>2GB Bugs still exist in FreeBSD 4.9 ?

Source: http://unix.derkeiler.com/Mailing−Lists/FreeBSD/stable/2004−02/0287.html

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Date: 02/24/04

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To: freebsd−stable@freebsd.org
Date: Mon, 23 Feb 2004 19:04:32 −0500
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Hello,

I've been having this issue for about a year, but haven't had the time to fully diagnose this, and the servers that had this problem didn't have a need for 4GB of ram, they just happened to have 4GB, so the solution was either to remove 2GB, or set hw.physmem="2048M" in /boot/loader.conf. I finally have enough free time to try and diagnose this, but I'm not finding it easy to figure out what's going wrong.

I have about 10 servers like this, Dell PE2650, 6GB of pysical ram using Dell's "Redundant Memory" feature which leaves the system with 4GB of "usable memory", AAC Perc3 card with RAID5 volumes. All of them running apache 1.3, and the ram is mostly used for filesystem cache. It looks to me like the bug exists somewhere in the filesystem cache, and unfortunately that's very heavily used here.

With 2GB of ram, the servers run for months without problems, with 4GB of ram, they crash within 2 minutes of taking a real load.

This isn't a "bad hardware" issue, as it happens the same across 10 servers, and the problem is resolved without changing any hardware, only changing /boot/loader.conf to limit the ram to 2GB.

Has anyone seen this before? Any ideas on what might be wrong?

kgdb:
SMP 4 cpus
IdlePTD at physical address 0x002e9000
initial pcb at physical address 0x002617c0
panicstr: page fault
panic messages:

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---
Fatal trap 12: page fault while in kernel mode
mp_lock = 00000002; cpuid = 0; lapic.id = 00000000
fault virtual address   = 0x0
fault code              = supervisor write, page not present
instruction pointer     = 0x8:0xc020221f
stack pointer           = 0x10:0xff93fcb0
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frame pointer           = 0x10:0xff93fce4
code segment            = base 0x0, limit 0xfffff, type 0x1b
                         = DPL 0, pres 1, def32 1, gran 1
processor eflags        = interrupt enabled, resume, IOPL = 0
current process         = 162 (httpd)
interrupt mask          = bio  <− SMP: XXX
trap number             = 12
panic: page fault
mp_lock = 00000002; cpuid = 0; lapic.id = 00000000
boot() called on cpu#0
syncing disks... 146 146 146 146 146 146 146 146 146 146 146 146 146
146 146 146 146 146 146 146
giving up on 138 buffers
Uptime: 6m7s
#0  dumpsys () at ../../kern/kern_shutdown.c:487
        error = 0
#1  0xc014f0dc in boot (howto=256) at ../../kern/kern_shutdown.c:316
        howto = 256
#2  0xc014f544 in poweroff_wait (junk=0xc0238979, howto=−1071414225) at
../../kern/kern_shutdown.c:595
        fmt = 0xc0238979 "%s"
        bootopt = 256
        buf = "page fault", '\000' <repeats 245 times>
#3  0xc0203881 in trap_fatal (frame=0xff93fc70, eva=0) at
../../i386/i386/trap.c:974
        frame = (struct trapframe *) 0x100
        eva = 0
        code = −1071412871
        type = 12
        ss = −1071412871
        esp = 0
        softseg = {ssd_base = 0, ssd_limit = 1048575, ssd_type = 27,
ssd_dpl = 0, ssd_p = 1, ssd_xx = 4, ssd_xx1 = 3, ssd_def32 = 1,
ssd_gran = 1}
#4  0xc02034f9 in trap_pfault (frame=0xff93fc70, usermode=0, eva=0) at
../../i386/i386/trap.c:867
        va = 0
        vm = (struct vmspace *) 0x0
        map = 0xf0e41340
        rv = 0
        ftype = 2 '\002'
        p = (struct proc *) 0xf0e3c8a0
#5  0xc0203083 in trap (frame={tf_fs = −773586920, tf_es = −1071251440,
tf_ds = 16, tf_edi = 0, tf_esi = −763979776, tf_ebp = −7078684, tf_isp
= −7078756, tf_ebx = 0, tf_edx = −1744832577,
      tf_ecx = 42, tf_eax = 0, tf_trapno = 12, tf_err = 2, tf_eip =
−1071635937, tf_cs = 8, tf_eflags = 66050, tf_esp = −253507424, tf_ss =
−1072177704}) at ../../i386/i386/trap.c:466
        p = (struct proc *) 0xf0e3c8a0
        sticks = 17357937978336346112
        i = 0
        ucode = 0
        type = 12
        code = 0
        eva = 0
#6  0xc020221f in generic_bzero ()
No symbol table info available.
#7  0xc01c2834 in ffs_vget (mp=0xd1e12400, ino=41609651,
vpp=0xff93fd94) at ../../ufs/ffs/ffs_vfsops.c:1111
        fs = (struct fs *) 0x68000840
        ip = (struct inode *) 0xd276f100
        ump = (struct ufsmount *) 0xd2158e00
```

```
         bp = (struct buf *) 0xff93fdb0
         vp = (struct vnode *) 0xd2769800
         dev = 0x0
         error = −763979776
#8  0xc01c606b in ufs_lookup (ap=0xff93fdec) at
../../ufs/ufs/ufs_lookup.c:611
         vdp = (struct vnode *) 0xffbf5cc0
         dp = (struct inode *) 0xd2769800
         bp = (struct buf *) 0xde834c6c
         ep = (struct direct *) 0xe42829e0
         entryoffsetinblock = 2528
         slotstatus = FOUND
         slotoffset = −1
         slotsize = 0
         slotfreespace = 0
         slotneeded = 0
         numdirpasses = 2
         endsearch = 9216
         prevoff = 2504
         pdp = (struct vnode *) 0xffbf5cc0
         tdp = (struct vnode *) 0x0
         enduseful = 2528
         bmask = 16383
         lockparent = 0
---Type <return> to continue, or q <return> to quit---
         wantparent = 0
         namlen = 0
         error = −467129888
         vpp = (struct vnode **) 0xff93fef0
         cnp = (struct componentname *) 0xff93ff04
         cred = (struct ucred *) 0xd2762580
         flags = 49348
         nameiop = 0
         p = (struct proc *) 0xf0e3c8a0
#9  0xc01ca98d in ufs_vnoperate (ap=0xff93fdec) at
../../ufs/ufs/ufs_vnops.c:2376
         ap = (struct vop_generic_args *) 0x0
#10 0xc0179e2e in vfs_cache_lookup (ap=0xff93fe44) at vnode_if.h:77
         rc = 0
         a = {a_desc = 0xc02411e0, a_dvp = 0xffbf5cc0, a_vpp =
0xff93fef0, a_cnp = 0xff93ff04}
         dvp = (struct vnode *) 0xffbf5cc0
         vpp = (struct vnode **) 0xff93fef0
         cnp = (struct componentname *) 0xff93ff04
         ap = (struct vop_lookup_args *) 0x0
         dvp = (struct vnode *) 0xffbf5cc0
         vp = (struct vnode *) 0xff93fe00
         lockparent = 0
         error = 0
         vpp = (struct vnode **) 0xff93fef0
         cnp = (struct componentname *) 0xff93ff04
         cred = (struct ucred *) 0x0
         flags = 49348
         p = (struct proc *) 0xf0e3c8a0
         vpid = 4289738624
#11 0xc01ca98d in ufs_vnoperate (ap=0xff93fe44) at
../../ufs/ufs/ufs_vnops.c:2376
         ap = (struct vop_generic_args *) 0x0
#12 0xc017cec1 in lookup (ndp=0xff93fedc) at vnode_if.h:52
         a = {a_desc = 0xc02411a0, a_dvp = 0xffbf5cc0, a_vpp =
0xff93fef0, a_cnp = 0xff93ff04}
         dvp = (struct vnode *) 0xffbf5cc0
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```
         cnp = (struct componentname *) 0xff93ff04
         cp = 0xff8b643a ""
         dp = (struct vnode *) 0xffbf5cc0
         tdp = (struct vnode *) 0xffa3cbc0
         mp = (struct mount *) 0xff8b643a
         docache = 32
         wantparent = 0
         rdonly = 0
         trailing_slash = 0
         error = 0
         dpunlocked = 0
         cnp = (struct componentname *) 0xff93ff04
         p = (struct proc *) 0xf0e3c8a0
#13 0xc017c9ac in namei (ndp=0xff93fedc) at ../../kern/vfs_lookup.c:153
         fdp = (struct filedesc *) 0xff8b6400
         cp = 0xff8b6400
"/usr/home/xxxxxxxx/xxxxxxx/xxxxxxl/xxxxxxxx/xxxxxxxxxx.jpg"
         dp = (struct vnode *) 0xff19fe00
         aiov = {iov_base = 0xff8b641a
"/xxxxxxx/xxxxxxxx/xxxxxxxxxx.jpg", iov_len = 998}
         auio = {uio_iov = 0xff93fe70, uio_iovcnt = 1, uio_offset = 26,
uio_resid = 998, uio_segflg = UIO_SYSSPACE, uio_rw = UIO_READ,
uio_procp = 0x0}
         error = −15073792
         linklen = −15073792
         cnp = (struct componentname *) 0xff93ff04
         p = (struct proc *) 0xf0e3c8a0
#14 0xc0182a51 in access (p=0xf0e3c8a0, uap=0xff93ff80) at
../../kern/vfs_syscalls.c:1633
         cred = (struct ucred *) 0xd236d800
         tmpcred = (struct ucred *) 0xd2762580
         vp = (struct vnode *) 0xff93ff80
         error = −253507424
---Type <return> to continue, or q <return> to quit---
         flags = 2
         nd = {ni_dirp = 0x8555f4c
"xxxxxx/xxxxxxx/xxxxxxxx/xxxxxxxxxx.jpg", ni_segflg = UIO_USERSPACE,
ni_startdir = 0x0, ni_rootdir = 0xff19fe00, ni_topdir = 0x0, ni_vp =
0x0, ni_dvp = 0xffbf5cc0,
   ni_pathlen = 1, ni_next = 0xff8b643a "", ni_loopcnt = 1, ni_cnd =
{cn_nameiop = 0, cn_flags = 49348, cn_proc = 0xf0e3c8a0, cn_cred =
0xd2762580,
     cn_pnbuf = 0xff8b6400
"/usr/home/xxxxxxxx/xxxxxxx/xxxxxxx/xxxxxxxx/xxxxxxxxxx.jpg",
cn_nameptr = 0xff8b642c "xxxxxxxxxx.jpg", cn_namelen = 14, cn_consume =
0}}
#15 0xc0203bc5 in syscall2 (frame={tf_fs = 47, tf_es = 47, tf_ds = 47,
tf_edi = −1077964032, tf_esi = 135808336, tf_ebp = −1077964032, tf_isp
= −7077932, tf_ebx = 139830412, tf_edx = 139812684,
       tf_ecx = 139812684, tf_eax = 33, tf_trapno = 22, tf_err = 2,
tf_eip = 673512776, tf_cs = 31, tf_eflags = 663, tf_esp = −1077964204,
tf_ss = 47}) at ../../i386/i386/trap.c:1175
         params = 0xbfbf9258 "L_U\b"
         i = 0
         callp = (struct sysent *) 0xc0245ea8
         p = (struct proc *) 0xf0e3c8a0
         orig_tf_eflags = 663
         sticks = 4
         error = 0
         narg = 2
         args = {139812684, 0, 1865, 0, 0, 530, 100, −1077972632}
         have_mplock = 1
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         code = 33
#16 0xc01f0f5b in Xint0x80_syscall ()
No symbol table info available.
#17 0x80df418 in ?? ()
No symbol table info available.
dmesg:
Feb 23 06:07:35 op3 /kernel: Copyright (c) 1992−2003 The FreeBSD
Project.
Feb 23 06:07:35 op3 /kernel: Copyright (c) 1979, 1980, 1983, 1986,
1988, 1989, 1991, 1992, 1993, 1994
Feb 23 06:07:35 op3 /kernel: The Regents of the University of
California. All rights reserved.
Feb 23 06:07:35 op3 /kernel: FreeBSD 4.9−STABLE #0: Thu Feb 12 19:14:40
PST 2004
Feb 23 06:07:35 op3 /kernel:
root@op3.isprime.com:/usr/src/sys/compile/MYKERNCONF
Feb 23 06:07:35 op3 /kernel: Timecounter "i8254"  frequency 1193182 Hz
Feb 23 06:07:35 op3 /kernel: CPU: Intel(R) Xeon(TM) CPU 2.80GHz
(2784.07−MHz 686−class CPU)
Feb 23 06:07:35 op3 /kernel: Origin = "GenuineIntel"  Id = 0xf29
Stepping = 9
Feb 23 06:07:35 op3 /kernel:
Features=0xbfebfbff<FPU,VME,DE,PSE,TSC,MSR,PAE,MCE,CX8,APIC,SEP,MTRR,PGE
,MCA,CMOV,PAT,PSE36,CLFLUSH,DTS,ACPI,MMX,FXSR,SSE,SSE2,SS,HTT,TM,PBE>
Feb 23 06:07:35 op3 /kernel: Hyperthreading: 2 logical CPUs
Feb 23 06:07:35 op3 /kernel: real memory  = 4026400768 (3932032K bytes)
Feb 23 06:07:35 op3 /kernel: avail memory = 3923058688 (3831112K bytes)
Feb 23 06:07:35 op3 /kernel: Changing APIC ID for IO APIC #0 from 0 to
8 on chip
Feb 23 06:07:35 op3 /kernel: Changing APIC ID for IO APIC #1 from 0 to
9 on chip
Feb 23 06:07:35 op3 /kernel: Changing APIC ID for IO APIC #2 from 0 to
10 on chip
Feb 23 06:07:35 op3 /kernel: Programming 16 pins in IOAPIC #0
Feb 23 06:07:35 op3 /kernel: IOAPIC #0 intpin 2 −> irq 0
Feb 23 06:07:35 op3 /kernel: Programming 16 pins in IOAPIC #1
Feb 23 06:07:35 op3 /kernel: Programming 16 pins in IOAPIC #2
Feb 23 06:07:35 op3 /kernel: FreeBSD/SMP: Multiprocessor motherboard: 4
CPUs
Feb 23 06:07:35 op3 /kernel: cpu0 (BSP): apic id:  0, version:
0x00050014, at 0xfee00000
Feb 23 06:07:35 op3 /kernel: cpu1 (AP):  apic id:  1, version:
0x00050014, at 0xfee00000
Feb 23 06:07:35 op3 /kernel: cpu2 (AP):  apic id:  6, version:
0x00050014, at 0xfee00000
Feb 23 06:07:35 op3 /kernel: cpu3 (AP):  apic id:  7, version:
0x00050014, at 0xfee00000
Feb 23 06:07:35 op3 /kernel: io0 (APIC): apic id:  8, version:
0x000f0011, at 0xfec00000
Feb 23 06:07:35 op3 /kernel: io1 (APIC): apic id:  9, version:
0x000f0011, at 0xfec01000
Feb 23 06:07:35 op3 /kernel: io2 (APIC): apic id: 10, version:
0x000f0011, at 0xfec02000
Feb 23 06:07:35 op3 /kernel: Preloaded elf kernel "kernel" at
0xc02cc000.
Feb 23 06:07:35 op3 /kernel: Warning: Pentium 4 CPU: PSE disabled
Feb 23 06:07:35 op3 /kernel: Pentium Pro MTRR support enabled
Feb 23 06:07:35 op3 /kernel: md0: Malloc disk
Feb 23 06:07:35 op3 /kernel: Using $PIR table, 9 entries at 0xc00fc410
Feb 23 06:07:35 op3 /kernel: npx0: <math processor> on motherboard
Feb 23 06:07:35 op3 /kernel: npx0: INT 16 interface
Feb 23 06:07:35 op3 /kernel: pcib0: <Host to PCI bridge> on motherboard
```

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Feb 23 06:07:35 op3 /kernel: IOAPIC #1 intpin 3 −> irq 2
Feb 23 06:07:35 op3 /kernel: IOAPIC #1 intpin 7 −> irq 3
Feb 23 06:07:35 op3 /kernel: IOAPIC #1 intpin 11 −> irq 5
Feb 23 06:07:35 op3 /kernel: pci0: <PCI bus> on pcib0
Feb 23 06:07:35 op3 /kernel: pci0: <unknown card> (vendor=0x1028,
dev=0x000c) at 4.0 irq 2
Feb 23 06:07:35 op3 /kernel: pci0: <unknown card> (vendor=0x1028,
dev=0x0008) at 4.1 irq 3
Feb 23 06:07:35 op3 /kernel: pci0: <unknown card> (vendor=0x1028,
dev=0x000d) at 4.2 irq 5
Feb 23 06:07:35 op3 /kernel: pci0: <ATI Mach64−GR graphics accelerator>
at 14.0
Feb 23 06:07:35 op3 /kernel: pci0: <Unknown PCI ATA controller> at 15.1
Feb 23 06:07:35 op3 /kernel: pci0: <OHCI USB controller> at 15.2 irq 0
Feb 23 06:07:35 op3 /kernel: isab0: <PCI to ISA bridge (vendor=1166
device=0225)> at device 15.3 on pci0
Feb 23 06:07:35 op3 /kernel: isa0: <ISA bus> on isab0
Feb 23 06:07:35 op3 /kernel: pcib1: <Host to PCI bridge> on motherboard
Feb 23 06:07:35 op3 /kernel: pci1: <PCI bus> on pcib1
Feb 23 06:07:35 op3 /kernel: pcib2: <Host to PCI bridge> on motherboard
Feb 23 06:07:35 op3 /kernel: pci2: <PCI bus> on pcib2
Feb 23 06:07:35 op3 /kernel: pcib3: <Host to PCI bridge> on motherboard
Feb 23 06:07:35 op3 /kernel: IOAPIC #1 intpin 12 −> irq 7
Feb 23 06:07:35 op3 /kernel: IOAPIC #1 intpin 13 −> irq 10
Feb 23 06:07:35 op3 /kernel: pci3: <PCI bus> on pcib3
Feb 23 06:07:35 op3 /kernel: bge0: <Broadcom BCM5703 Gigabit Ethernet,
ASIC rev. 0x1002> mem 0xfcf10000−0xfcf1ffff irq 7 at device 6.0 on pci3
Feb 23 06:07:35 op3 /kernel: bge0: Ethernet address: 00:0d:56:70:93:a0
Feb 23 06:07:35 op3 /kernel: miibus0: <MII bus> on bge0
Feb 23 06:07:35 op3 /kernel: brgphy0: <BCM5703 10/100/1000baseTX PHY>
on miibus0
Feb 23 06:07:35 op3 /kernel: brgphy0:  10baseT, 10baseT−FDX, 100baseTX,
100baseTX−FDX, 1000baseTX, 1000baseTX−FDX, auto
Feb 23 06:07:35 op3 /kernel: bge1: <Broadcom BCM5703 Gigabit Ethernet,
ASIC rev. 0x1002> mem 0xfcf00000−0xfcf0ffff irq 10 at device 8.0 on
pci3
Feb 23 06:07:35 op3 /kernel: bge1: Ethernet address: 00:0d:56:70:93:a1
Feb 23 06:07:35 op3 /kernel: miibus1: <MII bus> on bge1
Feb 23 06:07:35 op3 /kernel: brgphy1: <BCM5703 10/100/1000baseTX PHY>
on miibus1
Feb 23 06:07:35 op3 /kernel: brgphy1:  10baseT, 10baseT−FDX, 100baseTX,
100baseTX−FDX, 1000baseTX, 1000baseTX−FDX, auto
Feb 23 06:07:36 op3 /kernel: pcib4: <ServerWorks host to PCI
bridge(unknown chipset)> on motherboard
Feb 23 06:07:36 op3 /kernel: IOAPIC #1 intpin 14 −> irq 11
Feb 23 06:07:36 op3 /kernel: pci4: <PCI bus> on pcib4
Feb 23 06:07:36 op3 /kernel: pcib8: <PCI to PCI bridge (vendor=8086
device=0309)> at device 8.0 on pci4
Feb 23 06:07:36 op3 /kernel: IOAPIC #1 intpin 15 −> irq 13
Feb 23 06:07:36 op3 /kernel: pci5: <PCI bus> on pcib8
Feb 23 06:07:36 op3 /kernel: pci5: <unknown card> (vendor=0x9005,
dev=0x00c5) at 6.0 irq 11
Feb 23 06:07:36 op3 /kernel: pci5: <unknown card> (vendor=0x9005,
dev=0x00c5) at 6.1 irq 13
Feb 23 06:07:36 op3 /kernel: aac0: <Dell PERC 3/Di> mem
0xf0000000−0xf7ffffff irq 11 at device 8.1 on pci4
Feb 23 06:07:36 op3 /kernel: aac0: i960RX 100MHz, 118MB cache memory,
optional battery present
Feb 23 06:07:36 op3 /kernel: aac0: Kernel 2.7−1, Build 3170, S/N 1481d3
Feb 23 06:07:36 op3 /kernel: aac0: Supported
Options=75c<WCACHE,DATA64,HOSTTIME,WINDOW4GB,SOFTERR,NORECOND,SGMAP64>
Feb 23 06:07:36 op3 /kernel: pcib5: <ServerWorks host to PCI
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bridge(unknown chipset)> on motherboard
Feb 23 06:07:36 op3 /kernel: pci6: <PCI bus> on pcib5
Feb 23 06:07:36 op3 /kernel: pcib6: <ServerWorks host to PCI
bridge(unknown chipset)> on motherboard
Feb 23 06:07:36 op3 /kernel: pci7: <PCI bus> on pcib6
Feb 23 06:07:36 op3 /kernel: pcib7: <ServerWorks host to PCI
bridge(unknown chipset)> on motherboard
Feb 23 06:07:36 op3 /kernel: pci8: <PCI bus> on pcib7
Feb 23 06:07:36 op3 /kernel: orm0: <Option ROMs> at iomem
0xc0000−0xc7fff,0xc8000−0xcbfff,0xec000−0xeffff on isa0
Feb 23 06:07:36 op3 /kernel: pmtimer0 on isa0
Feb 23 06:07:36 op3 /kernel: fdc0: <NEC 72065B or clone> at port
0x3f0−0x3f5,0x3f7 irq 6 drq 2 on isa0
Feb 23 06:07:36 op3 /kernel: fdc0: FIFO enabled, 8 bytes threshold
Feb 23 06:07:36 op3 /kernel: fd0: <1440−KB 3.5" drive> on fdc0 drive 0
Feb 23 06:07:36 op3 /kernel: atkbdc0: <Keyboard controller (i8042)> at
port 0x60,0x64 on isa0
Feb 23 06:07:36 op3 /kernel: atkbd0: <AT Keyboard> irq 1 on atkbdc0
Feb 23 06:07:36 op3 /kernel: kbd0 at atkbd0
Feb 23 06:07:36 op3 /kernel: vga0: <Generic ISA VGA> at port
0x3c0−0x3df iomem 0xa0000−0xbffff on isa0
Feb 23 06:07:36 op3 /kernel: sc0: <System console> at flags 0x100 on
isa0
Feb 23 06:07:36 op3 /kernel: sc0: VGA <16 virtual consoles, flags=0x300>
Feb 23 06:07:36 op3 /kernel: APIC_IO: Testing 8254 interrupt delivery
Feb 23 06:07:36 op3 /kernel: APIC_IO: Broken MP table detected: 8254 is
not connected to IOAPIC #0 intpin 2
Feb 23 06:07:36 op3 /kernel: APIC_IO: routing 8254 via 8259 and IOAPIC
#0 intpin 0
Feb 23 06:07:36 op3 /kernel: IP packet filtering initialized, divert
disabled, rule−based forwarding enabled, default to accept, logging
limited to 100 packets/entry by default
Feb 23 06:07:36 op3 /kernel: DUMMYNET initialized (011031)
Feb 23 06:07:36 op3 /kernel: aacd0: <RAID 5> on aac0
Feb 23 06:07:36 op3 /kernel: aacd0: 559993MB (1146866176 sectors)
Feb 23 06:07:36 op3 /kernel: Mounting root from ufs:/dev/aacd0s1a
Feb 23 06:07:36 op3 /kernel: SMP: AP CPU #1 Launched!
Feb 23 06:07:36 op3 /kernel: SMP: AP CPU #2 Launched!
Feb 23 06:07:36 op3 /kernel: SMP: AP CPU #3 Launched!
Feb 23 06:07:36 op3 /kernel: WARNING: / was not properly dismounted
Feb 23 06:07:36 op3 /kernel: Swap zone entries reduced from 233016 to
46027.
/etc/sysctl.conf:
net.inet.icmp.icmplim=2000
kern.ipc.somaxconn=8096
net.inet.ip.portrange.last=8000
kern.ipc.shmmax=409600000
kern.ipc.maxsockbuf=1048576
net.inet.tcp.sendspace=65535
net.inet.tcp.recvspace=32768
net.inet.udp.recvspace=655350
net.inet.ip.intr_queue_maxlen=100
vfs.vmiodirenable=1
net.inet.tcp.mssdflt=1460
net.inet.accf.http.parsehttpversion=0
net.inet.tcp.rfc1644=0
net.inet.tcp.rfc1323=1
net.inet.tcp.keepidle=600000
net.inet.ip.rtexpire=10
kern.ps_showallprocs=0
kern.logsigexit=0
machdep.hlt_logical_cpus=0
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net.inet.tcp.slowstart_flightsize=4
vfs.hirunningspace=5242880
kern.ipc.shm_use_phys=1
/boot/loader.conf
# cat /boot/loader.conf
# −− sysinstall generated deltas −− #
net.inet.tcp.tcbhashsize=16384
#hw.physmem="2048M"
userconfig_script_load="YES"
MYKERNCONF:
makeoptions    DEBUG=−g                #Build kernel with gdb(1) debug
symbols
machine         i386
cpu                     I686_CPU
ident           MYKERNCONF
maxusers        256
options         NMBCLUSTERS=65536
options         INET                     #InterNETworking
#options        INET6                    #IPv6 communications protocols
options         FFS                      #Berkeley Fast Filesystem
options         FFS_ROOT                 #FFS usable as root device
[keep this!]
options         SOFTUPDATES              #Enable FFS soft updates support
options         MFS                      #Memory Filesystem
options         MD_ROOT                  #MD is a potential root device
options         MSDOSFS                  #MSDOS Filesystem
options         CD9660                   #ISO 9660 Filesystem
options         CD9660_ROOT              #CD−ROM usable as root, CD9660
required
options         PROCFS                   #Process filesystem
options         COMPAT_43                #Compatible with BSD 4.3 [KEEP
THIS!]
options         SCSI_DELAY=5000          #Delay (in ms) before probing
SCSI
options         UCONSOLE                 #Allow users to grab the console
options         USERCONFIG               #boot −c editor
options         VISUAL_USERCONFIG        #visual boot −c editor
options         KTRACE                   #ktrace(1) support
options         SYSVSHM                  #SYSV−style shared memory
options         SYSVMSG                  #SYSV−style message queues
options         SYSVSEM                  #SYSV−style semaphores
options         P1003_1B                 #Posix P1003_1B real−time
extensions
options         _KPOSIX_PRIORITY_SCHEDULING
options         ICMP_BANDLIM             #Rate limit bad replies
options         KBD_INSTALL_CDEV         # install a CDEV entry in /dev
options         ACCEPT_FILTER_HTTP       # We are pushing real bandwidth
here
# To make an SMP kernel, the next two are needed
options         SMP                      # Symmetric MultiProcessor
Kernel
options         APIC_IO                  # Symmetric (APIC) I/O
options         IPFIREWALL
options         IPFIREWALL_FORWARD
options         IPFIREWALL_VERBOSE
options         IPFIREWALL_VERBOSE_LIMIT=100
options         IPFIREWALL_DEFAULT_TO_ACCEPT    #allow everything by
default
options     DUMMYNET
device          aac
options         AAC_COMPAT_LINUX
device          isa
```

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device          eisa
device          pci
device          fdc0    at isa? port IO_FD1 irq 6 drq 2
device          fd0     at fdc0 drive 0
device          fd1     at fdc0 drive 1
# ATA and ATAPI devices
device          scbus           # SCSI bus (required)
device          da              # Direct Access (disks)
device          pass            # Passthrough device (direct SCSI
access)
# atkbdc0 controls both the keyboard and the PS/2 mouse
device          atkbdc0 at isa? port IO_KBD
device          atkbd0  at atkbdc? irq 1
device          psm0    at atkbdc? irq 12
device          vga0    at isa?
pseudo−device   splash
device          sc0     at isa? flags 0x100
# Floating point support − do not disable.
device          npx0    at nexus? port IO_NPX irq 13
device          bge             # Broadcom gig−e
device          miibus          # MII bus support
pseudo−device   loop            # Network loopback
pseudo−device   ether           # Ethernet support
#pseudo−device  sl      1       # Kernel SLIP
#pseudo−device  ppp     1       # Kernel PPP
#pseudo−device  tun             # Packet tunnel.
pseudo−device   pty             # Pseudo−ttys (telnet etc)
pseudo−device   md              # Memory "disks"
pseudo−device   snp     3       # Snoop device
pseudo−device   bpf             #Berkeley packet filter
−−Phil Rosenthal
ISPrime, Inc.
```

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