AACRAID Driver for Linux (take two)

Introduction

The aacraid driver adds support for Adaptec (http://www.adaptec.com)
RAID controllers. This is a major rewrite from the original
Adaptec supplied driver. It has significantly cleaned up both the code
and the running binary size (the module is less than half the size of
the original).

Supported Cards/Chipsets

```
        PCI ID (pci.ids)        OEM     Product
        9005:0285:9005:0285     Adaptec 2200S (Vulcan)
        9005:0285:9005:0286     Adaptec 2120S (Crusader)
        9005:0285:9005:0287     Adaptec 2200S (Vulcan-2m)
        9005:0285:9005:0288     Adaptec 3230S (Harrier)
        9005:0285:9005:0289     Adaptec 3240S (Tornado)
        9005:0285:9005:028a     Adaptec 2020ZCR (Skyhawk)
        9005:0285:9005:028b     Adaptec 2025ZCR (Terminator)
        9005:0286:9005:028c     Adaptec 2230S (Lancer)
        9005:0286:9005:028c     Adaptec 2230SLP (Lancer)
        9005:0286:9005:028d     Adaptec 2130S (Lancer)
        9005:0285:9005:028e     Adaptec 2020SA (Skyhawk)
        9005:0285:9005:028f     Adaptec 2025SA (Terminator)
        9005:0285:9005:0290     Adaptec 2410SA (Jaguar)
        9005:0285:103c:3227     Adaptec 2610SA (Bearcat HP release)
        9005:0285:9005:0293     Adaptec 21610SA (Corsair-16)
        9005:0285:9005:0296     Adaptec 2240S (SabreExpress)
        9005:0285:9005:0292     Adaptec 2810SA (Corsair-8)
        9005:0285:9005:0297     Adaptec 4005 (AvonPark)
        9005:0285:9005:0298     Adaptec 4000 (BlackBird)
        9005:0285:9005:0299     Adaptec 4800SAS (Marauder-X)
        9005:0285:9005:029a     Adaptec 4805SAS (Marauder-E)
        9005:0286:9005:029b     Adaptec 2820SA (Intruder)
        9005:0286:9005:029c     Adaptec 2620SA (Intruder)
        9005:0286:9005:029d     Adaptec 2420SA (Intruder HP release)
        9005:0286:9005:02ac     Adaptec 1800 (Typhoon44)
        9005:0285:9005:02b5     Adaptec 5445 (Voodoo44)
        9005:0285:15d9:02b5     SMC     AOC-USAS-S4i
        9005:0285:9005:02b6     Adaptec 5805 (Voodoo80)
        9005:0285:15d9:02b6     SMC     AOC-USAS-S8i
        9005:0285:9005:02b7     Adaptec 5085 (Voodoo08)
        9005:0285:9005:02bb     Adaptec 3405 (Marauder40LP)
        9005:0285:9005:02bc     Adaptec 3805 (Marauder80LP)
        9005:0285:9005:02c7     Adaptec 3085 (Marauder08ELP)
        9005:0285:9005:02bd     Adaptec 31205 (Marauder120)
        9005:0285:9005:02be     Adaptec 31605 (Marauder160)
        9005:0285:9005:02c3     Adaptec 51205 (Voodoo120)
        9005:0285:9005:02c4     Adaptec 51605 (Voodoo160)
        9005:0285:15d9:02c9     SMC     AOC-USAS-S4iR
        9005:0285:15d9:02ca     SMC     AOC-USAS-S8iR
        9005:0285:9005:02ce     Adaptec 51245 (Voodoo124)
        9005:0285:9005:02cf     Adaptec 51645 (Voodoo164)
        9005:0285:9005:02d0     Adaptec 52445 (Voodoo244)
        9005:0285:9005:02d1     Adaptec 5405 (Voodoo40)
```

```
9005:0285:15d9:02d2    SMC      AOC-USAS-S8i-LP
9005:0285:15d9:02d3    SMC      AOC-USAS-S8iR-LP
9005:0285:9005:02d4    Adaptec  ASR-2045 (Voodoo04 Lite)
9005:0285:9005:02d5    Adaptec  ASR-2405 (Voodoo40 Lite)
9005:0285:9005:02d6    Adaptec  ASR-2445 (Voodoo44 Lite)
9005:0285:9005:02d7    Adaptec  ASR-2805 (Voodoo80 Lite)
9005:0285:9005:02d8    Adaptec  5405Z (Voodoo40 BLBU)
9005:0285:9005:02d9    Adaptec  5445Z (Voodoo44 BLBU)
9005:0285:9005:02da    Adaptec  5805Z (Voodoo80 BLBU)
1011:0046:9005:0364    Adaptec  5400S (Mustang)
1011:0046:9005:0365    Adaptec  5400S (Mustang)
9005:0287:9005:0800    Adaptec  Themisto (Jupiter)
9005:0200:9005:0200    Adaptec  Themisto (Jupiter)
9005:0286:9005:0800    Adaptec  Callisto (Jupiter)
1011:0046:9005:1364    Dell     PERC 2/QC (Quad Channel, Mustang)
1011:0046:9005:1365    Dell     PERC 2/QC (Quad Channel, Mustang)
1028:0001:1028:0001    Dell     PERC 2/Si (Iguana)
1028:0003:1028:0003    Dell     PERC 3/Si (SlimFast)
1028:0002:1028:0002    Dell     PERC 3/Di (Opal)
1028:0004:1028:0004    Dell     PERC 3/SiF (Iguana)
1028:0004:1028:00d0    Dell     PERC 3/DiF (Iguana)
1028:0002:1028:00d1    Dell     PERC 3/DiV (Viper)
1028:0002:1028:00d9    Dell     PERC 3/DiL (Lexus)
1028:000a:1028:0106    Dell     PERC 3/DiJ (Jaguar)
1028:000a:1028:011b    Dell     PERC 3/DiD (Dagger)
1028:000a:1028:0121    Dell     PERC 3/DiB (Boxster)
9005:0285:1028:0287    Dell     PERC 320/DC (Vulcan)
9005:0285:1028:0291    Dell     CERC 2 (DellCorsair)
1011:0046:103c:10c2    HP       NetRAID-4M (Mustang)
9005:0285:17aa:0286    Legend   S220 (Crusader)
9005:0285:17aa:0287    Legend   S230 (Vulcan)
9005:0285:9005:0290    IBM      ServeRAID 7t (Jaguar)
9005:0285:1014:02F2    IBM      ServeRAID 8i (AvonPark)
9005:0286:1014:9540    IBM      ServeRAID 8k/8k-14 (AuroraLite)
9005:0286:1014:9580    IBM      ServeRAID 8k/8k-18 (Aurora)
9005:0285:1014:034d    IBM      ServeRAID 8s (Marauder-E)
9005:0286:9005:029e    ICP      ICP9024RO (Lancer)
9005:0286:9005:029f    ICP      ICP9014RO (Lancer)
9005:0286:9005:02a0    ICP      ICP9047MA (Lancer)
9005:0286:9005:02a1    ICP      ICP9087MA (Lancer)
9005:0285:9005:02a4    ICP      ICP9085LI (Marauder-X)
9005:0285:9005:02a5    ICP      ICP5085BR (Marauder-E)
9005:0286:9005:02a6    ICP      ICP9067MA (Intruder-6)
9005:0285:9005:02b2    ICP      (Voodoo 8 internal 8 external)
9005:0285:9005:02b8    ICP      ICP5445SL (Voodoo44)
9005:0285:9005:02b9    ICP      ICP5085SL (Voodoo80)
9005:0285:9005:02ba    ICP      ICP5805SL (Voodoo08)
9005:0285:9005:02bf    ICP      ICP5045BL (Marauder40LP)
9005:0285:9005:02c0    ICP      ICP5085BL (Marauder80LP)
9005:0285:9005:02c8    ICP      ICP5805BL (Marauder08ELP)
9005:0285:9005:02c1    ICP      ICP5125BR (Marauder120)
9005:0285:9005:02c2    ICP      ICP5165BR (Marauder160)
9005:0285:9005:02c5    ICP      ICP5125SL (Voodoo120)
9005:0285:9005:02c6    ICP      ICP5165SL (Voodoo160)
9005:0286:9005:02ab             (Typhoon40)
9005:0286:9005:02ad             (Aurora ARK)
```

```
        9005:0286:9005:02ae            (Aurora Lite ARK)
        9005:0285:9005:02b0            (Sunrise Lake ARK)
        9005:0285:9005:02b1    Adaptec (Voodoo 8 internal 8 external)
        9005:0285:108e:7aac    SUN     STK RAID REM (Voodoo44 Coyote)
        9005:0285:108e:0286    SUN     STK RAID INT (Cougar)
        9005:0285:108e:0287    SUN     STK RAID EXT (Prometheus)
        9005:0285:108e:7aae    SUN     STK RAID EM (Narvi)
```

People

Alan Cox <alan@lxorguk.ukuu.org.uk>
Christoph Hellwig <hch@infradead.org>   (updates for new-style PCI probing and
SCSI host registration,

                                         small cleanups/fixes)

Matt Domsch <matt_domsch@dell.com>   (revision ioctl, adapter messages)
Deanna Bonds   (non-DASD support, PAE fibs and 64 bit,
added new adaptec controllers

interface to use new error handler,   added new ioctls, changed scsi

outstanding commands to a container)   increased the number of fibs and

                                        (fixed 64bit and 64G memory model,
changed confusing naming convention
                                         where fibs that go to the hardware are
consistently called hw_fibs and
                                         not just fibs like the name of the
driver tracking structure)
Mark Salyzyn <Mark_Salyzyn@adaptec.com> Fixed panic issues and added some new
product ids for upcoming hbas. Performance tuning, card failover and bug
mitigations.
Achim Leubner <Achim_Leubner@adaptec.com>

Original Driver

Adaptec Unix OEM Product Group

Mailing List
----
linux-scsi@vger.kernel.org (Interested parties troll here)
Also note this is very different to Brian's original driver
so don't expect him to support it.
Adaptec does support this driver. Contact Adaptec tech support or
aacraid@adaptec.com

Original by Brian Boerner February 2001
Rewritten by Alan Cox, November 2001