Re: "ffs_mountroot: can't find rootvp" after cvsup and making worldfmen

Source: http://unix.derkeiler.com/Mailing−Lists/FreeBSD/stable/2005−03/0719.html

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From: Graham Menhennitt (*gmenhennitt_at_optusnet.com.au*)
Date: 03/26/05

```
Date: Sat, 26 Mar 2005 10:16:30 +1100
To: Doug White <dwhite@gumbysoft.com>
```

Doug White wrote:

>On Fri, 25 Mar 2005, Graham Menhennitt wrote:
>
>
>
>>I just cvsupped to the latest RELENG_5 (as of yesterday) and built and
>>installed the world and a new kernel. When I boot the new kernel, I get
>>an error "ffs_mountroot: can't find rootvp". At the "mountroot>" prompt,
>>whatever I type (even '?') causes a crash and reboot. I can still boot
>>my old kernel without a problem. The dmesg from the old kernel and a
>>capture of the boot of the new kernel are below. Noticably absent from
>>the new one is the line "ad0: 76319MB <ST380011A/3.06> [155061/16/63] at
>>ata0−master UDMA100" which is my only disk drive.
>>
>>Can somebody please help?
>>
>>
>
>
>
Hi Doug. Thanks for responding.

>If you break out of the beastie menu with '6' then enter:
>
>unload
>boot kernel.old
>
>that will get you your old, working kernel. Make a backup of this kernel
>before doing anything else by 'cd /boot; cp −Rp kernel.old kernel.WORKS'.
>You can then reference this in loader by doing 'boot kernel.WORKS'.
>
>
Already done that.

>Next we need to determine why the disk did not probe. I'd suggest booting
>with −v and looking for messages from ata about disk discovery.
>
>
>
A capture of the "boot −v" is below. It doesn't mean anything to me.

>Did you change anything in your kernel config between these kernels?
>
>
>
No. My kernel config is below too.

Thanks again for helping,
Graham

>>Thanks,
>> Graham
>>
>> >>>>>>>>>>>>>>>>> old kernel <<<<<<<<<<<<<<<<<<<<<<
>>
>>Copyright (c) 1992−2005 The FreeBSD Project.
>>Copyright (c) 1979, 1980, 1983, 1986, 1988, 1989, 1991, 1992, 1993, 1994
>> The Regents of the University of California. All rights reserved.
>>FreeBSD 5.3−STABLE #18: Fri Jan 21 06:23:06 EST 2005
>> gfm@xxxx.xxx.xxx:/usr/obj/usr/src/sys/fang
>>Timecounter "i8254" frequency 1193182 Hz quality 0
>>CPU: Intel(R) Pentium(R) 4 CPU 1.70GHz (1700.03−MHz 686−class CPU)
>> Origin = "GenuineIntel" Id = 0xf12 Stepping = 2
>>
>>Features=0x3febfbff<FPU,VME,DE,PSE,TSC,MSR,PAE,MCE,CX8,APIC,SEP,MTRR,PGE,MCA,CMOV,PAT,PSE
>>real memory = 335478784 (319 MB)
>>avail memory = 322949120 (307 MB)
>>npx0: [FAST]
>>npx0: <math processor> on motherboard
>>npx0: INT 16 interface
>>acpi0: <GBT AWRDACPI> on motherboard
>>acpi0: Power Button (fixed)
>>Timecounter "ACPI−fast" frequency 3579545 Hz quality 1000
>>acpi_timer0: <24−bit timer at 3.579545MHz> port 0x4008−0x400b on acpi0
>>cpu0: <ACPI CPU> on acpi0
>>acpi_button0: <Power Button> on acpi0
>>acpi_button1: <Sleep Button> on acpi0
>>pcib0: <ACPI Host−PCI bridge> port 0x4000−0x40f7,0xcf8−0xcff on acpi0
>>pci0: <ACPI PCI bus> on pcib0
>>pcib1: <PCI−PCI bridge> at device 1.0 on pci0
>>pci1: <PCI bus> on pcib1
>>pcib2: <ACPI PCI−PCI bridge> at device 30.0 on pci0
>>pci2: <ACPI PCI bus> on pcib2
>>rl0: <RealTek 8139 10/100BaseTX> port 0xc000−0xc0ff mem
>>0xe4000000−0xe40000ff irq 11 at device 9.0 on pci2

>>miibus0: <MII bus> on rl0
>>rlphy0: <RealTek internal media interface> on miibus0
>>rlphy0: 10baseT, 10baseT−FDX, 100baseTX, 100baseTX−FDX, auto
>>rl0: Ethernet address: 00:20:ed:1c:da:f9
>>pci2: <multimedia, audio> at device 10.0 (no driver attached)
>>isab0: <PCI−ISA bridge> at device 31.0 on pci0
>>isa0: <ISA bus> on isab0
>>atapci0: <Intel ICH2 UDMA100 controller> port
>>0xf000−0xf00f,0x376,0x170−0x177,0x3f6,0x1f0−0x1f7 at device 31.1 on pci0
>>ata0: channel #0 on atapci0
>>ata1: channel #1 on atapci0
>>uhci0: <Intel 82801BA/BAM (ICH2) USB controller USB−A> port
>>0xd000−0xd01f irq 5 at device 31.2 on pci0
>>uhci0: [GIANT−LOCKED]
>>usb0: <Intel 82801BA/BAM (ICH2) USB controller USB−A> on uhci0
>>usb0: USB revision 1.0
>>uhub0: Intel UHCI root hub, class 9/0, rev 1.00/1.00, addr 1
>>uhub0: 2 ports with 2 removable, self powered
>>pci0: <serial bus, SMBus> at device 31.3 (no driver attached)
>>uhci1: <Intel 82801BA/BAM (ICH2) USB controller USB−B> port
>>0xd800−0xd81f irq 12 at device 31.4 on pci0
>>uhci1: [GIANT−LOCKED]
>>usb1: <Intel 82801BA/BAM (ICH2) USB controller USB−B> on uhci1
>>usb1: USB revision 1.0
>>uhub1: Intel UHCI root hub, class 9/0, rev 1.00/1.00, addr 1
>>uhub1: 2 ports with 2 removable, self powered
>>fdc0: <floppy drive controller> port 0x3f7,0x3f0−0x3f5 irq 6 drq 2 on acpi0
>>fdc0: [FAST]
>>sio0: <16550A−compatible COM port> port 0x3f8−0x3ff irq 4 flags 0x10 on
>>acpi0
>>sio0: type 16550A, console
>>sio1: <16550A−compatible COM port> port 0x2f8−0x2ff irq 3 on acpi0
>>sio1: type 16550A
>>ppc0: <Standard parallel printer port> port 0x778−0x77b,0x378−0x37f irq
>>7 on acpi0
>>ppc0: Generic chipset (NIBBLE−only) in COMPATIBLE mode
>>ppbus0: <Parallel port bus> on ppc0
>>ppbus0: IEEE1284 device found
>>Probing for PnP devices on ppbus0:
>>lpt0: <Printer> on ppbus0
>>lpt0: Interrupt−driven port
>>atkbdc0: <Keyboard controller (i8042)> at port 0x64,0x60 on isa0
>>atkbd0: <AT Keyboard> irq 1 on atkbdc0
>>kbd0 at atkbd0
>>atkbd0: [GIANT−LOCKED]
>>Timecounter "TSC" frequency 1700030560 Hz quality 800
>>Timecounters tick every 10.000 msec
>>acpi_cpu: throttling enabled, 2 steps (100% to 50.0%), currently 100.0%
>>ad0: 76319MB <ST380011A/3.06> [155061/16/63] at ata0−master UDMA100
>>Mounting root from ufs:/dev/ad0s1a
>>

>>
>> >>>>>>>>>>>>>>>>>>>>> new kernel <<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<
>>/ − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − Console:
>>serial port
>>BIOS drive A: is disk0
>>BIOS drive C: is disk1
>>BIOS 639kB/326592kB available memory
>>
>>FreeBSD/i386 bootstrap loader, Revision 1.1
>>(xxx@xxxx.xxx, Wed Mar 23 20:16:31 EST 2005)
>>| / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ Loading
>>/boot/defaults/loader.conf
>>| / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | /
>>text=0x252bec
| / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \
>>/ − \ | / − \ | / − \ | syms=[0x4+0x36040/ − \ | / − \ | / − \ | / − +0x4+0x44316\ | / − \ | / − \ | / − \ | / − \ ]
>>| / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / Loading
>>/boot/defaults/loader.conf
>>− \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − [H [J
>>, , [5;46H /( )` [6;46H \ ___ /
>>| [7;46H /− _ `−/ ' [8;46H (/\/ \ \
>>/\ [9;46H / / | ` \ [10;46H O O) /
>>| [11;46H `−^−−'`< ' [12;46H (_.) _)
>>/ [13;46H `.___/` / [14;46H `−−−−−'
>>/ [15;46H<−−−−. __ / __ \ [16;46H<−−−−|====O)))==) \)
>>/==== [17;46H<−−−−' `−−' `.__,' \ [18;46H |
>>| [19;46H \ / /\ [20;46H ______((_
>>/ ______/ [21;46H ,' ,−−−−−' | [22;46H
`−−{__________) [3;2H³ [4;2H³ [5;2H³ [6;2H³ [7;2H³ [8;2H³ [9;2H³ [10;2H³ [11;2H³ [12;2H³ [13;2H³ [14;2H³ [15
>>to FreeBSD! [9;5H1 [9;6H. Boot FreeBSD [default] [10;5H2 [10;6H. Boot
>>FreeBSD with ACPI disabled [11;5H3 [11;6H. Boot FreeBSD in Safe
>>Mode [12;5H4 [12;6H. Boot FreeBSD in single user mode [13;5H5 [13;6H.
>>Boot FreeBSD with verbose logging [14;5H6 [14;6H. Escape to loader
>>prompt [15;5H7 [15;6H. Reboot [20;5HSelect option, [Enter] for
>>default [21;5Hor [Space] to pause timer [21;32H10 [21;32H10
>> [21;32H10 [21;32H10 [21;32H9 [21;32H9 [21;32H9 [21;32H9
>> [21;32H9 [21;32H9 [21;32H9 [21;32H9 [21;32H9 [21;32H9 [21;32H9
>> [21;32H9 [21;32H9 [21;32H9 [21;32H9 [21;32H9 [21;32H9 [21;32H8
>> [21;32H8 [21;32H8 [21;32H8 [21;32H8 [21;32H8 [21;32H8 [21;32H8
>> [21;32H8 [21;32H8 [21;32H8 [21;32H8 [21;32H8
 [25;0H\ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | /
>>autoload failed − no such file or directory
>>\ | / − \ | / Copyright (c) 1992−2005 The FreeBSD Project.
>>Copyright (c) 1979, 1980, 1983, 1986, 1988, 1989, 1991, 1992, 1993, 1994
>> The Regents of the University of California. All rights reserved.
>>FreeBSD 5.4−PRERELEASE #19: Fri Mar 25 07:31:35 EST 2005
>> xxx@xxxx.xxx:/usr/obj/usr/src/sys/fang
>>Timecounter "i8254" frequency 1193182 Hz quality 0
>>CPU: Intel(R) Pentium(R) 4 CPU 1.70GHz (1700.03−MHz 686−class CPU)
>> Origin = "GenuineIntel" Id = 0xf12 Stepping = 2
>>

>>Features=0x3febfbff<FPU,VME,DE,PSE,TSC,MSR,PAE,MCE,CX8,APIC,SEP,MTRR,PGE,MCA,CMOV,PAT,PSE
>>real memory = 335478784 (319 MB)
>>avail memory = 322957312 (307 MB)
>>npx0: <math processor> on motherboard
>>npx0: INT 16 interface
>>cpu0 on motherboard
>>pcib0: <Host to PCI bridge> pcibus 0 on motherboard
>>pir0: <PCI Interrupt Routing Table: 9 Entries> on motherboard
>>pci0: <PCI bus> on pcib0
>>pcib1: <PCI−PCI bridge> at device 1.0 on pci0
>>pci1: <PCI bus> on pcib1
>>pcib2: <PCIBIOS PCI−PCI bridge> at device 30.0 on pci0
>>pci2: <PCI bus> on pcib2
>>rl0: <RealTek 8139 10/100BaseTX> port 0xc000−0xc0ff mem
>>0xe4000000−0xe40000ff irq 11 at device 9.0 on pci2
>>miibus0: <MII bus> on rl0
>>rlphy0: <RealTek internal media interface> on miibus0
>>rlphy0: 10baseT, 10baseT−FDX, 100baseTX, 100baseTX−FDX, auto
>>rl0: Ethernet address: 00:20:ed:1c:da:f9
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>>isa0: <ISA bus> on isab0
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>>ata0: channel #0 on atapci0
>>ata1: channel #1 on atapci0
>>uhci0: <Intel 82801BA/BAM (ICH2) USB controller USB−A> port
>>0xd000−0xd01f irq 5 at device 31.2 on pci0
>>usb0: <Intel 82801BA/BAM (ICH2) USB controller USB−A> on uhci0
>>usb0: USB revision 1.0
>>uhub0: Intel UHCI root hub, class 9/0, rev 1.00/1.00, addr 1
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>>0xd800−0xd81f irq 12 at device 31.4 on pci0
>>usb1: <Intel 82801BA/BAM (ICH2) USB controller USB−B> on uhci1
>>usb1: USB revision 1.0
>>uhub1: Intel UHCI root hub, class 9/0, rev 1.00/1.00, addr 1
>>uhub1: 2 ports with 2 removable, self powered
>>atkbdc0: <Keyboard controller (i8042)> at port 0x64,0x60 on isa0
>>atkbd0: <AT Keyboard> irq 1 on atkbdc0
>>kbd0 at atkbd0
>>fdc0: <Enhanced floppy controller> at port 0x3f0−0x3f5 irq 6 drq 2 on isa0
>>ppc0: <Parallel port> at port 0x378−0x37f irq 7 on isa0
>>ppc0: Generic chipset (NIBBLE−only) in COMPATIBLE mode
>>ppbus0: <Parallel port bus> on ppc0
>>ppbus0: IEEE1284 device found
>>Probing for PnP devices on ppbus0:
>>lpt0: <Printer> on ppbus0
>>lpt0: Interrupt−driven port
>>sio0 at port 0x3f8−0x3ff irq 4 flags 0x10 on isa0

>>sio0: type 16550A, console
>>sio1 at port 0x2f8−0x2ff irq 3 on isa0
>>sio1: type 16550A
>>unknown: <PNP0303> can't assign resources (port)
>>unknown: <PNP0501> can't assign resources (port)
>>unknown: <PNP0700> can't assign resources (port)
>>unknown: <PNP0400> can't assign resources (port)
>>unknown: <PNP0501> can't assign resources (port)
>>Timecounter "TSC" frequency 1700026032 Hz quality 800
>>Timecounters tick every 10.000 msec
>>Mounting root from ufs:/dev/ad0s1a
>>setrootbyname failed
>>ffs_mountroot: can't find rootvp
>>Root mount failed: 6
>>
>>Manual root filesystem specification:
>> <fstype>:<device> Mount <device> using filesystem <fstype>
>> eg. ufs:da0s1a
>> ? List valid disk boot devices
>> <empty line> Abort manual input
>>
>>mountroot>
>>____
>>freebsd−stable@freebsd.org mailing list
>>http://lists.freebsd.org/mailman/listinfo/freebsd−stable
>>To unsubscribe, send any mail to "freebsd−stable−unsubscribe@freebsd.org"
>>
>>
>>
>
>
>
>>>>>>>>>>>>>>>>>>>>>>>>> new kernel with −v flag
<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<<
/ − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − Console:
serial port
BIOS drive A: is disk0
BIOS drive C: is disk1
BIOS 639kB/326592kB available memory

FreeBSD/i386 bootstrap loader, Revision 1.1
(xxx@xxxx.xxx, Wed Mar 23 20:16:31 EST 2005)
| / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ Loading
/boot/defaults/loader.conf
| / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / −
text=0x252bec
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/ − \ | / − \ | / − \ | syms=[0x4+0x36040/ − \ | / − \ | / − \ | / − +0x4+0x44316\ | / − \ | / − \ | / − \ | / − \ ]
| / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / Loading
/boot/defaults/loader.conf
− \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − [H [J [4;46H

, , [5;46H /( )` [6;46H \ ___ /
| [7;46H /− _ `−/ ' [8;46H (/\/ \ \
/\ [9;46H / / | ` \ [10;46H O O) /
| [11;46H `−^−−'`< ' [12;46H (_.) _)
/ [13;46H `.___/` / [14;46H `−−−−−'
/ [15;46H<−−−−. __ / __ \ [16;46H<−−−−|====O)))==) \)
/==== [17;46H<−−−−' `−−' `.__,' \ [18;46H |
| [19;46H \ / /\ [20;46H ______((_
/ ______/ [21;46H ,' ,−−−−−' | [22;46H
`−−{_____) [3;2H³ [4;2H³ [5;2H³ [6;2H³ [7;2H³ [8;2H³ [9;2H³ [10;2H³ [11;2H³ [12;2H³ [13;2H³ [14;2H³ [15;2H³
to FreeBSD! [9;5H1 [9;6H. Boot FreeBSD [default] [10;5H2 [10;6H. Boot
FreeBSD with ACPI disabled [11;5H3 [11;6H. Boot FreeBSD in Safe
Mode [12;5H4 [12;6H. Boot FreeBSD in single user mode [13;5H5 [13;6H.
Boot FreeBSD with verbose logging [14;5H6 [14;6H. Escape to loader
prompt [15;5H7 [15;6H. Reboot [20;5HSelect option, [Enter] for
default [21;5Hor [Space] to pause timer [21;32H10 [21;32H10
 [21;32H10 [21;32H10 [21;32H10 [21;32H10 [21;32H10 [21;32H10
 [21;32H9 [21;32H9 [21;32H9 [21;32H9 [21;32H9 [21;32H9 [25;0H

Type '?' for a list of commands, 'help' for more detailed help.
OK boot −v
\ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | / − \ | /
autoload failed − no such file or directory
\ | / − \ | / SMAP type=01 base=0000000000000000 len=000000000009fc00
SMAP type=01 base=000000000009fc00 len=0000000000000400
SMAP type=02 base=00000000000f0000 len=0000000000010000
SMAP type=02 base=00000000fec00000 len=0000000001400000
SMAP type=01 base=0000000000100000 len=0000000013ef0000
SMAP type=03 base=0000000013ff3000 len=000000000000d000
SMAP type=04 base=0000000013ff0000 len=0000000000003000
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    The Regents of the University of California. All rights reserved.
FreeBSD 5.4−PRERELEASE #19: Fri Mar 25 07:31:35 EST 2005
    xxx@xxxx.xxx:/usr/obj/usr/src/sys/fang
Preloaded elf kernel "/boot/kernel/kernel" at 0xc072c000.
Calibrating clock(s) ... i8254 clock: 1193225 Hz
CLK_USE_I8254_CALIBRATION not specified − using default frequency
Timecounter "i8254" frequency 1193182 Hz quality 0
Calibrating TSC clock ... TSC clock: 1700030456 Hz
CPU: Intel(R) Pentium(R) 4 CPU 1.70GHz (1700.03−MHz 686−class CPU)
  Origin = "GenuineIntel" Id = 0xf12 Stepping = 2

Features=0x3febfbff<FPU,VME,DE,PSE,TSC,MSR,PAE,MCE,CX8,APIC,SEP,MTRR,PGE,MCA,CMOV,PAT,PSE3
real memory = 335478784 (319 MB)
Physical memory chunk(s):
0x0000000000001000 − 0x000000000009ffff, 651264 bytes (159 pages)
0x0000000000100000 − 0x00000000003fffff, 3145728 bytes (768 pages)
0x0000000000825000 − 0x0000000013a1ffff, 320843776 bytes (78331 pages)
avail memory = 322957312 (307 MB)
bios32: Found BIOS32 Service Directory header at 0xc00faa40

bios32: Entry = 0xfaed0 (c00faed0) Rev = 0 Len = 1
pcibios: PCI BIOS entry at 0xf0000+0xaf00
pnpbios: Found PnP BIOS data at 0xc00fb8f0
pnpbios: Entry = f0000:b920 Rev = 1.0
Other BIOS signatures found:
null: <null device, zero device>
random: <entropy source, Software, Yarrow>
npx0: [FAST]
npx0: <math processor> on motherboard
npx0: INT 16 interface
cpu0 on motherboard
pci_open(1): mode 1 addr port (0x0cf8) is 0x80000090
pci_open(1a): mode1res=0x80000000 (0x80000000)
pci_cfgcheck: device 0 [class=060000] [hdr=00] is there (id=00000010)
pcibios: BIOS version 2.10
Found $PIR table, 9 entries at 0xc00fded0
PCI−Only Interrupts: 5 9 10 11 12
Location Bus Device Pin Link IRQs
slot 1 0 2 A 0x60 3 4 5 7 9 10 11 12 14 15
slot 1 0 2 B 0x61 3 4 5 7 9 10 11 12 14 15
slot 1 0 2 C 0x62 3 4 5 7 9 10 11 12 14 15
slot 1 0 2 D 0x63 3 4 5 7 9 10 11 12 14 15
slot 2 2 8 A 0x68 3 4 5 7 9 10 11 12 14 15
slot 2 2 8 B 0x69 3 4 5 7 9 10 11 12 14 15
slot 2 2 8 C 0x6a 3 4 5 7 9 10 11 12 14 15
slot 2 2 8 D 0x6b 3 4 5 7 9 10 11 12 14 15
slot 3 2 0 A 0x62 3 4 5 7 9 10 11 12 14 15
slot 3 2 0 B 0x69 3 4 5 7 9 10 11 12 14 15
slot 3 2 0 C 0x6a 3 4 5 7 9 10 11 12 14 15
slot 3 2 0 D 0x60 3 4 5 7 9 10 11 12 14 15
slot 4 2 1 A 0x69 3 4 5 7 9 10 11 12 14 15
slot 4 2 1 B 0x6a 3 4 5 7 9 10 11 12 14 15
slot 4 2 1 C 0x60 3 4 5 7 9 10 11 12 14 15
slot 4 2 1 D 0x62 3 4 5 7 9 10 11 12 14 15
slot 5 2 2 A 0x6a 3 4 5 7 9 10 11 12 14 15
slot 5 2 2 B 0x60 3 4 5 7 9 10 11 12 14 15
slot 5 2 2 C 0x62 3 4 5 7 9 10 11 12 14 15
slot 5 2 2 D 0x69 3 4 5 7 9 10 11 12 14 15
slot 6 2 9 A 0x69 3 4 5 7 9 10 11 12 14 15
slot 6 2 9 B 0x6a 3 4 5 7 9 10 11 12 14 15
slot 6 2 9 C 0x60 3 4 5 7 9 10 11 12 14 15
slot 6 2 9 D 0x62 3 4 5 7 9 10 11 12 14 15
slot 7 2 10 A 0x6a 3 4 5 7 9 10 11 12 14 15
slot 7 2 10 B 0x60 3 4 5 7 9 10 11 12 14 15
slot 7 2 10 C 0x62 3 4 5 7 9 10 11 12 14 15
slot 7 2 10 D 0x69 3 4 5 7 9 10 11 12 14 15
embedded 0 31 A 0x60 3 4 5 7 9 10 11 12 14 15
embedded 0 31 B 0x61 3 4 5 7 9 10 11 12 14 15
embedded 0 31 C 0x6b 3 4 5 7 9 10 11 12 14 15
embedded 0 31 D 0x63 3 4 5 7 9 10 11 12 14 15
embedded 0 1 A 0x60 3 4 5 7 9 10 11 12 14 15

```
embedded 0 1 B 0x61 3 4 5 7 9 10 11 12 14 15
embedded 0 1 C 0x62 3 4 5 7 9 10 11 12 14 15
embedded 0 1 D 0x63 3 4 5 7 9 10 11 12 14 15
pcib0: <Host to PCI bridge> pcibus 0 on motherboard
pir0: <PCI Interrupt Routing Table: 9 Entries> on motherboard
$PIR: Links after initial probe:
Link IRQ Rtd Ref IRQs
0x60 255 N 8 3 4 5 7 9 10 11 12 14 15
0x61 255 N 3 3 4 5 7 9 10 11 12 14 15
0x62 255 N 7 3 4 5 7 9 10 11 12 14 15
0x63 255 N 3 3 4 5 7 9 10 11 12 14 15
0x68 255 N 1 3 4 5 7 9 10 11 12 14 15
0x69 255 N 6 3 4 5 7 9 10 11 12 14 15
0x6a 255 N 6 3 4 5 7 9 10 11 12 14 15
0x6b 255 N 2 3 4 5 7 9 10 11 12 14 15
$PIR: Found matching pin for 2.9.INTA at func 0: 11
$PIR: Found matching pin for 2.10.INTA at func 0: 10
$PIR: Found matching pin for 0.31.INTB at func 3: 9
$PIR: Found matching pin for 0.31.INTC at func 4: 12
$PIR: Found matching pin for 0.31.INTD at func 2: 5
$PIR: Links after initial IRQ discovery:
Link IRQ Rtd Ref IRQs
0x60 255 N 8 3 4 5 7 9 10 11 12 14 15
0x61 9 Y 3 3 4 5 7 9 10 11 12 14 15
0x62 255 N 7 3 4 5 7 9 10 11 12 14 15
0x63 5 Y 3 3 4 5 7 9 10 11 12 14 15
0x68 255 N 1 3 4 5 7 9 10 11 12 14 15
0x69 11 Y 6 3 4 5 7 9 10 11 12 14 15
0x6a 10 Y 6 3 4 5 7 9 10 11 12 14 15
0x6b 12 Y 2 3 4 5 7 9 10 11 12 14 15
$PIR: IRQs used by BIOS: 5 9 10 11 12
$PIR: Interrupt Weights:
[ 0 1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 ]
[ 0 0 0 0 0 3 0 0 0 3 6 6 2 0 0 0 ]
pci0: <PCI bus> on pcib0
pci0: physical bus=0
   map[10]: type 3, range 32, base e0000000, size 26, enabled
found−> vendor=0x8086, dev=0x1a30, revid=0x03
   bus=0, slot=0, func=0
   class=06−00−00, hdrtype=0x00, mfdev=0
   cmdreg=0x0006, statreg=0x2090, cachelnsz=0 (dwords)
   lattimer=0x00 (0 ns), mingnt=0x00 (0 ns), maxlat=0x00 (0 ns)
found−> vendor=0x8086, dev=0x1a31, revid=0x03
   bus=0, slot=1, func=0
   class=06−04−00, hdrtype=0x01, mfdev=0
   cmdreg=0x0107, statreg=0x00a0, cachelnsz=0 (dwords)
   lattimer=0x40 (1920 ns), mingnt=0x06 (1500 ns), maxlat=0x00 (0 ns)
found−> vendor=0x8086, dev=0x244e, revid=0x12
   bus=0, slot=30, func=0
   class=06−04−00, hdrtype=0x01, mfdev=0
   cmdreg=0x0107, statreg=0x0080, cachelnsz=0 (dwords)
```

```
   lattimer=0x00 (0 ns), mingnt=0x06 (1500 ns), maxlat=0x00 (0 ns)
found−> vendor=0x8086, dev=0x2440, revid=0x12
   bus=0, slot=31, func=0
   class=06−01−00, hdrtype=0x00, mfdev=1
   cmdreg=0x000f, statreg=0x0280, cachelnsz=0 (dwords)
   lattimer=0x00 (0 ns), mingnt=0x00 (0 ns), maxlat=0x00 (0 ns)
   map[20]: type 4, range 32, base 0000f000, size 4, enabled
found−> vendor=0x8086, dev=0x244b, revid=0x12
   bus=0, slot=31, func=1
   class=01−01−80, hdrtype=0x00, mfdev=0
   cmdreg=0x0005, statreg=0x0280, cachelnsz=0 (dwords)
   lattimer=0x00 (0 ns), mingnt=0x00 (0 ns), maxlat=0x00 (0 ns)
   map[20]: type 4, range 32, base 0000d000, size 5, enabled
$PIR: 0:31 INTD routed to irq 5
found−> vendor=0x8086, dev=0x2442, revid=0x12
   bus=0, slot=31, func=2
   class=0c−03−00, hdrtype=0x00, mfdev=0
   cmdreg=0x0005, statreg=0x0280, cachelnsz=0 (dwords)
   lattimer=0x00 (0 ns), mingnt=0x00 (0 ns), maxlat=0x00 (0 ns)
   intpin=d, irq=5
   map[20]: type 4, range 32, base 00005000, size 4, enabled
$PIR: 0:31 INTB routed to irq 9
found−> vendor=0x8086, dev=0x2443, revid=0x12
   bus=0, slot=31, func=3
   class=0c−05−00, hdrtype=0x00, mfdev=0
   cmdreg=0x0001, statreg=0x0280, cachelnsz=0 (dwords)
   lattimer=0x00 (0 ns), mingnt=0x00 (0 ns), maxlat=0x00 (0 ns)
   intpin=b, irq=9
   map[20]: type 4, range 32, base 0000d800, size 5, enabled
$PIR: 0:31 INTC routed to irq 12
found−> vendor=0x8086, dev=0x2444, revid=0x12
   bus=0, slot=31, func=4
   class=0c−03−00, hdrtype=0x00, mfdev=0
   cmdreg=0x0005, statreg=0x0280, cachelnsz=0 (dwords)
   lattimer=0x00 (0 ns), mingnt=0x00 (0 ns), maxlat=0x00 (0 ns)
   intpin=c, irq=12
pcib1: <PCI−PCI bridge> at device 1.0 on pci0
pcib1: secondary bus 1
pcib1: subordinate bus 1
pcib1: I/O decode 0xf000−0xfff
pcib1: memory decode 0xfff00000−0xfffff
pcib1: prefetched decode 0xfff00000−0xfffff
pci1: <PCI bus> on pcib1
pci1: physical bus=1
pcib2: <PCIBIOS PCI−PCI bridge> at device 30.0 on pci0
pcib2: secondary bus 2
pcib2: subordinate bus 2
pcib2: I/O decode 0xc000−0xcfff
pcib2: memory decode 0xe4000000−0xe40fffff
pcib2: prefetched decode 0xfff00000−0xfffff
pcib2: Subtractively decoded bridge.
```

```
pci2: <PCI bus> on pcib2
pci2: physical bus=2
    map[10]: type 4, range 32, base 0000c000, size 8, enabled
pcib2: device (null) requested decoded I/O range 0xc000−0xc0ff
    map[14]: type 1, range 32, base e4000000, size 8, enabled
pcib2: device (null) requested decoded memory range 0xe4000000−0xe40000ff
$PIR: 2:9 INTA routed to irq 11
found−> vendor=0x10ec, dev=0x8139, revid=0x10
    bus=2, slot=9, func=0
    class=02−00−00, hdrtype=0x00, mfdev=0
    cmdreg=0x0007, statreg=0x0290, cachelnsz=0 (dwords)
    lattimer=0x20 (960 ns), mingnt=0x20 (8000 ns), maxlat=0x40 (16000 ns)
    intpin=a, irq=11
    powerspec 2 supports D0 D1 D2 D3 current D0
    map[10]: type 4, range 32, base 0000c400, size 6, enabled
pcib2: device (null) requested decoded I/O range 0xc400−0xc43f
$PIR: 2:10 INTA routed to irq 10
found−> vendor=0x1274, dev=0x5880, revid=0x04
    bus=2, slot=10, func=0
    class=04−01−00, hdrtype=0x00, mfdev=0
    cmdreg=0x0005, statreg=0x0410, cachelnsz=0 (dwords)
    lattimer=0x20 (960 ns), mingnt=0x0c (3000 ns), maxlat=0x80 (32000 ns)
    intpin=a, irq=10
    powerspec 2 supports D0 D1 D2 D3 current D0
rl0: Reserved 0x100 bytes for rid 0x10 type 4 at 0xc000
pcib2: device rl0 requested decoded I/O range 0xc000−0xc0ff
rl0: <RealTek 8139 10/100BaseTX> port 0xc000−0xc0ff mem
0xe4000000−0xe40000ff irq 11 at device 9.0 on pci2
pcib2: device rl0 requested decoded I/O range 0xc000−0xc0ff
miibus0: <MII bus> on rl0
rlphy0: <RealTek internal media interface> on miibus0
rlphy0: 10baseT, 10baseT−FDX, 100baseTX, 100baseTX−FDX, auto
rl0: bpf attached
rl0: Ethernet address: 00:20:ed:1c:da:f9
rl0: [MPSAFE]
pci2: <multimedia, audio> at device 10.0 (no driver attached)
isab0: <PCI−ISA bridge> at device 31.0 on pci0
isa0: <ISA bus> on isab0
atapci0: <Intel ICH2 UDMA100 controller> port
0xf000−0xf00f,0x376,0x170−0x177,0x3f6,0x1f0−0x1f7 at device 31.1 on pci0
atapci0: Reserved 0x10 bytes for rid 0x20 type 4 at 0xf000
ata0: channel #0 on atapci0
atapci0: Reserved 0x8 bytes for rid 0x10 type 4 at 0x1f0
atapci0: Reserved 0x1 bytes for rid 0x14 type 4 at 0x3f6
ata0: reset tp1 mask=03 ostat0=50 ostat1=00
ata0−master: stat=0x90 err=0x90 lsb=0x90 msb=0x90
ata0−master: stat=0x90 err=0x90 lsb=0x90 msb=0x90
ata0−master: stat=0x90 err=0x90 lsb=0x90 msb=0x90
ata0−master: stat=0x90 err=0x90 lsb=0x90 msb=0x90
ata0−master: stat=0x90 err=0x90 lsb=0x90 msb=0x90
ata0−master: stat=0x90 err=0x90 lsb=0x90 msb=0x90
```

ata0−master: stat=0x90 err=0x90 lsb=0x90 msb=0x90
ata0−master: stat=0x90 err=0x90 lsb=0x90 msb=0x90
ata0−slave: stat=0x90 err=0x90 lsb=0x90 msb=0x90
ata0: reset tp2 stat0=90 stat1=90 devices=0x0
ata0: [MPSAFE]
ata1: channel #1 on atapci0
atapci0: Reserved 0x8 bytes for rid 0x18 type 4 at 0x170
atapci0: Reserved 0x1 bytes for rid 0x1c type 4 at 0x376
ata1: reset tp1 mask=03 ostat0=00 ostat1=00
ata1−master: stat=0x01 err=0x01 lsb=0x01 msb=0x01
ata1−slave: stat=0x01 err=0x01 lsb=0x01 msb=0x01
ata1: reset tp2 stat0=01 stat1=01 devices=0x0
ata1: [MPSAFE]
uhci0: <Intel 82801BA/BAM (ICH2) USB controller USB−A> port
0xd000−0xd01f irq 5 at device 31.2 on pci0
uhci0: Reserved 0x20 bytes for rid 0x20 type 4 at 0xd000
uhci0: [GIANT−LOCKED]
usb0: <Intel 82801BA/BAM (ICH2) USB controller USB−A> on uhci0
usb0: USB revision 1.0
uhub0: Intel UHCI root hub, class 9/0, rev 1.00/1.00, addr 1
uhub0: 2 ports with 2 removable, self powered
pci0: <serial bus, SMBus> at device 31.3 (no driver attached)
uhci1: <Intel 82801BA/BAM (ICH2) USB controller USB−B> port
0xd800−0xd81f irq 12 at device 31.4 on pci0
uhci1: Reserved 0x20 bytes for rid 0x20 type 4 at 0xd800
uhci1: [GIANT−LOCKED]
usb1: <Intel 82801BA/BAM (ICH2) USB controller USB−B> on uhci1
usb1: USB revision 1.0
uhub1: Intel UHCI root hub, class 9/0, rev 1.00/1.00, addr 1
uhub1: 2 ports with 2 removable, self powered
ata: ata0 already exists; skipping it
ata: ata1 already exists; skipping it
Trying Read_Port at 203
Trying Read_Port at 243
Trying Read_Port at 283
Trying Read_Port at 2c3
Trying Read_Port at 303
Trying Read_Port at 343
Trying Read_Port at 383
Trying Read_Port at 3c3
pnpbios: 15 devices, largest 92 bytes
PNP0200: adding dma mask 0x10
PNP0200: adding io range 0−0xf, size=0x10, align=0
PNP0200: adding io range 0x81−0x83, size=0x3, align=0
PNP0200: adding io range 0x87−0x87, size=0x1, align=0
PNP0200: adding io range 0x89−0x8b, size=0x3, align=0
PNP0200: adding io range 0x8f−0x91, size=0x3, align=0
PNP0200: adding io range 0xc0−0xdf, size=0x20, align=0
pnpbios: handle 1 device ID PNP0200 (0002d041)
PNP0100: adding irq mask 0x1
PNP0100: adding io range 0x40−0x43, size=0x4, align=0

pnpbios: handle 2 device ID PNP0100 (0001d041)
PNP0b00: adding irq mask 0x100
PNP0b00: adding io range 0x70−0x71, size=0x2, align=0
pnpbios: handle 3 device ID PNP0b00 (000bd041)
PNP0303: adding irq mask 0x2
PNP0303: adding io range 0x60−0x60, size=0x1, align=0
PNP0303: adding io range 0x64−0x64, size=0x1, align=0
pnpbios: handle 4 device ID PNP0303 (0303d041)
PNP0800: adding io range 0x61−0x61, size=0x1, align=0
pnpbios: handle 5 device ID PNP0800 (0008d041)
PNP0c04: adding irq mask 0x2000
PNP0c04: adding io range 0xf0−0xff, size=0x10, align=0
pnpbios: handle 6 device ID PNP0c04 (040cd041)
INT0800: adding fixed memory32 range 0xffb80000−0xffbfffff, size=0x80000
pnpbios: handle 7 device ID INT0800 (0008d425)
PNP0c01: adding fixed memory32 range 0−0x9ffff, size=0xa0000
PNP0c01: adding fixed memory32 range 0xffb00000−0xffb7ffff, size=0x80000
PNP0c01: adding fixed memory32 range 0xfff00000−0xffffffff, size=0x100000
PNP0c01: adding fixed memory32 range 0xfec00000−0xfec0ffff, size=0x10000
PNP0c01: adding fixed memory32 range 0xfee00000−0xfee0ffff, size=0x10000
PNP0c01: adding fixed memory32 range 0x100000−0x13ffffff, size=0x13f00000
pnpbios: handle 8 device ID PNP0c01 (010cd041)
PNP0c02: adding fixed memory32 range 0xf0000−0xf3fff, size=0x4000
PNP0c02: adding fixed memory32 range 0xf4000−0xf7fff, size=0x4000
PNP0c02: adding fixed memory32 range 0xf8000−0xfbfff, size=0x4000
PNP0c02: adding fixed memory32 range 0xfc000−0xfffff, size=0x4000
pnpbios: handle 9 device ID PNP0c02 (020cd041)
PNP0a03: adding io range 0x294−0x297, size=0x4, align=0
PNP0a03: adding io range 0x4d0−0x4d1, size=0x2, align=0
PNP0a03: adding io range 0xcf8−0xcff, size=0x8, align=0
PNP0a03: adding io range 0x4000−0x40f7, size=0xf8, align=0
pnpbios: handle 10 device ID PNP0a03 (030ad041)
PNP0501: adding irq mask 0x10
PNP0501: adding io range 0x3f8−0x3ff, size=0x8, align=0
pnpbios: handle 12 device ID PNP0501 (0105d041)
PNP0700: adding dma mask 0x4
PNP0700: adding io range 0x3f0−0x3f5, size=0x6, align=0
PNP0700: adding io range 0x3f7−0x3f7, size=0x1, align=0
PNP0700: adding irq mask 0x40
pnpbios: handle 13 device ID PNP0700 (0007d041)
PNP0400: adding irq mask 0x80
PNP0400: adding io range 0x378−0x37f, size=0x8, align=0
PNP0400: adding io range 0x778−0x77b, size=0x4, align=0
pnpbios: handle 14 device ID PNP0400 (0004d041)
PNP0501: adding irq mask 0x8
PNP0501: adding io range 0x2f8−0x2ff, size=0x8, align=0
pnpbios: handle 16 device ID PNP0501 (0105d041)
sc: sc0 already exists; skipping it
vga: vga0 already exists; skipping it
isa_probe_children: disabling PnP devices
isa_probe_children: probing non−PnP devices

adv0: not probed (disabled)
aha0: not probed (disabled)
aic0: not probed (disabled)
atkbdc0: <Keyboard controller (i8042)> at port 0x64,0x60 on isa0
atkbd0: <AT Keyboard> irq 1 on atkbdc0
kbd0 at atkbd0
kbd0: atkbd0, generic (0), config:0x0, flags:0x1f0000
atkbd0: [GIANT−LOCKED]
psm0: current command byte:0067
kbdc: TEST_AUX_PORT status:0000
kbdc: RESET_AUX return code:00fe
kbdc: RESET_AUX return code:00fe
kbdc: RESET_AUX return code:00fe
kbdc: DIAGNOSE status:0055
kbdc: TEST_KBD_PORT status:0000
psm0: failed to reset the aux device.
bt0: not probed (disabled)
cs0: not probed (disabled)
ed0: not probed (disabled)
fdc0: ic_type 90 part_id 80
fdc0: <Enhanced floppy controller> at port 0x3f0−0x3f5 irq 6 drq 2 on isa0
fdc0: ic_type 90 part_id 80
fdc0: [MPSAFE]
fdc0: [FAST]
fe0: not probed (disabled)
ie0: not probed (disabled)
lnc0: not probed (disabled)
pcic0 failed to probe at port 0x3e0 iomem 0xd0000 on isa0
pcic1: not probed (disabled)
ppc0: parallel port found at 0x378
ppc0: using extended I/O port range
ppc0: SPP
ppc0: <Parallel port> at port 0x378−0x37f irq 7 on isa0
ppc0: Generic chipset (NIBBLE−only) in COMPATIBLE mode
ppbus0: <Parallel port bus> on ppc0
ppbus0: IEEE1284 device found
Probing for PnP devices on ppbus0:
lpt0: <Printer> on ppbus0
lpt0: Interrupt−driven port
sc0: no video adapter found.
sc0: <System console> failed to probe on isa0
sio0: irq maps: 0x1 0x11 0x1 0x1
sio0 at port 0x3f8−0x3ff irq 4 flags 0x10 on isa0
sio0: type 16550A, console
sio1: irq maps: 0x1 0x9 0x1 0x1
sio1 at port 0x2f8−0x2ff irq 3 on isa0
sio1: type 16550A
sio2: not probed (disabled)
sio3: not probed (disabled)
sn0: not probed (disabled)
vga0: <Generic ISA VGA> failed to probe on isa0

```
vt0: not probed (disabled)
isa_probe_children: probing PnP devices
unknown: <PNP0303> can't assign resources (port)
unknown: <PNP0303> at port 0x60 on isa0
unknown: <PNP0800> failed to probe at port 0x61 on isa0
unknown: <INT0800> failed to probe at iomem 0xffb80000−0xffbfffff on isa0
unknown: <PNP0501> can't assign resources (port)
unknown: <PNP0501> at port 0x3f8−0x3ff on isa0
unknown: <PNP0700> can't assign resources (port)
unknown: <PNP0700> at port 0x3f0−0x3f5 on isa0
unknown: <PNP0400> can't assign resources (port)
unknown: <PNP0400> at port 0x378−0x37f on isa0
unknown: <PNP0501> can't assign resources (port)
unknown: <PNP0501> at port 0x2f8−0x2ff on isa0
Device configuration finished.
procfs registered
Timecounter "TSC" frequency 1700030456 Hz quality 800
Timecounters tick every 10.000 msec
lo0: bpf attached
Mounting root from ufs:/dev/ad0s1a
setrootbyname failed
ffs_mountroot: can't find rootvp
Root mount failed: 6

Manual root filesystem specification:
  <fstype>:<device> Mount <device> using filesystem <fstype>
                    eg. ufs:da0s1a
  ? List valid disk boot devices
  <empty line> Abort manual input

mountroot>
```

>> *kernel config*

```
<<<<<<<<<<<<<<<<<<<<<<<<<<<<
machine i386
cpu I686_CPU
ident fang

options SCHED_4BSD #4BSD scheduler
options INET #InterNETworking
options INET6 #IPv6 communications protocols
options FFS #Berkeley Fast Filesystem
options SOFTUPDATES #Enable FFS soft updates support
options NFSCLIENT #Network Filesystem Client
options NFSSERVER #Network Filesystem Server
options MSDOSFS #MSDOS Filesystem
options CD9660 #ISO 9660 Filesystem
options PROCFS #Process filesystem (requires PSEUDOFS)
options PSEUDOFS #Pseudo−filesystem framework
options COMPAT_43 #Compatible with BSD 4.3 [KEEP THIS!]
options COMPAT_FREEBSD4 #Compatible with FreeBSD4
```

```
options KTRACE #ktrace(1) support
options SYSVSHM #SYSV−style shared memory
options SYSVMSG #SYSV−style message queues
options SYSVSEM #SYSV−style semaphores
options _KPOSIX_PRIORITY_SCHEDULING #Posix P1003_1B real−time extensions
options KBD_INSTALL_CDEV # install a CDEV entry in /dev

device isa
device pci

device fdc

device ata
device atadisk # ATA disk drives
device atapicd # ATAPI CDROM drives
options ATA_STATIC_ID #Static device numbering

device atkbdc # AT keyboard controller
device atkbd # AT keyboard
device psm # PS/2 mouse

device vga # VGA video card driver

device sc

device npx

device sio # 8250, 16[45]50 based serial ports

device ppc
device ppbus # Parallel port bus (required)
device lpt # Printer

device rl # RealTek 8129/8139
device miibus # MII bus support

device random # Entropy device
device loop # Network loopback
device ether # Ethernet support
device pty # Pseudo−ttys (telnet etc)

#device pcm
#device sbc

device usb # USB Bus (required)
device umass # Disks/Mass storage − Requires scbus and da
device scbus # SCSI bus (required for SCSI)
device da # Direct Access (disks)
device pass # Passthrough device (direct SCSI access)
device uhci # UHCI PCI−>USB interface
device ohci # OHCI PCI−>USB interface
```

device bpf # Berkeley packet filter

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