_interrupt_mode Found MSI capability
Allocate Port Service[0000:00:03.0:pcie00]
PCI: Setting latency timer of device 0000:00:04.0 to 64
pcie_portdrv_probe->Dev[25e4:8086] has invalid IRQ. Check vendor BIOS
assign_interrupt_mode Found MSI capability
Allocate Port Service[0000:00:04.0:pcie00]
PCI: Setting latency timer of device 0000:00:05.0 to 64
pcie_portdrv_probe->Dev[25e5:8086] has invalid IRQ. Check vendor BIOS
assign_interrupt_mode Found MSI capability
Allocate Port Service[0000:00:05.0:pcie00]
PCI: Setting latency timer of device 0000:00:1c.0 to 64
assign_interrupt_mode Found MSI capability
Allocate Port Service[0000:00:1c.0:pcie00]
PCI: Setting latency timer of device 0000:04:00.0 to 64
pcie_portdrv_probe->Dev[3500:8086] has invalid IRQ. Check vendor BIOS
Allocate Port Service[0000:04:00.0:pcie10]
PCI: Setting latency timer of device 0000:05:00.0 to 64
assign_interrupt_mode Found MSI capability
Allocate Port Service[0000:05:00.0:pcie20]
PCI: Setting latency timer of device 0000:05:01.0 to 64
assign_interrupt_mode Found MSI capability
Allocate Port Service[0000:05:01.0:pcie20]
Real Time Clock Driver v1.12ac
hpet_resources: 0xfed00000 is busy

```

```

Linux agpgart interface v0.101 (c) Dave Jones
Serial: 8250/16550 driver $Revision: 1.90 $ 4 ports, IRQ sharing enabled
serial8250: ttyS0 at I/O 0x3f8 (irq = 4) is a 16550A
serial8250: ttyS1 at I/O 0x2f8 (irq = 3) is a 16550A
pnp: the driver 'serial' has been registered
pnp: match found with the PnP device '00:09' and the driver 'serial'
00:09: ttyS0 at I/O 0x3f8 (irq = 4) is a 16550A
RAMDISK driver initialized: 16 RAM disks of 65536K size 1024 blocksize
pnp: the driver 'i8042 kbd' has been registered
pnp: match found with the PnP device '00:06' and the driver 'i8042 kbd'
pnp: the driver 'i8042 aux' has been registered
pnp: match found with the PnP device '00:07' and the driver 'i8042 aux'
PNP: PS/2 Controller [PNP0303:KBD,PNP0f0e:PS2M] at 0x60,0x64 irq 1,12
serio: i8042 AUX port at 0x60,0x64 irq 12
serio: i8042 KBD port at 0x60,0x64 irq 1
mice: PS/2 mouse device common for all mice
TCP bic registered
NET: Registered protocol family 1
NET: Registered protocol family 17
NET: Registered protocol family 8
NET: Registered protocol family 20
ACPI: (supports S0 S4 S5)
Freeing unused kernel memory: 176k freed
ACPI Exception (acpi_processor-0681): AE_NOT_FOUND, Processor Device is not present [20060707]
ACPI: Getting cpuindex for acpiid 0x2
ACPI Exception (acpi_processor-0681): AE_NOT_FOUND, Processor Device is not present [20060707]
ACPI: Getting cpuindex for acpiid 0x3
ACPI Exception (acpi_processor-0681): AE_NOT_FOUND, Processor Device is not present [20060707]
ACPI: Getting cpuindex for acpiid 0x4
ACPI Exception (acpi_processor-0681): AE_NOT_FOUND, Processor Device is not present [20060707]
ACPI: Getting cpuindex for acpiid 0x5
ACPI Exception (acpi_processor-0681): AE_NOT_FOUND, Processor Device is not present [20060707]
ACPI: Getting cpuindex for acpiid 0x6
ACPI Exception (acpi_processor-0681): AE_NOT_FOUND, Processor Device is not present [20060707]
ACPI: Getting cpuindex for acpiid 0x7
ACPI: Thermal Zone [THM0] (8 C)
input: AT Translated Set 2 keyboard as /class/input/input0
USB Universal Host Controller Interface driver v3.0
ACPI: PCI Interrupt 0000:00:1d.0[A] -> GSI 16 (level, low) -> IRQ 169
PCI: Setting latency timer of device 0000:00:1d.0 to 64
uhci_hcd 0000:00:1d.0: UHCI Host Controller
uhci_hcd 0000:00:1d.0: new USB bus registered, assigned bus number 1
uhci_hcd 0000:00:1d.0: irq 169, io base 0x00001000
usb usb1: configuration #1 chosen from 1 choice
hub 1-0:1.0: USB hub found
hub 1-0:1.0: 2 ports detected
SCSI subsystem initialized
HP CISS Driver (v 3.6.10)
Uniform Multi-Platform E-IDE driver Revision: 7.00alpha2
ide: Assuming 33MHz system bus speed for PIO modes; override with idebus=xx
ACPI: PCI Interrupt 0000:00:1d.1[B] -> GSI 17 (level, low) -> IRQ 177
PCI: Setting latency timer of device 0000:00:1d.1 to 64
uhci_hcd 0000:00:1d.1: UHCI Host Controller
uhci_hcd 0000:00:1d.1: new USB bus registered, assigned bus number 2
uhci_hcd 0000:00:1d.1: irq 177, io base 0x00001020
usb usb2: configuration #1 chosen from 1 choice
hub 2-0:1.0: USB hub found
hub 2-0:1.0: 2 ports detected
GSI 18 sharing vector 0x3A and IRQ 18
ACPI: PCI Interrupt 0000:00:1d.2[C] -> GSI 18 (level, low) -> IRQ 58
PCI: Setting latency timer of device 0000:00:1d.2 to 64
uhci_hcd 0000:00:1d.2: UHCI Host Controller
uhci_hcd 0000:00:1d.2: new USB bus registered, assigned bus number 3
uhci_hcd 0000:00:1d.2: irq 58, io base 0x00001040
usb usb3: configuration #1 chosen from 1 choice
hub 3-0:1.0: USB hub found
hub 3-0:1.0: 2 ports detected
GSI 19 sharing vector 0x42 and IRQ 19
ACPI: PCI Interrupt 0000:00:1d.3[D] -> GSI 19 (level, low) -> IRQ 66
PCI: Setting latency timer of device 0000:00:1d.3 to 64
uhci_hcd 0000:00:1d.3: UHCI Host Controller
uhci_hcd 0000:00:1d.3: new USB bus registered, assigned bus number 4
uhci_hcd 0000:00:1d.3: irq 66, io base 0x00001060
usb usb4: configuration #1 chosen from 1 choice
hub 4-0:1.0: USB hub found
hub 4-0:1.0: 2 ports detected
Broadcom NetXtreme II Gigabit Ethernet Driver bnx2 v1.4.44 (August 10, 2006)
ACPI: PCI Interrupt 0000:03:00.0[A] -> GSI 16 (level, low) -> IRQ 169
eth0: Broadcom NetXtreme II BCM5708 1000Base-T (B2) PCI-X 64-bit 133MHz found at mem fa000000, IRQ 169, node addr 001b7873259a
GSI 20 sharing vector 0x4A and IRQ 20
ACPI: PCI Interrupt 0000:01:04.4[B] -> GSI 22 (level, low) -> IRQ 74
uhci_hcd 0000:01:04.4: UHCI Host Controller
uhci_hcd 0000:01:04.4: new USB bus registered, assigned bus number 5
uhci_hcd 0000:01:04.4: port count misdetected? forcing to 2 ports
uhci_hcd 0000:01:04.4: irq 74, io base 0x00003800
usb usb5: configuration #1 chosen from 1 choice
hub 5-0:1.0: USB hub found
hub 5-0:1.0: 2 ports detected

```

```

ESB2: IDE controller at PCI slot 0000:00:1f.1
ACPI: Unable to derive IRQ for device 0000:00:1f.1
ACPI: PCI Interrupt 0000:00:1f.1[A]: no GSI - using IRQ 7
ESB2: chipset revision 9
ESB2: not 100% native mode: will probe irqs later
  ide0: BM-DMA at 0x0500-0x0507, BIOS settings: hda:DMA, hdb:pio
  ide1: BM-DMA at 0x0508-0x050f, BIOS settings: hdc:pio, hdd:pio
Probing IDE interface ide0...
usb 5-1: new full speed USB device using uhci_hcd and address 2
usb 5-1: configuration #1 chosen from 1 choice
usb 5-2: new full speed USB device using uhci_hcd and address 3
hda: HL-DT-STDVD+-RW GSA-H21L, ATAPI CD/DVD-ROM drive
usb 5-2: configuration #1 chosen from 1 choice
hub 5-2:1.0: USB hub found
hub 5-2:1.0: 7 ports detected
usbcore: registered new driver hiddev
input: HP Virtual Keyboard as /class/input/input1
input: USB HID v1.01 Keyboard [HP Virtual Keyboard] on usb-0000:01:04.4-1
input: HP Virtual Keyboard as /class/input/input2
input: USB HID v1.01 Mouse [HP Virtual Keyboard] on usb-0000:01:04.4-1
usbcore: registered new driver usbhid
drivers/usb/input/hid-core.c: v2.6:USB HID core driver
ide0 at 0x1f0-0x1f7,0x3f6 on irq 14
Probing IDE interface ide1...
ACPI: PCI Interrupt 0000:00:1d.7[A] -> GSI 16 (level, low) -> IRQ 169
PCI: Setting latency timer of device 0000:00:1d.7 to 64
ehci_hcd 0000:00:1d.7: EHCI Host Controller
ehci_hcd 0000:00:1d.7: new USB bus registered, assigned bus number 6
ehci_hcd 0000:00:1d.7: debug port 1
PCI: cache line size of 32 is not supported by device 0000:00:1d.7
ehci_hcd 0000:00:1d.7: irq 169, io mem 0xf9df0000
ehci_hcd 0000:00:1d.7: USB 2.0 started, EHCI 1.00, driver 10 Dec 2004
usb usb6: configuration #1 chosen from 1 choice
hub 6-0:1.0: USB hub found
hub 6-0:1.0: 8 ports detected
ACPI: PCI Interrupt 0000:13:08.0[A] -> GSI 19 (level, low) -> IRQ 66
cciss0: <0x3238> at PCI 0000:13:08.0 IRQ 82 using DAC
  blocks= 2929359452 block_size= 512
  heads= 255, sectors= 32, cylinders= 358991

  blocks= 2929359452 block_size= 512
  heads= 255, sectors= 32, cylinders= 358991

cciss/c0d0: p1 p2 < p5 >
hda: ATAPI 48X DVD-ROM DVD-R CD-R/RW drive, 2048kB Cache, UDMA(33)
Uniform CD-ROM driver Revision: 3.20
Attempting manual resume
kjournald starting. Commit interval 5 seconds
EXT3-fs: mounted filesystem with ordered data mode.
pci_hotplug: PCI Hot Plug PCI Core version: 0.5
shpchp: Standard Hot Plug PCI Controller Driver version: 0.4
intel_rng: FWH not detected
input: PC Speaker as /class/input/input3
Floppy drive(s): fd0 is 1.44M
floppy0: no floppy controllers found
Adding 3004112k swap on /dev/cciss/c0d0p5. Priority:-1 extents:1 across:3004112k
EXT3 FS on cciss/c0d0p1, internal journal
loop: loaded (max 8 devices)
device-mapper: ioctl: 4.7.0-ioctl (2006-06-24) initialised: dm-devel@redhat.com
ACPI: Power Button (FF) [PWRF]

```

3.8.2 デバイス接続

```
# lspci
00:00.0 Host bridge: Intel Corporation 5000Z Chipset Memory Controller Hub (rev b1)
00:02.0 PCI bridge: Intel Corporation 5000 Series Chipset PCI Express x8 Port 2-3 (rev b1)
00:03.0 PCI bridge: Intel Corporation 5000 Series Chipset PCI Express x4 Port 3 (rev b1)
00:04.0 PCI bridge: Intel Corporation 5000 Series Chipset PCI Express x4 Port 4 (rev b1)
00:05.0 PCI bridge: Intel Corporation 5000 Series Chipset PCI Express x4 Port 5 (rev b1)
00:10.0 Host bridge: Intel Corporation 5000 Series Chipset Error Reporting Registers (rev b1)
00:10.1 Host bridge: Intel Corporation 5000 Series Chipset Error Reporting Registers (rev b1)
00:10.2 Host bridge: Intel Corporation 5000 Series Chipset Error Reporting Registers (rev b1)
00:11.0 Host bridge: Intel Corporation 5000 Series Chipset Reserved Registers (rev b1)
00:13.0 Host bridge: Intel Corporation 5000 Series Chipset Reserved Registers (rev b1)
00:15.0 Host bridge: Intel Corporation 5000 Series Chipset FBD Registers (rev b1)
00:16.0 Host bridge: Intel Corporation 5000 Series Chipset FBD Registers (rev b1)
00:1c.0 PCI bridge: Intel Corporation 631xESB/632xESB/3100 Chipset PCI Express Root Port 1 (rev 09)
00:1d.0 USB Controller: Intel Corporation 631xESB/632xESB/3100 Chipset UHCI USB Controller #1 (rev 09)
00:1d.1 USB Controller: Intel Corporation 631xESB/632xESB/3100 Chipset UHCI USB Controller #2 (rev 09)
00:1d.2 USB Controller: Intel Corporation 631xESB/632xESB/3100 Chipset UHCI USB Controller #3 (rev 09)
00:1d.3 USB Controller: Intel Corporation 631xESB/632xESB/3100 Chipset UHCI USB Controller #4 (rev 09)
00:1d.7 USB Controller: Intel Corporation 631xESB/632xESB/3100 Chipset EHCI USB2 Controller (rev 09)
00:1e.0 PCI bridge: Intel Corporation 82801 PCI Bridge (rev d9)
00:1f.0 ISA bridge: Intel Corporation 631xESB/632xESB/3100 Chipset LPC Interface Controller (rev 09)
00:1f.1 IDE interface: Intel Corporation 631xESB/632xESB IDE Controller (rev 09)
01:03.0 VGA compatible controller: ATI Technologies Inc ES1000 (rev 02)
01:04.0 System peripheral: Compaq Computer Corporation Integrated Lights Out Controller (rev 03)
01:04.2 System peripheral: Compaq Computer Corporation Integrated Lights Out Processor (rev 03)
01:04.4 USB Controller: Hewlett-Packard Company Unknown device 3300
01:04.6 Serial bus controller [0c07]: Hewlett-Packard Company Unknown device 3302
02:00.0 PCI bridge: Broadcom EPB PCI-Express to PCI-X Bridge (rev c3)
03:00.0 Ethernet controller: Broadcom Corporation NetXtreme II BCM5708 Gigabit Ethernet (rev 12)
04:00.0 PCI bridge: Intel Corporation 6311ESB/6321ESB PCI Express Upstream Port (rev 01)
04:00.3 PCI bridge: Intel Corporation 6311ESB/6321ESB PCI Express to PCI-X Bridge (rev 01)
05:00.0 PCI bridge: Intel Corporation 6311ESB/6321ESB PCI Express Downstream Port E1 (rev 01)
05:01.0 PCI bridge: Intel Corporation 6311ESB/6321ESB PCI Express Downstream Port E2 (rev 01)
12:00.0 PCI bridge: Broadcom EPB PCI-Express to PCI-X Bridge (rev b4)
13:04.0 PCI bridge: Broadcom HT1000 PCI/PCI-X bridge (rev b2)
13:08.0 RAID bus controller: Hewlett-Packard Company Unknown device 3238

# lspci -n
00:00.0 0600: 8086:25d0 (rev b1)
00:02.0 0604: 8086:25f7 (rev b1)
00:03.0 0604: 8086:25e3 (rev b1)
00:04.0 0604: 8086:25e4 (rev b1)
00:05.0 0604: 8086:25e5 (rev b1)
00:10.0 0600: 8086:25f0 (rev b1)
00:10.1 0600: 8086:25f0 (rev b1)
00:10.2 0600: 8086:25f0 (rev b1)
00:11.0 0600: 8086:25f1 (rev b1)
00:13.0 0600: 8086:25f3 (rev b1)
00:15.0 0600: 8086:25f5 (rev b1)
00:16.0 0600: 8086:25f6 (rev b1)
00:1c.0 0604: 8086:2690 (rev 09)
00:1d.0 0c03: 8086:2688 (rev 09)
00:1d.1 0c03: 8086:2689 (rev 09)
00:1d.2 0c03: 8086:268a (rev 09)
00:1d.3 0c03: 8086:268b (rev 09)
00:1d.7 0c03: 8086:268c (rev 09)
00:1e.0 0604: 8086:244e (rev d9)
00:1f.0 0601: 8086:2670 (rev 09)
00:1f.1 0101: 8086:269e (rev 09)
01:03.0 0300: 1002:515e (rev 02)
01:04.0 0880: 0e11:b203 (rev 03)
01:04.2 0880: 0e11:b204 (rev 03)
01:04.4 0c03: 103c:3300
01:04.6 0c07: 103c:3302
02:00.0 0604: 1166:0103 (rev c3)
03:00.0 0200: 14e4:164c (rev 12)
04:00.0 0604: 8086:3500 (rev 01)
04:00.3 0604: 8086:350c (rev 01)
05:00.0 0604: 8086:3510 (rev 01)
05:01.0 0604: 8086:3514 (rev 01)
12:00.0 0604: 1166:0103 (rev b4)
13:04.0 0604: 1166:0104 (rev b2)
13:08.0 0104: 103c:3238
```

3.8.3 lshw の出力

```
# lshw
debian
  description: Computer
  product: ProLiant ML350 G5
  vendor: HP
  serial: CN7719011K
  width: 32 bits
  capabilities: smbios-2.3 dmi-2.3
  configuration: boot=hardware-failure-fw uuid=41473538-3641-434E-3737-31393031314B
*-core
  description: Motherboard
  physical id: 0
  *-firmware
    description: BIOS
    vendor: HP
    physical id: 0
    version: D21 (04/06/2007)
    size: 64KB
    capacity: 4032KB
    capabilities: pci pnp upgrade shadowing escd cdboot bootselect int13floppy360 int13floppy1200 int13floppy720 int5sprintscreens int9k
*-cpu:0
  description: CPU
  product: Intel(R) Xeon(R) CPU 5150 @ 2.66GHz
  vendor: Intel Corp.
  physical id: 400
  bus info: cpu@0
  slot: Proc 1
  size: 2666MHz
  width: 64 bits
  clock: 1333MHz
  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 s
*-cache:0
  description: L1 cache
  physical id: 710
  slot: Processor 1 Internal L1 Cache
  size: 64KB
  capacity: 128KB
  capabilities: burst internal write-back data
*-cache:1
  description: L2 cache
  physical id: 720
  slot: Processor 1 Internal L2 Cache
  size: 4MB
  capacity: 16MB
  capabilities: burst internal write-back
*-cache:2 DISABLED
  description: L3 cache
  physical id: 730
  slot: Processor 1 Internal L3 Cache
  capacity: 8MB
  capabilities: burst internal
*-cpu:1
  description: CPU
  vendor: Intel
  physical id: 406
  bus info: cpu@1
  slot: Proc 2
  capacity: 505MHz
  clock: 200MHz
  *-cache:0 DISABLED
    description: L1 cache
    physical id: 716
    slot: Processor 2 Internal L1 Cache
    capacity: 128KB
    capabilities: burst internal data
  *-cache:1 DISABLED
    description: L2 cache
    physical id: 726
    slot: Processor 2 Internal L2 Cache
    capacity: 16MB
    capabilities: burst internal
  *-cache:2 DISABLED
    description: L3 cache
    physical id: 736
    slot: Processor 2 Internal L3 Cache
    capacity: 8MB
    capabilities: burst internal
```

```

*-memory
  description: System Memory
  physical id: 1000
  slot: System board or motherboard
  size: 1GB
*-bank:0
  description: Synchronous 667 MHz (1.5 ns)
  physical id: 0
  slot: DIMM 1A
  size: 512MB
  width: 64 bits
  clock: 667MHz (1.5ns)
*-bank:1
  description: Synchronous [empty]
  physical id: 1
  slot: DIMM 2B
  width: 64 bits
*-bank:2
  description: Synchronous [empty]
  physical id: 2
  slot: DIMM 3C
  width: 64 bits
*-bank:3
  description: Synchronous [empty]
  physical id: 3
  slot: DIMM 4D
  width: 64 bits
*-bank:4
  description: Synchronous 667 MHz (1.5 ns)
  physical id: 4
  slot: DIMM 5A
  size: 512MB
  width: 64 bits
  clock: 667MHz (1.5ns)
*-bank:5
  description: Synchronous [empty]
  physical id: 5
  slot: DIMM 6B
  width: 64 bits
*-bank:6
  description: Synchronous [empty]
  physical id: 6
  slot: DIMM 7C
  width: 64 bits
*-bank:7
  description: Synchronous [empty]
  physical id: 7
  slot: DIMM 8D
  width: 64 bits
*-pci:0
  description: Host bridge
  product: 5000Z Chipset Memory Controller Hub
  vendor: Intel Corporation
  physical id: 100
  bus info: pci@00:00.0
  version: b1
  width: 32 bits
  clock: 33MHz
*-pci:0
  description: PCI bridge
  product: 5000 Series Chipset PCI Express x8 Port 2-3
  vendor: Intel Corporation
  physical id: 2
  bus info: pci@00:02.0
  version: b1
  width: 32 bits
  clock: 33MHz
  capabilities: pci normal_decode bus_master cap_list
  configuration: driver=pcieport-driver
*-pci:0
  description: PCI bridge
  product: 6311ESB/6321ESB PCI Express Upstream Port
  vendor: Intel Corporation
  physical id: 0
  bus info: pci@04:00.0
  version: 01
  width: 64 bits
  clock: 33MHz
  capabilities: pci normal_decode bus_master cap_list
  configuration: driver=pcieport-driver
  resources: iomemory:200000f00-200000eff
*-pci:0
  description: PCI bridge
  product: 6311ESB/6321ESB PCI Express Downstream Port E1
  vendor: Intel Corporation
  physical id: 0
  bus info: pci@05:00.0
  version: 01
  width: 32 bits
  clock: 33MHz
  capabilities: pci normal_decode bus_master cap_list
  configuration: driver=pcieport-driver
*-pci:1
  description: PCI bridge
  product: 6311ESB/6321ESB PCI Express Downstream Port E2
  vendor: Intel Corporation
  physical id: 1
  bus info: pci@05:01.0
  version: 01
  width: 32 bits
  clock: 33MHz
  capabilities: pci normal_decode bus_master cap_list
  configuration: driver=pcieport-driver

```



```

*-pci:1
  description: PCI bridge
  product: 6311ESB/6321ESB PCI Express to PCI-X Bridge
  vendor: Intel Corporation
  physical id: 0.3
  bus info: pci@04:00.3
  version: 01
  width: 64 bits
  clock: 33MHz
  capabilities: pci normal_decode bus_master cap_list
  resources: iomemory:22a000f00-22a000eff
*-pci:1
  description: PCI bridge
  product: 5000 Series Chipset PCI Express x4 Port 3
  vendor: Intel Corporation
  physical id: 3
  bus info: pci@00:03.0
  version: b1
  width: 32 bits
  clock: 33MHz
  capabilities: pci normal_decode bus_master cap_list
  configuration: driver=pcieport-driver
*-pci:2
  description: PCI bridge
  product: 5000 Series Chipset PCI Express x4 Port 4
  vendor: Intel Corporation
  physical id: 4
  bus info: pci@00:04.0
  version: b1
  width: 32 bits
  clock: 33MHz
  capabilities: pci normal_decode bus_master cap_list
  configuration: driver=pcieport-driver
*-pci:3
  description: PCI bridge
  product: 5000 Series Chipset PCI Express x4 Port 5
  vendor: Intel Corporation
  physical id: 5
  bus info: pci@00:05.0
  version: b1
  width: 32 bits
  clock: 33MHz
  capabilities: pci normal_decode bus_master cap_list
  configuration: driver=pcieport-driver
*-pci
  description: PCI bridge
  product: EPB PCI-Express to PCI-X Bridge
  vendor: Broadcom
  physical id: 0
  bus info: pci@12:00.0
  version: b4
  width: 32 bits
  clock: 33MHz
  capabilities: pci normal_decode bus_master cap_list
*-pci
  description: PCI bridge
  product: HT1000 PCI/PCI-X bridge
  vendor: Broadcom
  physical id: 4
  bus info: pci@13:04.0
  version: b2
  width: 32 bits
  clock: 66MHz
  capabilities: pci normal_decode bus_master cap_list
*-storage
  description: RAID bus controller
  product: Hewlett-Packard Company
  vendor: Hewlett-Packard Company
  physical id: 8
  bus info: pci@13:08.0
  version: 00
  width: 64 bits
  clock: 33MHz
  capabilities: storage bus_master cap_list
  configuration: driver=cciss latency=64
  resources: iomemory:fd80000-fdffffff ioport:4000-40ff iomemory:fd70000-fd77fff irq:82

```



```

*-pci:4
description: PCI bridge
product: 631xESB/632xESB/3100 Chipset PCI Express Root Port 1
vendor: Intel Corporation
physical id: 1c
bus info: pci@00:1c.0
version: 09
width: 32 bits
clock: 33MHz
capabilities: pci normal_decode bus_master cap_list
configuration: driver=pcieport-driver
*-pci
description: PCI bridge
product: EPB PCI-Express to PCI-X Bridge
vendor: Broadcom
physical id: 0
bus info: pci@02:00.0
version: c3
width: 32 bits
clock: 33MHz
capabilities: pci normal_decode bus_master cap_list
*-network
description: Ethernet interface
product: NetXtreme II BCM5708 Gigabit Ethernet
vendor: Broadcom Corporation
physical id: 0
bus info: pci@03:00.0
logical name: eth0
version: 12
serial: 00:1b:78:73:25:9a
size: 1GB/s
capacity: 1GB/s
width: 64 bits
clock: 66MHz
capabilities: bus_master cap_list ethernet physical tp 10bt 10bt-fd 100bt 100bt-fd 1000bt-fd autonegotiation
configuration: autonegotiation=on broadcast=yes driver=bnx2 driverversion=1.4.44 duplex=full firmware=1.9.6 ip=192.168.1.10
resources: iomemory:fa000000-fbffff irq:90
*-usb:0
description: USB Controller
product: 631xESB/632xESB/3100 Chipset UHCI USB Controller #1
vendor: Intel Corporation
physical id: 1d
bus info: pci@00:1d.0
version: 09
width: 32 bits
clock: 33MHz
capabilities: uhci bus_master
configuration: driver=uhci_hcd latency=0
resources: ioport:1000-101f irq:169
*-usbhost
product: UHCI Host Controller
vendor: Linux 2.6.18-5-amd64 uhci_hcd
physical id: 1
bus info: usb@1
logical name: usb1
version: 2.06
capabilities: usb-1.10
configuration: driver=hub maxpower=0mA slots=2 speed=12.0MB/s
*-usb:1
description: USB Controller
product: 631xESB/632xESB/3100 Chipset UHCI USB Controller #2
vendor: Intel Corporation
physical id: 1d.1
bus info: pci@00:1d.1
version: 09
width: 32 bits
clock: 33MHz
capabilities: uhci bus_master
configuration: driver=uhci_hcd latency=0
resources: ioport:1020-103f irq:177
*-usbhost
product: UHCI Host Controller
vendor: Linux 2.6.18-5-amd64 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:2
  description: USB Controller
  product: 631xESB/632xESB/3100 Chipset UHCI USB Controller #3
  vendor: Intel Corporation
  physical id: 1d.2
  bus info: pci@00:1d.2
  version: 09
  width: 32 bits
  clock: 33MHz
  capabilities: uhci bus_master
  configuration: driver=uhci_hcd latency=0
  resources: ioport:1040-105f irq:58
*-usbhost
  product: UHCI Host Controller
  vendor: Linux 2.6.18-5-amd64 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
  description: Audio device
  product: Logitech EyeToy USB Camera
  vendor: Sony Corporation
  physical id: 1
  bus info: usb@3:1
  version: 1.00
  capabilities: usb-1.10 audio-control
  configuration: driver=snd-usb-audio maxpower=100mA speed=12.0MB/s
*-usb:3
  description: USB Controller
  product: 631xESB/632xESB/3100 Chipset UHCI USB Controller #4
  vendor: Intel Corporation
  physical id: 1d.3
  bus info: pci@00:1d.3
  version: 09
  width: 32 bits
  clock: 33MHz
  capabilities: uhci bus_master
  configuration: driver=uhci_hcd latency=0
  resources: ioport:1060-107f irq:66
*-usbhost
  product: UHCI Host Controller
  vendor: Linux 2.6.18-5-amd64 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:4
  description: USB Controller
  product: 631xESB/632xESB/3100 Chipset EHCI USB2 Controller
  vendor: Intel Corporation
  physical id: 1d.7
  bus info: pci@00:1d.7
  version: 09
  width: 32 bits
  clock: 33MHz
  capabilities: ehci bus_master cap_list
  configuration: driver=ehci_hcd latency=0
  resources: iomemory:f9df0000-f9df03ff irq:169
*-usbhost
  product: EHCI Host Controller
  vendor: Linux 2.6.18-5-amd64 ehci_hcd
  physical id: 1
  bus info: usb@6
  logical name: usb6
  version: 2.06
  capabilities: usb-2.00
  configuration: driver=hub maxpower=0mA slots=8 speed=480.0MB/s

```

```

*-pci:5
  description: PCI bridge
  product: 82801 PCI Bridge
  vendor: Intel Corporation
  physical id: 1e
  bus info: pci@00:1e.0
  version: d9
  width: 32 bits
  clock: 33MHz
  capabilities: pci subtractive_decode bus_master cap_list
*-display
  description: VGA compatible controller
  product: ES1000
  vendor: ATI Technologies Inc
  physical id: 3
  bus info: pci@01:03.0
  version: 02
  size: 128MB
  width: 32 bits
  clock: 33MHz
  capabilities: vga bus_master cap_list
  configuration: latency=64 mingnt=8
  resources: iomemory:f0000000-f7ffffff ioport:3000-30ff iomemory:f9ff0000-f9ffffff irq:7
*-system:0 UNCLAIMED
  description: System peripheral
  product: Integrated Lights Out Controller
  vendor: Compaq Computer Corporation
  physical id: 4
  bus info: pci@01:04.0
  version: 03
  width: 32 bits
  clock: 33MHz
  capabilities: cap_list
  configuration: latency=0
  resources: ioport:2800-28ff iomemory:f9fe0000-f9fe01ff irq:5
*-system:1 UNCLAIMED
  description: System peripheral
  product: Integrated Lights Out Processor
  vendor: Compaq Computer Corporation
  physical id: 4.2
  bus info: pci@01:04.2
  version: 03
  width: 32 bits
  clock: 33MHz
  capabilities: bus_master cap_list
  configuration: latency=64
  resources: ioport:3400-34ff iomemory:f9fd0000-f9fd07ff iomemory:f9fc0000-f9fc1fff iomemory:f9f00000-f9f7ffff irq:10
*-usb
  description: USB Controller
  product: Hewlett-Packard Company
  vendor: Hewlett-Packard Company
  physical id: 4.4
  bus info: pci@01:04.4
  version: 00
  width: 32 bits
  clock: 33MHz
  capabilities: uhci bus_master cap_list
  configuration: driver=uhci_hcd latency=64
  resources: ioport:3800-381f irq:74
*-usbhost
  product: UHCI Host Controller
  vendor: Linux 2.6.18-5-amd64 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:0
  description: Keyboard
  product: Virtual Keyboard
  vendor: HP
  physical id: 1
  bus info: usb@5:1
  version: 0.02
  capabilities: usb-1.10
  configuration: driver=usbhid maxpower=0mA speed=12.0MB/s
*-usb:1
  description: USB hub
  product: Virtual Hub
  vendor: HP
  physical id: 2
  bus info: usb@5:2
  version: 0.01
  capabilities: usb-1.10
  configuration: driver=hub maxpower=0mA slots=7 speed=12.0MB/s

```

```

*-serial UNCLAIMED
  description: Serial bus controller
  product: Hewlett-Packard Company
  vendor: Hewlett-Packard Company
  physical id: 4.6
  bus info: pci@01:04.6
  version: 00
  width: 32 bits
  clock: 33MHz
  capabilities: cap_list
  configuration: latency=0
  resources: iomemory:f9ef0000-f9ef00ff irq:5
*-isa
  description: ISA bridge
  product: 631xESB/632xESB/3100 Chipset LPC Interface Controller
  vendor: Intel Corporation
  physical id: 1f
  bus info: pci@00:1f.0
  version: 09
  width: 32 bits
  clock: 33MHz
  capabilities: isa bus_master
  configuration: latency=0
*-ide
  description: IDE interface
  product: 631xESB/632xESB IDE Controller
  vendor: Intel Corporation
  physical id: 1f.1
  bus info: pci@00:1f.1
  version: 09
  width: 32 bits
  clock: 33MHz
  capabilities: ide bus_master
  configuration: driver=PIIX_IDE latency=0
  resources: ioport:500-50f irq:7
*-ide
  description: IDE Channel 0
  physical id: 0
  bus info: ide@0
  logical name: ide0
  clock: 33MHz
*-cdrom
  description: DVD writer
  product: HL-DT-STDVD+-RW GSA-H21L
  physical id: 0
  bus info: ide@0.0
  logical name: /dev/hda
  version: 2.02
  capabilities: packet atapi cdrom removable nonmagnetic dma lba iordy audio cd-r cd-rw dvd dvd-r
  configuration: mode=udma2
*-disc
  physical id: 0
  logical name: /dev/hda
*-pci:1
  description: Host bridge
  product: 5000 Series Chipset Error Reporting Registers
  vendor: Intel Corporation
  physical id: 101
  bus info: pci@00:10.0
  version: b1
  width: 32 bits
  clock: 33MHz
*-pci:2
  description: Host bridge
  product: 5000 Series Chipset Error Reporting Registers
  vendor: Intel Corporation
  physical id: 102
  bus info: pci@00:10.1
  version: b1
  width: 32 bits
  clock: 33MHz
*-pci:3
  description: Host bridge
  product: 5000 Series Chipset Error Reporting Registers
  vendor: Intel Corporation
  physical id: 103
  bus info: pci@00:10.2
  version: b1
  width: 32 bits
  clock: 33MHz
*-pci:4
  description: Host bridge
  product: 5000 Series Chipset Reserved Registers
  vendor: Intel Corporation
  physical id: 104
  bus info: pci@00:11.0
  version: b1
  width: 32 bits
  clock: 33MHz
*-pci:5
  description: Host bridge
  product: 5000 Series Chipset Reserved Registers
  vendor: Intel Corporation
  physical id: 105
  bus info: pci@00:13.0
  version: b1
  width: 32 bits
  clock: 33MHz

```

```
*-pci:6
  description: Host bridge
  product: 5000 Series Chipset FBD Registers
  vendor: Intel Corporation
  physical id: 106
  bus info: pci@00:15.0
  version: b1
  width: 32 bits
  clock: 33MHz
*-pci:7
  description: Host bridge
  product: 5000 Series Chipset FBD Registers
  vendor: Intel Corporation
  physical id: 107
  bus info: pci@00:16.0
  version: b1
  width: 32 bits
  clock: 33MHz
```

3.8.4 xorg.conf

debconf で自動生成された設定です。

```

# /etc/X11/xorg.conf (xorg X Window System server configuration file)
#
# This file was generated by dexconf, the Debian X Configuration tool, using
# values from the debconf database.
#
# Edit this file with caution, and see the /etc/X11/xorg.conf manual page.
# (Type "man /etc/X11/xorg.conf" at the shell prompt.)
#
# This file is automatically updated on xserver-xorg package upgrades *only*
# if it has not been modified since the last upgrade of the xserver-xorg
# package.
#
# If you have edited this file but would like it to be automatically updated
# again, run the following command:
#   sudo dpkg-reconfigure -phigh xserver-xorg

Section "Files"
    FontPath        "/usr/share/fonts/X11/misc"
    FontPath        "/usr/X11R6/lib/X11/fonts/misc"
    FontPath        "/usr/share/fonts/X11/cyrillic"
    FontPath        "/usr/X11R6/lib/X11/fonts/cyrillic"
    FontPath        "/usr/share/fonts/X11/100dpi:unscaled"
    FontPath        "/usr/X11R6/lib/X11/fonts/100dpi:unscaled"
    FontPath        "/usr/share/fonts/X11/75dpi:unscaled"
    FontPath        "/usr/X11R6/lib/X11/fonts/75dpi:unscaled"
    FontPath        "/usr/share/fonts/X11/Type1"
    FontPath        "/usr/X11R6/lib/X11/fonts/Type1"
    FontPath        "/usr/share/fonts/X11/100dpi"
    FontPath        "/usr/X11R6/lib/X11/fonts/100dpi"
    FontPath        "/usr/share/fonts/X11/75dpi"
    FontPath        "/usr/X11R6/lib/X11/fonts/75dpi"
    # path to defoma fonts
    FontPath        "/var/lib/defoma/x-ttcidfont-conf.d/dirs/TrueType"
EndSection

Section "Module"
    Load            "bitmap"
    Load            "ddc"
    Load            "dri"
    Load            "extmod"
    Load            "freetype"
    Load            "glx"
    Load            "int10"
    Load            "vbe"
EndSection

Section "InputDevice"
    Identifier      "Generic Keyboard"
    Driver          "kbd"
    Option          "CoreKeyboard"
    Option          "XkbRules"            "xorg"
    Option          "XkbModel"           "pc104"
    Option          "XkbLayout"          "us"
    Option          "XkbOptions"          "ctrl:nocaps"
EndSection

Section "InputDevice"
    Identifier      "Configured Mouse"
    Driver          "mouse"
    Option          "CorePointer"
    Option          "Device"              "/dev/input/mice"
    Option          "Protocol"            "ImPS/2"
    Option          "Emulate3Buttons"     "true"
EndSection

Section "Device"
    Identifier      "ATI Technologies Inc ES1000"
    Driver          "ati"
    BusID          "PCI:1:3:0"
EndSection

Section "Monitor"
    Identifier      "17 ANALOG MO"
    Option          "DPMS"
    HorizSync      28-50
    VertRefresh    43-75
EndSection

```

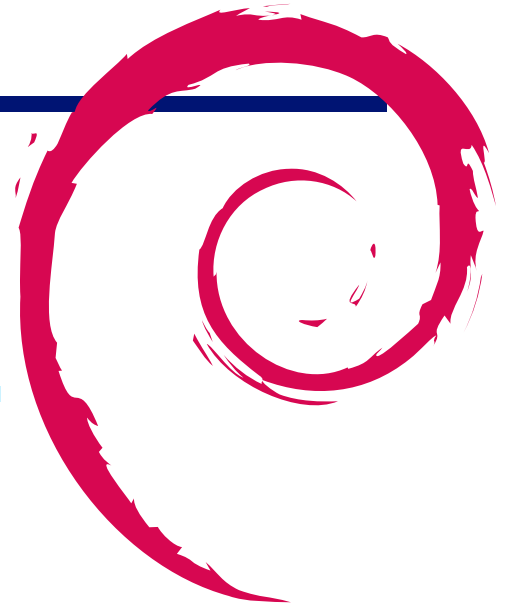
```

Section "Screen"
  Identifier      "Default Screen"
  Device         "ATI Technologies Inc ES1000"
  Monitor        "17 ANALOG M0"
  DefaultDepth   24
  SubSection "Display"
    Depth        1
    Modes        "1280x1024" "1024x768" "800x600" "640x480"
  EndSubSection
  SubSection "Display"
    Depth        4
    Modes        "1280x1024" "1024x768" "800x600" "640x480"
  EndSubSection
  SubSection "Display"
    Depth        8
    Modes        "1280x1024" "1024x768" "800x600" "640x480"
  EndSubSection
  SubSection "Display"
    Depth        15
    Modes        "1280x1024" "1024x768" "800x600" "640x480"
  EndSubSection
  SubSection "Display"
    Depth        16
    Modes        "1280x1024" "1024x768" "800x600" "640x480"
  EndSubSection
  SubSection "Display"
    Depth        24
    Modes        "1280x1024" "1024x768" "800x600" "640x480"
  EndSubSection
EndSection

Section "ServerLayout"
  Identifier      "Default Layout"
  Screen         "Default Screen"
  InputDevice    "Generic Keyboard"
  InputDevice    "Configured Mouse"
EndSection

Section "DRI"
  Mode           0666
EndSection

```



4 HP ML110G4 Debian etch 動作確認

上川 純一

4.1 サーバ

HP の ML110G4 は Celeron CPU を搭載したサーバモデルです。今回利用したサーバは SATA 接続のディスクを搭載していました。このハードウェア上で Debian etch 4.0r1 が動作することは有志により確認されています^{*3}。ベンダーとしては特に Debian の動作確認はしていないようです。

4.2 インストール前の準備

特に必要ないようです。

4.3 インストール

Debian installer でインストールします。今回は Debian GNU/Linux 4.0r1 DVD の 1 枚目を利用しました。i386 のインストール CD を利用しました。

4.4 デバイスの認識

グラフィックデバイスを自動認識できず、VESA モードで動作します。MGA のカードなので、mga ドライバで動作します。メモリが少ないため、デフォルトでは 640x480x24 で動作するため若干画面が狭いです。色を 16bit に減らすと 1024x768x16 で動作しました。

```
SZ:   Pixels      Physical      Refresh
*0  1024 x 768    ( 271mm x 203mm ) *60
1    800 x 600    ( 271mm x 203mm ) 75 72 60 56
2    640 x 480    ( 271mm x 203mm ) 75 73 60
3    832 x 624    ( 271mm x 203mm ) 75
4    640 x 400    ( 271mm x 203mm ) 60
5    640 x 384    ( 271mm x 203mm ) 60
6    576 x 384    ( 271mm x 203mm ) 55
7    512 x 384    ( 271mm x 203mm ) 60
8    416 x 312    ( 271mm x 203mm ) 75
9    400 x 300    ( 271mm x 203mm ) 75 72 60 56
10   320 x 240    ( 271mm x 203mm ) 75 73 60
Current rotation - normal
Current reflection - none
Rotations possible - normal
Reflections possible - none
```

4.5 謝辞

OSC Tokyo/Fall 2007 Debian ブースにて本作業を行いました。サーバはびぎねっとからお借りしました。

^{*3} Debian の ProLiant on Debian ページ: <http://wiki.debian.org/HP/ProLiant>

4.6 付録

4.6.1 dmesg

```
Linux version 2.6.18-5-686 (Debian 2.6.18.dfsg.1-13) (dannf@debian.org) (gcc version 4.1.2 20061115 (prerelease) (Debian 4.1.1-21)) #1 SMP Fri
BIOS-provided physical RAM map:
BIOS-e820: 0000000000000000 - 0000000000094c00 (usable)
BIOS-e820: 0000000000094c00 - 00000000000a0000 (reserved)
BIOS-e820: 00000000000dc000 - 0000000000100000 (reserved)
BIOS-e820: 0000000000100000 - 00000000e7ea0000 (usable)
BIOS-e820: 00000000e7ea0000 - 00000000e7ea7000 (ACPI data)
BIOS-e820: 00000000e7ea7000 - 00000000e7f00000 (ACPI NVS)
BIOS-e820: 00000000e7f00000 - 00000000e8000000 (reserved)
BIOS-e820: 00000000fec00000 - 00000000fec10000 (reserved)
BIOS-e820: 00000000fee00000 - 00000000fee01000 (reserved)
BIOS-e820: 00000000ff000000 - 0000000100000000 (reserved)
BIOS-e820: 0000000100000000 - 0000000118000000 (usable)
Warning only 4GB will be used.
Use a PAE enabled kernel.
3200MB HIGHMEM available.
896MB LOWMEM available.
found SMP MP-table at 000f69a0
On node 0 totalpages: 1048576
  DMA zone: 4096 pages, LIFO batch:0
  Normal zone: 225280 pages, LIFO batch:31
  HighMem zone: 819200 pages, LIFO batch:31
DMI present.
ACPI: RSDP (v000      HP                               ) @ 0x000f6970
ACPI: RSDT (v001      HP ML110 G4 0x06040000 FOXC 0x00000000) @ 0xe7ea2625
ACPI: FADT (v002      HP ML110 G4 0x06040000 FOXC 0x00000003) @ 0xe7ea6e2e
ACPI: SPMI (v005      HP ML110 G4 0x06040000 FOXC 0x00000001) @ 0xe7ea6eb2
ACPI: SPGR (v001      HP ML110 G4 0x06040000 FOXC 0x00000001) @ 0xe7ea6ef2
ACPI: MCFG (v001      HP ML110 G4 0x06040000 FOXC 0x00000000) @ 0xe7ea6f42
ACPI: MADT (v001      HP ML110 G4 0x06040000 FOXC 0x00000000) @ 0xe7ea6f7e
ACPI: BOOT (v001      HP ML110 G4 0x06040000 FOXC 0x00000001) @ 0xe7ea6fd8
ACPI: DSDT (v001      HP ML110 G4 0x06040000 MSFT 0x03000000) @ 0x00000000
ACPI: PM-Timer IO Port: 0x1008
ACPI: Local APIC address 0xf00000
ACPI: LAPIC (acpi_id[0x00] lapic_id[0x00] enabled)
Processor #0 15:6 APIC version 20
ACPI: LAPIC_NMI (acpi_id[0x00] high edge lint[0x1])
ACPI: IOAPIC (id[0x01] address[0xfec00000] gsi_base[0])
IOAPIC[0]: apic_id 1, version 32, address 0xfec00000, GSI 0-23
ACPI: INT_SRC_OVR (bus 0 bus_irq 0 global_irq 2 high edge)
ACPI: INT_SRC_OVR (bus 0 bus_irq 9 global_irq 9 high level)
ACPI: IRQ0 used by override.
ACPI: IRQ2 used by override.
ACPI: IRQ9 used by override.
Enabling APIC mode: Flat. Using 1 I/O APICs
Using ACPI (MADT) for SMP configuration information
Allocating PCI resources starting at ea000000 (gap: e8000000:16c00000)
Detected 3192.212 MHz processor.
Built 1 zonelists. Total pages: 1048576
Kernel command line: root=/dev/sda1 ro
mapped APIC to ffff0000 (fee00000)
mapped IOAPIC to ffff0000 (fec00000)
Enabling fast FPU save and restore... done.
Enabling unmasked SIMD FPU exception support... done.
Initializing CPU#0
PID hash table entries: 4096 (order: 12, 16384 bytes)
Console: colour VGA+ 80x25
Dentry cache hash table entries: 131072 (order: 7, 524288 bytes)
Inode-cache hash table entries: 65536 (order: 6, 262144 bytes)
Memory: 3757432k/4194304k available (1541k kernel code, 41076k reserved, 576k data, 196k init, 2882176k highmem)
Checking if this processor honours the WP bit even in supervisor mode... Ok.
Calibrating delay using timer specific routine.. 6390.16 BogoMIPS (lpj=12780324)
Security Framework v1.0.0 initialized
SELinux: Disabled at boot.
Capability LSM initialized
Mount-cache hash table entries: 512
CPU: After generic identify, caps: bfebfbff 20100000 00000000 00000000 0000e41d 00000000 00000001
CPU: After vendor identify, caps: bfebfbff 20100000 00000000 00000000 0000e41d 00000000 00000001
monitor/mwait feature present.
using mwait in idle threads.
CPU: Trace cache: 12K uops, L1 D cache: 16K
CPU: L2 cache: 512K
CPU: Hyper-Threading is disabled
CPU: After all inits, caps: bfebfbff 20100000 00000000 00000180 0000e41d 00000000 00000001
Intel machine check architecture supported.
Intel machine check reporting enabled on CPU#0.
CPU0: Intel P4/Xeon Extended MCE MSRs (24) available
CPU0: Thermal monitoring handled by SMI
Compat vDSO mapped to fffff000.
Checking 'hlt' instruction... OK.
SMP alternatives: switching to UP code
Freeing SMP alternatives: 12k freed
ACPI: Core revision 20060707
CPU0: Intel(R) Celeron(R) D CPU 3.20GHz stepping 04
Total of 1 processors activated (6390.16 BogoMIPS).
ENABLING IO-APIC IRQs
..TIMER: vector=0x31 apic1=0 pin1=2 apic2=-1 pin2=-1
```

```

Brought up 1 CPUs
migration_cost=0
checking if image is initramfs... it is
Freeing initrd memory: 4790k freed
NET: Registered protocol family 16
ACPI: bus type pci registered
PCI: BIOS Bug: MCFG area at f0000000 is not E820-reserved
PCI: Not using MMCONFIG.
PCI: PCI BIOS revision 2.10 entry at 0xfd8c0, last bus=10
PCI: Using configuration type 1
Setting up standard PCI resources
ACPI: Interpreter enabled
ACPI: Using IOAPIC for interrupt routing
ACPI: PCI Root Bridge [PCI0] (0000:00)
PCI: Probing PCI hardware (bus 00)
PCI: Ignoring BAR0-3 of IDE controller 0000:00:1f.1
Boot video device is 0000:03:00.0
PCI: Transparent bridge - 0000:00:1e.0
ACPI: PCI Interrupt Routing Table [_SB_.PCI0._PRT]
ACPI: PCI Interrupt Routing Table [_SB_.PCI0.EXP1._PRT]
ACPI: PCI Interrupt Routing Table [_SB_.PCI0.LAN1._PRT]
ACPI: PCI Interrupt Routing Table [_SB_.PCI0.LAN2._PRT]
ACPI: PCI Interrupt Routing Table [_SB_.PCI0.PCIB._PRT]
ACPI: PCI Interrupt Link [LNKA] (IRQs 3 10 11 12 14 15) *7
ACPI: PCI Interrupt Link [LNKB] (IRQs 3 10 11 *12 14 15)
ACPI: PCI Interrupt Link [LNKC] (IRQs 3 10 *11 12 14 15)
ACPI: PCI Interrupt Link [LNKD] (IRQs 3 10 11 12 14 15) *5
ACPI: PCI Interrupt Link [LNKE] (IRQs 3 10 11 12 14 15) *0, disabled.
ACPI: PCI Interrupt Link [LNKF] (IRQs 3 10 11 12 14 15) *0, disabled.
ACPI: PCI Interrupt Link [LNKG] (IRQs 3 10 11 12 14 15) *0, disabled.
ACPI: PCI Interrupt Link [LNKH] (IRQs 3 *10 11 12 14 15)
Linux Plug and Play Support v0.97 (c) Adam Belay
pnp: PnP ACPI init
pnp: PnP ACPI: found 10 devices
PnPBIOS: Disabled by ACPI PNP
PCI: Using ACPI for IRQ routing
PCI: If a device doesn't work, try "pci=routeirq". If it helps, post a report
PCI: Bridge: 0000:00:1c.0
IO window: disabled.
MEM window: disabled.
PREFETCH window: disabled.
PCI: Bridge: 0000:00:1c.4
IO window: disabled.
MEM window: ef000000-ef8fffff
PREFETCH window: ee000000-eeffffff
PCI: Bridge: 0000:00:1c.5
IO window: disabled.
MEM window: ef900000-ef9fffff
PREFETCH window: disabled.
PCI: Bridge: 0000:00:1e.0
IO window: disabled.
MEM window: disabled.
PREFETCH window: disabled.
ACPI: PCI Interrupt 0000:00:1c.0[A] -> GSI 17 (level, low) -> IRQ 169
PCI: Setting latency timer of device 0000:00:1c.0 to 64
ACPI: PCI Interrupt 0000:00:1c.4[A] -> GSI 17 (level, low) -> IRQ 169
PCI: Setting latency timer of device 0000:00:1c.4 to 64
ACPI: PCI Interrupt 0000:00:1c.5[B] -> GSI 16 (level, low) -> IRQ 177
PCI: Setting latency timer of device 0000:00:1c.5 to 64
PCI: Setting latency timer of device 0000:00:1e.0 to 64
NET: Registered protocol family 2
IP route cache hash table entries: 32768 (order: 5, 131072 bytes)
TCP established hash table entries: 131072 (order: 8, 1048576 bytes)
TCP bind hash table entries: 65536 (order: 7, 524288 bytes)
TCP: Hash tables configured (established 131072 bind 65536)
TCP reno registered
Simple Boot Flag at 0x37 set to 0x1
audit: initializing netlink socket (disabled)
audit(1191684934.940:1): initialized
highmem bounce pool size: 64 pages
VFS: Disk quotas dquot_6.5.1
Dquot-cache hash table entries: 1024 (order 0, 4096 bytes)
Initializing Cryptographic API
io scheduler noop registered
io scheduler anticipatory registered
io scheduler deadline registered
io scheduler cfq registered (default)
0000:00:1d.7 EHCI: BIOS handoff failed (BIOS bug ?) 01010001
PCI: Setting latency timer of device 0000:00:1c.0 to 64
assign_interrupt_mode Found MSI capability
Allocate Port Service[0000:00:1c.0:pcie00]
Allocate Port Service[0000:00:1c.0:pcie02]
PCI: Setting latency timer of device 0000:00:1c.4 to 64
assign_interrupt_mode Found MSI capability
Allocate Port Service[0000:00:1c.4:pcie00]
Allocate Port Service[0000:00:1c.4:pcie02]
PCI: Setting latency timer of device 0000:00:1c.5 to 64
assign_interrupt_mode Found MSI capability
Allocate Port Service[0000:00:1c.5:pcie00]
Allocate Port Service[0000:00:1c.5:pcie02]
isapnp: Scanning for PnP cards...
isapnp: No Plug & Play device found

```

```

Serial: 8250/16550 driver $Revision: 1.90 $ 4 ports, IRQ sharing enabled
serial8250: ttyS0 at I/O 0x3f8 (irq = 4) is a 16550A
serial8250: ttyS1 at I/O 0x2f8 (irq = 3) is a 16550A
00:08: ttyS0 at I/O 0x3f8 (irq = 4) is a 16550A
00:09: ttyS1 at I/O 0x2f8 (irq = 3) is a 16550A
RAMDISK driver initialized: 16 RAM disks of 8192K size 1024 blocksize
PNP: No PS/2 controller found. Probing ports directly.
serio: i8042 AUX port at 0x60,0x64 irq 12
serio: i8042 KBD port at 0x60,0x64 irq 1
mice: PS/2 mouse device common for all mice
TCP bic registered
NET: Registered protocol family 1
NET: Registered protocol family 17
NET: Registered protocol family 8
NET: Registered protocol family 20
Using IPI No-Shortcut mode
Time: tsc clocksource has been installed.
ACPI: (supports S0 S4 S5)
Freeing unused kernel memory: 196k freed
ACPI: Processor [CPU0] (supports 8 throttling states)
ACPI Exception (acpi_processor-0681): AE_NOT_FOUND, Processor Device is not present [20060707]
ACPI: Getting cpuindex for acpiid 0x1
ACPI Exception (acpi_processor-0681): AE_NOT_FOUND, Processor Device is not present [20060707]
ACPI: Getting cpuindex for acpiid 0x2
ACPI Exception (acpi_processor-0681): AE_NOT_FOUND, Processor Device is not present [20060707]
ACPI: Getting cpuindex for acpiid 0x3
usbcore: registered new driver usbfs
usbcore: registered new driver hub
USB Universal Host Controller Interface driver v3.0
ACPI: PCI Interrupt 0000:00:1d.0[A] -> GSI 23 (level, low) -> IRQ 217
PCI: Setting latency timer of device 0000:00:1d.0 to 64
uhci_hcd 0000:00:1d.0: UHCI Host Controller
uhci_hcd 0000:00:1d.0: new USB bus registered, assigned bus number 1
uhci_hcd 0000:00:1d.0: irq 217, io base 0x00003000
usb usb1: configuration #1 chosen from 1 choice
hub 1-0:1.0: USB hub found
hub 1-0:1.0: 2 ports detected
Uniform Multi-Platform E-IDE driver Revision: 7.00alpha2
ide: Assuming 33MHz system bus speed for PIO modes; override with idebus=xx
ACPI: PCI Interrupt 0000:00:1d.1[B] -> GSI 19 (level, low) -> IRQ 225
PCI: Setting latency timer of device 0000:00:1d.1 to 64
uhci_hcd 0000:00:1d.1: UHCI Host Controller
uhci_hcd 0000:00:1d.1: new USB bus registered, assigned bus number 2
uhci_hcd 0000:00:1d.1: irq 225, io base 0x00003020
usb usb2: configuration #1 chosen from 1 choice
hub 2-0:1.0: USB hub found
hub 2-0:1.0: 2 ports detected
SCSI subsystem initialized
libata version 2.00 loaded.
ACPI: PCI Interrupt 0000:00:1d.2[C] -> GSI 18 (level, low) -> IRQ 233
PCI: Setting latency timer of device 0000:00:1d.2 to 64
uhci_hcd 0000:00:1d.2: UHCI Host Controller
uhci_hcd 0000:00:1d.2: new USB bus registered, assigned bus number 3
uhci_hcd 0000:00:1d.2: irq 233, io base 0x00003040
usb usb3: configuration #1 chosen from 1 choice
hub 3-0:1.0: USB hub found
hub 3-0:1.0: 2 ports detected
ACPI: PCI Interrupt 0000:00:1d.3[D] -> GSI 16 (level, low) -> IRQ 177
PCI: Setting latency timer of device 0000:00:1d.3 to 64
uhci_hcd 0000:00:1d.3: UHCI Host Controller
uhci_hcd 0000:00:1d.3: new USB bus registered, assigned bus number 4
uhci_hcd 0000:00:1d.3: irq 177, io base 0x00003060
usb usb4: configuration #1 chosen from 1 choice
hub 4-0:1.0: USB hub found
hub 4-0:1.0: 2 ports detected
tg3.c.v3.65 (August 07, 2006)
ACPI: PCI Interrupt 0000:04:00.0[A] -> GSI 17 (level, low) -> IRQ 169
PCI: Setting latency timer of device 0000:04:00.0 to 64
eth0: Tigon3 [partno(N/A) rev 4201 PHY(5750)] (PCI Express) 10/100/1000BaseT Ethernet 00:18:fe:7a:8f:05
eth0: RXcsyms[1] LinkChgREG[0] MIIrq[0] ASF[1] Split[0] WireSpeed[1] TSCap[1]
eth0: dma_rwctrl[76180000] dma_mask[64-bit]
ICH7: IDE controller at PCI slot 0000:00:1f.1
ACPI: PCI Interrupt 0000:00:1f.1[A] -> GSI 18 (level, low) -> IRQ 233
ICH7: chipset revision 1
ICH7: not 100% native mode: will probe irqs later
   ide0: BM-DMA at 0x3080-0x3087, BIOS settings: hda:DMA, hdb:pio
   ide1: BM-DMA at 0x3088-0x308f, BIOS settings: hdc:pio, hdd:pio
Probing IDE interface ide0...
input: AT Translated Set 2 keyboard as /class/input/input0
usb 4-1: new full speed USB device using uhci_hcd and address 2
usb 4-1: configuration #1 chosen from 1 choice
usbcore: registered new driver hiddev
input: ServerEngines SE USB Device as /class/input/input1
input: USB HID v1.1 Keyboard [ServerEngines SE USB Device] on usb-0000:00:1d.3-1
input: ServerEngines SE USB Device as /class/input/input2
input: USB HID v1.1 Mouse [ServerEngines SE USB Device] on usb-0000:00:1d.3-1
usbcore: registered new driver usbhid
drivers/usb/input/hid-core.c: v2.6:USB HID core driver
hda: PIONEER DVD-RW DVR-112D, ATAPI CD/DVD-ROM drive
ide0 at 0x1f0-0x1f7,0x3f6 on irq 14
Probing IDE interface ide1...
ACPI: PCI Interrupt 0000:00:1d.7[A] -> GSI 23 (level, low) -> IRQ 217
PCI: Setting latency timer of device 0000:00:1d.7 to 64
ehci_hcd 0000:00:1d.7: EHCI Host Controller
ehci_hcd 0000:00:1d.7: new USB bus registered, assigned bus number 5
ehci_hcd 0000:00:1d.7: debug port 1

```

```

PCI: cache line size of 128 is not supported by device 0000:00:1d.7
ehci_hcd 0000:00:1d.7: irq 217, io mem 0xfec00000
ehci_hcd 0000:00:1d.7: USB 2.0 started, EHCI 1.00, driver 10 Dec 2004
usb usb5: configuration #1 chosen from 1 choice
hub 5-0:1.0: USB hub found
hub 5-0:1.0: 8 ports detected
usb 4-1: USB disconnect, address 2
ahci 0000:00:1f.2: version 2.0
ACPI: PCI Interrupt 0000:00:1f.2[B] -> GSI 19 (level, low) -> IRQ 225
usb 4-1: new full speed USB device using uhci_hcd and address 3
usb 4-1: configuration #1 chosen from 1 choice
input: ServerEngines SE USB Device as /class/input/input3
input: USB HID v1.11 Keyboard [ServerEngines SE USB Device] on usb-0000:00:1d.3-1
input: ServerEngines SE USB Device as /class/input/input4
input: USB HID v1.11 Mouse [ServerEngines SE USB Device] on usb-0000:00:1d.3-1
PCI: Setting latency timer of device 0000:00:1f.2 to 64
ahci 0000:00:1f.2: AHCI 0001.0100 32 slots 4 ports 3 Gbps 0xf impl RAID mode
ahci 0000:00:1f.2: flags: 64bit ncq pm led clo pio slum part
ata1: SATA max UDMA/133 cmd 0xf881a500 ctl 0x0 bmdma 0x0 irq 50
ata2: SATA max UDMA/133 cmd 0xf881a580 ctl 0x0 bmdma 0x0 irq 50
ata3: SATA max UDMA/133 cmd 0xf881a600 ctl 0x0 bmdma 0x0 irq 50
ata4: SATA max UDMA/133 cmd 0xf881a680 ctl 0x0 bmdma 0x0 irq 50
scsi0 : ahci
ata1: SATA link up 3.0 Gbps (SStatus 123 SControl 300)
ata1.00: ATA-7, max UDMA/133, 160836480 sectors: LBA48 NCQ (depth 31/32)
ata1.00: ata1: dev 0 multi count 0
ata1.00: configured for UDMA/133
scsi1 : ahci
ata2: SATA link down (SStatus 0 SControl 300)
scsi2 : ahci
ata3: SATA link down (SStatus 0 SControl 300)
scsi3 : ahci
ata4: SATA link down (SStatus 0 SControl 300)
Vendor: ATA Model: Hitachi HDS72168 Rev: P210
Type: Direct-Access ANSI SCSI revision: 05
SCSI device sda: 160836480 512-byte hdwr sectors (82348 MB)
sda: Write Protect is off
sda: Mode Sense: 00 3a 00 00
hda: ATAPI 40X DVD-ROM DVD-R CD-R/RW drive, 2000kB Cache, UDMA(33)
Uniform CD-ROM driver Revision: 3.20
SCSI device sda: drive cache: write back
SCSI device sda: 160836480 512-byte hdwr sectors (82348 MB)
sda: Write Protect is off
sda: Mode Sense: 00 3a 00 00
SCSI device sda: drive cache: write back
sda: sda1 sda2 < sda5 >
sd 0:0:0:0: Attached scsi disk sda
Attempting manual resume
kjournald starting. Commit interval 5 seconds
EXT3-fs: mounted filesystem with ordered data mode.
ts: Compaq touchscreen protocol output
intel_rng: FWH not detected
input: PC Speaker as /class/input/input5
Real Time Clock Driver v1.12ac
Adding 2650684k swap on /dev/sda5. Priority:-1 extents:1 across:2650684k
EXT3 FS on sda1, internal journal
loop: loaded (max 8 devices)
device-mapper: ioctl: 4.7.0-ioctl (2006-06-24) initialised: dm-devel@redhat.com
ACPI: Power Button (FF) [PWRB]
ACPI: Power Button (CM) [PWRB]
PM: Writing back config space on device 0000:04:00.0 at offset 1 (was 100506, writing 100106)
mtrr: type mismatch for ee180000,20000 old: uncachable new: write-combining
mtrr: type mismatch for ee100000,80000 old: uncachable new: write-combining
mtrr: type mismatch for ee000000,100000 old: uncachable new: write-combining
NET: Registered protocol family 10
lo: Disabled Privacy Extensions
ADDRCONF(NETDEV_UP): eth0: link is not ready
IPv6 over IPv4 tunneling driver
mtrr: type mismatch for ee000000,400000 old: uncachable new: write-combining
mtrr: type mismatch for ee1a0000,8000 old: uncachable new: write-combining
mtrr: type mismatch for ee180000,20000 old: uncachable new: write-combining
mtrr: type mismatch for ee100000,80000 old: uncachable new: write-combining
mtrr: type mismatch for ee000000,100000 old: uncachable new: write-combining
mtrr: type mismatch for ee000000,400000 old: uncachable new: write-combining
mtrr: type mismatch for ee000000,400000 old: uncachable new: write-combining
mtrr: type mismatch for ee1a0000,8000 old: uncachable new: write-combining
mtrr: type mismatch for ee180000,20000 old: uncachable new: write-combining
mtrr: type mismatch for ee100000,80000 old: uncachable new: write-combining
mtrr: type mismatch for ee000000,100000 old: uncachable new: write-combining
mtrr: type mismatch for ee000000,400000 old: uncachable new: write-combining
mtrr: type mismatch for ee000000,400000 old: uncachable new: write-combining
mtrr: type mismatch for ee1a0000,8000 old: uncachable new: write-combining
mtrr: type mismatch for ee180000,20000 old: uncachable new: write-combining
mtrr: type mismatch for ee100000,80000 old: uncachable new: write-combining
mtrr: type mismatch for ee000000,100000 old: uncachable new: write-combining
mtrr: type mismatch for ee000000,400000 old: uncachable new: write-combining

```

4.6.2 デバイス接続

```
# lspci
00:00.0 Host bridge: Intel Corporation E7230 Memory Controller Hub (rev c0)
00:1c.0 PCI bridge: Intel Corporation 82801G (ICH7 Family) PCI Express Port 1 (rev 01)
00:1c.4 PCI bridge: Intel Corporation 82801GR/GH/GHM (ICH7 Family) PCI Express Port 5 (rev 01)
00:1c.5 PCI bridge: Intel Corporation 82801GR/GH/GHM (ICH7 Family) PCI Express Port 6 (rev 01)
00:1d.0 USB Controller: Intel Corporation 82801G (ICH7 Family) USB UHCI #1 (rev 01)
00:1d.1 USB Controller: Intel Corporation 82801G (ICH7 Family) USB UHCI #2 (rev 01)
00:1d.2 USB Controller: Intel Corporation 82801G (ICH7 Family) USB UHCI #3 (rev 01)
00:1d.3 USB Controller: Intel Corporation 82801G (ICH7 Family) USB UHCI #4 (rev 01)
00:1d.7 USB Controller: Intel Corporation 82801G (ICH7 Family) USB2 EHCI Controller (rev 01)
00:1e.0 PCI bridge: Intel Corporation 82801 PCI Bridge (rev e1)
00:1f.0 ISA bridge: Intel Corporation 82801GB/GR (ICH7 Family) LPC Interface Bridge (rev 01)
00:1f.1 IDE interface: Intel Corporation 82801G (ICH7 Family) IDE Controller (rev 01)
00:1f.2 RAID bus controller: Intel Corporation 82801GR/GH (ICH7 Family) Serial ATA Storage Controller RAID (rev 01)
03:00.0 VGA compatible controller: Matrox Graphics, Inc. MGA G200e [Pilot] ServerEngines (SEP1) (rev 02)
04:00.0 Ethernet controller: Broadcom Corporation NetXtreme BCM5721 Gigabit Ethernet PCI Express (rev 21)
# lspci -n
00:00.0 0600: 8086:2778 (rev c0)
00:1c.0 0604: 8086:27d0 (rev 01)
00:1c.4 0604: 8086:27e0 (rev 01)
00:1c.5 0604: 8086:27e2 (rev 01)
00:1d.0 0c03: 8086:27c8 (rev 01)
00:1d.1 0c03: 8086:27c9 (rev 01)
00:1d.2 0c03: 8086:27ca (rev 01)
00:1d.3 0c03: 8086:27cb (rev 01)
00:1d.7 0c03: 8086:27cc (rev 01)
00:1e.0 0604: 8086:244e (rev e1)
00:1f.0 0601: 8086:27b8 (rev 01)
00:1f.1 0101: 8086:27df (rev 01)
00:1f.2 0104: 8086:27c3 (rev 01)
03:00.0 0300: 102b:0522 (rev 02)
04:00.0 0200: 14e4:1659 (rev 21)
```

4.6.3 lshw の出力

```
# lshw
debian
  description: Tower Computer
  product: ProLiant ML110 G4
  vendor: HP
  version: 1.0
  serial: CN864400V6
  width: 32 bits
  capabilities: smbios-2.4 dmi-2.4
  configuration: boot=normal chassis=tower uuid=07C29E08-154B-1DD2-11B2-0018FE7A8F05
*-core
  description: Motherboard
  product: ML110 G4
  vendor: HP
  physical id: 0
  slot: N/A
*-firmware
  description: BIOS
  vendor: HP
  physical id: 0
  version: 010 (07/20/2007)
  size: 64KB
  capacity: 960KB
  capabilities: pci pnp apm upgrade shadowing escd cdboot bootselect socketedrom edd int5sprintscreens int9keyboard int14serial int10v
*-cpu
  description: CPU
  product: Intel(R) Celeron(R) D CPU 3.20GHz
  vendor: Intel Corp.
  physical id: 4
  bus info: cpu@0
  version: 15.6.4
  serial: 0000-0F64-0000-0000-0000-0000
  slot: PROCESSOR
  size: 3200MHz
  capacity: 4GHz
  width: 64 bits
  clock: 533MHz
  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 s
  configuration: id=0
*-cache:0
  description: L1 cache
  physical id: 5
  slot: L1-Cache
  size: 16KB
  capacity: 16KB
  capabilities: internal write-back data
*-cache:1
  description: L2 cache
  physical id: 6
  slot: L2-Cache
  size: 512KB
  capacity: 512KB
  capabilities: internal write-back unified
*-cache:2 DISABLED
  description: L3 cache
  physical id: 7
  slot: L3-Cache
  capabilities: internal write-back
*-memory
  description: System Memory
  physical id: 21
  slot: System board or motherboard
  size: 4GB
*-bank:0
  description: DIMM Synchronous 667 MHz (1.5 ns)
  product: 534D442D32473838
  vendor: 0000000000000000
  physical id: 0
  serial: FFFFFFFF
  slot: DIMM1
  size: 2GB
  width: 64 bits
  clock: 667MHz (1.5ns)
*-bank:1
  description: DIMM Synchronous [empty]
  physical id: 1
  slot: DIMM2
*-bank:2
  description: DIMM Synchronous 667 MHz (1.5 ns)
  product: 534D442D32473838
  vendor: 0000000000000000
  physical id: 2
  serial: FFFFFFFF
  slot: DIMM3
  size: 2GB
  width: 64 bits
  clock: 667MHz (1.5ns)
*-bank:3
  description: DIMM Synchronous [empty]
  physical id: 3
  slot: DIMM4
```

```

*-pci
  description: Host bridge
  product: E7230 Memory Controller Hub
  vendor: Intel Corporation
  physical id: 100
  bus info: pci@00:00.0
  version: c0
  width: 32 bits
  clock: 33MHz
*-pci:0
  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
  configuration: driver=pcieport-driver
*-pci:1
  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
  configuration: driver=pcieport-driver
*-display
  description: VGA compatible controller
  product: MGA G200e [Pilot] ServerEngines (SEP1)
  vendor: Matrox Graphics, Inc.
  physical id: 0
  bus info: pci@03:00.0
  version: 02
  size: 16MB
  width: 32 bits
  clock: 33MHz
  capabilities: vga bus_master cap_list
  configuration: latency=0
  resources: iomemory:ee000000-eeffffff iomemory:ef800000-ef803fff iomemory:ef000000-ef7ffff irq:7
*-pci:2
  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
  configuration: driver=pcieport-driver
*-network
  description: Ethernet interface
  product: NetXtreme BCM5721 Gigabit Ethernet PCI Express
  vendor: Broadcom Corporation
  physical id: 0
  bus info: pci@04:00.0
  logical name: eth0
  version: 21
  serial: 00:18:fe:7a:8f:05
  size: 1GB/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 driverversion=3.65 duplex=full firmware=5721-v3.58 ip=192.168.1.90
  resources: iomemory:ef900000-ef90ffff irq:58
*-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:3000-301f irq:217
*-usbhost
  product: UHCI Host Controller
  vendor: Linux 2.6.18-5-686 uhci_hcd
  physical id: 1
  bus info: usb@1
  logical name: usb1
  version: 2.06
  capabilities: usb-1.10
  configuration: driver=hub maxpower=0mA slots=2 speed=12.0MB/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:3020-303f irq:225
*-usbhost
  product: UHCI Host Controller
  vendor: Linux 2.6.18-5-686 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: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:3040-305f irq:233
*-usbhost
  product: UHCI Host Controller
  vendor: Linux 2.6.18-5-686 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: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:3060-307f irq:177
*-usbhost
  product: UHCI Host Controller
  vendor: Linux 2.6.18-5-686 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
  description: Keyboard
  product: SE USB Device
  vendor: ServerEngines
  physical id: 1
  bus info: usb@4:1
  version: 0.01
  serial: 6000D9648CC134
  capabilities: usb-1.10
  configuration: driver=usbhid maxpower=0mA 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:efc00000-efc003ff irq:217
*-usbhost
  product: EHCI Host Controller
  vendor: Linux 2.6.18-5-686 ehci_hcd
  physical id: 1
  bus info: usb@5
  logical name: usb5
  version: 2.06
  capabilities: usb-2.00
  configuration: driver=hub maxpower=0mA slots=8 speed=480.0MB/s

```



```

*-pci:3
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:3080-308f irq:233
*-ide
description: IDE Channel 0
physical id: 0
bus info: ide@0
logical name: ide0
clock: 33MHz
*-cdrom
description: DVD writer
product: PIONEER DVD-RW DVR-112D
vendor: Pioneer
physical id: 0
bus info: ide@0.0
logical name: /dev/hda
version: 1.15
capabilities: packet atapi cdrom removable nonmagnetic dma lba iordy pm audio cd-r cd-rw dvd dvd-r
configuration: mode=udma2
*-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:30c8-30cf ioport:30bc-30bf ioport:30c0-30c7 ioport:30b8-30bb ioport:3090-309f iomemory:efc00400-efc007ff irq:
*-disk
  description: SCSI Disk
  product: Hitachi HDS72168
  vendor: ATA
  physical id: 0.0.0
  bus info: scsi@0:0.0.0
  logical name: /dev/sda
  version: P210
  serial: PVB200Z30BMALF
  size: 76GB
  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: 74GB
  capabilities: primary bootable
*-volume:1
  description: Extended partition
  physical id: 2
  bus info: scsi@0:0.0.0,2
  logical name: /dev/sda2
  size: 2588MB
  capacity: 2588MB
  capabilities: primary extended partitioned partitioned:extended
*-logicalvolume
  description: Linux swap / Solaris partition
  physical id: 5
  logical name: /dev/sda5
  capacity: 2588MB
  capabilities: nofs

```

4.6.4 xorg.conf

debconf で自動生成された設定に手をいれています。色を 16bit にしているのと、driver を mga に明示的に指定しています。

```

# /etc/X11/xorg.conf (xorg X Window System server configuration file)
#
# This file was generated by dexconf, the Debian X Configuration tool, using
# values from the debconf database.
#
# Edit this file with caution, and see the /etc/X11/xorg.conf manual page.
# (Type "man /etc/X11/xorg.conf" at the shell prompt.)
#
# This file is automatically updated on xserver-xorg package upgrades *only*
# if it has not been modified since the last upgrade of the xserver-xorg
# package.
#
# If you have edited this file but would like it to be automatically updated
# again, run the following command:
#   sudo dpkg-reconfigure -phigh xserver-xorg

Section "Files"
    FontPath        "/usr/share/fonts/X11/misc"
    FontPath        "/usr/X11R6/lib/X11/fonts/misc"
    FontPath        "/usr/share/fonts/X11/cyrillic"
    FontPath        "/usr/X11R6/lib/X11/fonts/cyrillic"
    FontPath        "/usr/share/fonts/X11/100dpi:unscaled"
    FontPath        "/usr/X11R6/lib/X11/fonts/100dpi:unscaled"
    FontPath        "/usr/share/fonts/X11/75dpi:unscaled"
    FontPath        "/usr/X11R6/lib/X11/fonts/75dpi:unscaled"
    FontPath        "/usr/share/fonts/X11/Type1"
    FontPath        "/usr/X11R6/lib/X11/fonts/Type1"
    FontPath        "/usr/share/fonts/X11/100dpi"
    FontPath        "/usr/X11R6/lib/X11/fonts/100dpi"
    FontPath        "/usr/share/fonts/X11/75dpi"
    FontPath        "/usr/X11R6/lib/X11/fonts/75dpi"
    # path to defoma fonts
    FontPath        "/var/lib/defoma/x-ttcidfont-conf.d/dirs/TrueType"
EndSection

Section "Module"
    Load            "bitmap"
    Load            "ddc"
    Load            "dri"
    Load            "extmod"
    Load            "freetype"
    Load            "glx"
    Load            "int10"
    Load            "vbe"
EndSection

Section "InputDevice"
    Identifier      "Generic Keyboard"
    Driver          "kbd"
    Option          "CoreKeyboard"
    Option          "XkbRules"        "xorg"
    Option          "XkbModel"       "jp106"
    Option          "XkbLayout"     "j"
EndSection

Section "InputDevice"
    Identifier      "Configured Mouse"
    Driver          "mouse"
    Option          "CorePointer"
    Option          "Device"          "/dev/input/mice"
    Option          "Protocol"        "ImPS/2"
    Option          "Emulate3Buttons" "true"
EndSection

Section "Device"
    Identifier      "Generic Video Card"
    Driver          "mga"
    BusID          "PCI:3:0:0"
EndSection

Section "Monitor"
    Identifier      "RDT153EM"
    Option          "DPMS"
    HorizSync      28-50
    VertRefresh    43-75
EndSection

```

```

Section "Screen"
    Identifier      "Default Screen"
    Device          "Generic Video Card"
    Monitor         "RDT153EM"
    DefaultDepth   16
    SubSection "Display"
        Depth      1
        Modes      "1024x768" "800x600" "640x480"
    EndSubSection
    SubSection "Display"
        Depth      4
        Modes      "1024x768" "800x600" "640x480"
    EndSubSection
    SubSection "Display"
        Depth      8
        Modes      "1024x768" "800x600" "640x480"
    EndSubSection
    SubSection "Display"
        Depth      15
        Modes      "1024x768" "800x600" "640x480"
    EndSubSection
    SubSection "Display"
        Depth      16
        Modes      "1024x768" "800x600" "640x480"
    EndSubSection
    SubSection "Display"
        Depth      24
        Modes      "1024x768" "800x600" "640x480"
    EndSubSection
EndSection

Section "ServerLayout"
    Identifier      "Default Layout"
    Screen          "Default Screen"
    InputDevice    "Generic Keyboard"
    InputDevice    "Configured Mouse"
EndSection

Section "DRI"
    Mode           0666
EndSection

```


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