

[PATCH 473] HP300 core updates

Source: <http://linux.derkeiler.com/Mailing-Lists/Kernel/2004-10/10220.html>

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To: Linus Torvalds <torvalds@osdl.org>, Andrew Morton <akpm@osdl.org>

Update of HP300 core support to use bootinfo etc. (from Kars de Jong)

Signed-off-by: Kars de Jong <jongk@linux-m68k.org>

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```
--- linux-2.6.10-rc1/arch/m68k/hp300/config.c 2003-05-05 22:35:59.000000000 +0200
+++ linux-m68k-2.6.10-rc1/arch/m68k/hp300/config.c 2004-07-14 13:17:56.000000000 +0200
@@ -7,56 +7,272 @@
 * called by setup.c.
 */
```

```
+#include <linux/config.h>
+#include <linux/types.h>
+#include <linux/mm.h>
+#include <linux/kd.h>
+#include <linux/tty.h>
+#include <linux/console.h>
+#include <linux/interrupt.h>
+#include <linux/module.h>
#include <linux/init.h>
+#include <linux/string.h>
+#include <linux/kernel.h>
+#include <linux/console.h>
+
+#include <asm/bootinfo.h>
#include <asm/machdep.h>
#include <asm/blinken.h>
-#include <asm/hwtest.h> /* hwreg_present() */
+#include <asm/io.h> /* readb() and writeb() */
+#include <asm/hp300hw.h>
+#include <asm/rtc.h>
```

```
#include "ints.h"
#include "time.h"
```

```
+unsigned long hp300_model;
+unsigned long hp300_uart_scode = -1;
```

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```
+unsigned char ledstate;
+
+static char s_hp330[] __initdata = "330";
+static char s_hp340[] __initdata = "340";
+static char s_hp345[] __initdata = "345";
+static char s_hp360[] __initdata = "360";
+static char s_hp370[] __initdata = "370";
+static char s_hp375[] __initdata = "375";
+static char s_hp380[] __initdata = "380";
+static char s_hp385[] __initdata = "385";
+static char s_hp400[] __initdata = "400";
+static char s_hp425t[] __initdata = "425t";
+static char s_hp425s[] __initdata = "425s";
+static char s_hp425e[] __initdata = "425e";
+static char s_hp433t[] __initdata = "433t";
+static char s_hp433s[] __initdata = "433s";
+static char *hp300_models[] __initdata = {
+ [HP_320] = NULL,
+ [HP_330] = s_hp330,
+ [HP_340] = s_hp340,
+ [HP_345] = s_hp345,
+ [HP_350] = NULL,
+ [HP_360] = s_hp360,
+ [HP_370] = s_hp370,
+ [HP_375] = s_hp375,
+ [HP_380] = s_hp380,
+ [HP_385] = s_hp385,
+ [HP_400] = s_hp400,
+ [HP_425T] = s_hp425t,
+ [HP_425S] = s_hp425s,
+ [HP_425E] = s_hp425e,
+ [HP_433T] = s_hp433t,
+ [HP_433S] = s_hp433s,
+};
+
+static char hp300_model_name[13] = "HP9000/";
+
+extern void hp300_reset(void);
+extern irqreturn_t (*hp300_default_handler[])(int, void *, struct pt_regs *);
+extern int show_hp300_interrupts(struct seq_file *, void *);
+#ifdef CONFIG_SERIAL_8250_CONSOLE
+extern int hp300_setup_serial_console(void) __init;
+#endif
+
+int __init hp300_parse_bootinfo(const struct bi_record *record)
+{
+ int unknown = 0;
+ const unsigned long *data = record->data;
+
+ switch (record->tag) {
+ case BI_HP300_MODEL:
```

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```
+ hp300_model = *data;
+ break;
+
+ case BI_HP300_UART_SCODE:
+ hp300_uart_scode = *data;
+ break;
+
+ case BI_HP300_UART_ADDR:
+ /* serial port address: ignored here */
+ break;
+
+ default:
+ unknown = 1;
+ }
+
+ return unknown;
+}

#ifdef CONFIG_HEARTBEAT
static void hp300_pulse(int x)
{
- if (x)
- blinken_leds(0xfe);
- else
- blinken_leds(0xff);
+ if (x)
+ blinken_leds(0x10, 0);
+ else
+ blinken_leds(0, 0x10);
}
#endif

static void hp300_get_model(char *model)
{
- strcpy(model, "HP9000/300");
+ strcpy(model, hp300_model_name);
+}
+
+#define RTCBASE 0xf0420000
+#define RTC_DATA 0x1
+#define RTC_CMD 0x3
+
+#define RTC_BUSY 0x02
+#define RTC_DATA_RDY 0x01
+
+#define rtc_busy() (in_8(RTCBASE + RTC_CMD) & RTC_BUSY)
+#define rtc_data_available() (in_8(RTCBASE + RTC_CMD) & RTC_DATA_RDY)
+#define rtc_status() (in_8(RTCBASE + RTC_CMD))
+#define rtc_command(x) out_8(RTCBASE + RTC_CMD, (x))
+#define rtc_read_data() (in_8(RTCBASE + RTC_DATA))
+#define rtc_write_data(x) out_8(RTCBASE + RTC_DATA, (x))
```

```

+
+#define RTC_SETREG 0xe0
+#define RTC_WRITEREG 0xc2
+#define RTC_READREG 0xc3
+
+#define RTC_REG_SEC2 0
+#define RTC_REG_SEC1 1
+#define RTC_REG_MIN2 2
+#define RTC_REG_MIN1 3
+#define RTC_REG_HOUR2 4
+#define RTC_REG_HOUR1 5
+#define RTC_REG_WDAY 6
+#define RTC_REG_DAY2 7
+#define RTC_REG_DAY1 8
+#define RTC_REG_MON2 9
+#define RTC_REG_MON1 10
+#define RTC_REG_YEAR2 11
+#define RTC_REG_YEAR1 12
+
+#define RTC_HOUR1_24HMODE 0x8
+
+#define RTC_STAT_MASK 0xf0
+#define RTC_STAT_RDY 0x40
+
+static inline unsigned char hp300_rtc_read(unsigned char reg)
+{
+ unsigned char s, ret;
+ unsigned long flags;
+
+ local_irq_save(flags);
+
+ while (rtc_busy());
+ rtc_command(RTC_SETREG);
+ while (rtc_busy());
+ rtc_write_data(reg);
+ while (rtc_busy());
+ rtc_command(RTC_READREG);
+
+ do {
+ while (!rtc_data_available());
+ s = rtc_status();
+ ret = rtc_read_data();
+ } while ((s & RTC_STAT_MASK) != RTC_STAT_RDY);
+
+ local_irq_restore(flags);
+
+ return ret;
+}
+
+static inline unsigned char hp300_rtc_write(unsigned char reg,
+ unsigned char val)

```

```

+{
+ unsigned char s, ret;
+ unsigned long flags;
+
+ local_irq_save(flags);
+
+ while (rtc_busy());
+ rtc_command(RTC_SETREG);
+ while (rtc_busy());
+ rtc_write_data((val << 4) | reg);
+ while (rtc_busy());
+ rtc_command(RTC_WRITEREG);
+ while (rtc_busy());
+ rtc_command(RTC_READREG);
+
+ do {
+ while (!rtc_data_available());
+ s = rtc_status();
+ ret = rtc_read_data();
+ } while ((s & RTC_STAT_MASK) != RTC_STAT_RDY);
+
+ local_irq_restore(flags);
+
+ return ret;
+}
+
+static int hp300_hwclk(int op, struct rtc_time *t)
+{
+ if (!op) { /* read */
+ t->tm_sec = hp300_rtc_read(RTC_REG_SEC1) * 10 +
+ hp300_rtc_read(RTC_REG_SEC2);
+ t->tm_min = hp300_rtc_read(RTC_REG_MIN1) * 10 +
+ hp300_rtc_read(RTC_REG_MIN2);
+ t->tm_hour = (hp300_rtc_read(RTC_REG_HOUR1) & 3) * 10 +
+ hp300_rtc_read(RTC_REG_HOUR2);
+ t->tm_wday = -1;
+ t->tm_mday = hp300_rtc_read(RTC_REG_DAY1) * 10 +
+ hp300_rtc_read(RTC_REG_DAY2);
+ t->tm_mon = hp300_rtc_read(RTC_REG_MON1) * 10 +
+ hp300_rtc_read(RTC_REG_MON2) - 1;
+ t->tm_year = hp300_rtc_read(RTC_REG_YEAR1) * 10 +
+ hp300_rtc_read(RTC_REG_YEAR2);
+ if (t->tm_year <= 69)
+ t->tm_year += 100;
+ } else {
+ hp300_rtc_write(RTC_REG_SEC1, t->tm_sec / 10);
+ hp300_rtc_write(RTC_REG_SEC2, t->tm_sec % 10);
+ hp300_rtc_write(RTC_REG_MIN1, t->tm_min / 10);
+ hp300_rtc_write(RTC_REG_MIN2, t->tm_min % 10);
+ hp300_rtc_write(RTC_REG_HOUR1,
+ ((t->tm_hour / 10) & 3) | RTC_HOUR1_24HMODE);

```

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```
+ hp300_rtc_write(RTC_REG_HOUR2, t->tm_hour % 10);
+ hp300_rtc_write(RTC_REG_DAY1, t->tm_mday / 10);
+ hp300_rtc_write(RTC_REG_DAY2, t->tm_mday % 10);
+ hp300_rtc_write(RTC_REG_MON1, (t->tm_mon + 1) / 10);
+ hp300_rtc_write(RTC_REG_MON2, (t->tm_mon + 1) % 10);
+ if (t->tm_year >= 100)
+ t->tm_year -= 100;
+ hp300_rtc_write(RTC_REG_YEAR1, t->tm_year / 10);
+ hp300_rtc_write(RTC_REG_YEAR2, t->tm_year % 10);
+ }
+
+ return 0;
+}
+
+static unsigned int hp300_get_ss(void)
+{
+ return hp300_rtc_read(RTC_REG_SEC1) * 10 +
+ hp300_rtc_read(RTC_REG_SEC2);
+}

void __init config_hp300(void)
{
- mach_sched_init = hp300_sched_init;
- mach_init_IRQ = hp300_init_IRQ;
- mach_request_irq = hp300_request_irq;
- mach_free_irq = hp300_free_irq;
- mach_get_model = hp300_get_model;
- mach_get_irq_list = show_hp300_interrupts;
- mach_gettimeoffset = hp300_gettimeoffset;
- mach_default_handler = &hp300_default_handler;
- mach_reset = hp300_reset;
+ mach_sched_init = hp300_sched_init;
+ mach_init_IRQ = hp300_init_IRQ;
+ mach_request_irq = hp300_request_irq;
+ mach_free_irq = hp300_free_irq;
+ mach_get_model = hp300_get_model;
+ mach_get_irq_list = show_hp300_interrupts;
+ mach_gettimeoffset = hp300_gettimeoffset;
+ mach_default_handler = &hp300_default_handler;
+ mach_hwclk = hp300_hwclk;
+ mach_get_ss = hp300_get_ss;
+ mach_reset = hp300_reset;
+ #ifdef CONFIG_HEARTBEAT
- mach_heartbeat = hp300_pulse;
+ mach_heartbeat = hp300_pulse;
+ #endif
+ #ifdef CONFIG_DUMMY_CONSOLE
- conswitchp = &dummy_con;
+ conswitchp = &dummy_con;
+ #endif
+ mach_max_dma_address = 0xffffffff;
}
```

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```
+
+ if (hp300_model >= HP_330 && hp300_model <= HP_433S && hp300_model != HP_350) {
+ printk(KERN_INFO "Detected HP9000 model %s\n", hp300_models[hp300_model-HP_320]);
+ strcat(hp300_model_name, hp300_models[hp300_model-HP_320]);
+ }
+ else {
+ panic("Unknown HP9000 Model");
+ }
+#ifdef CONFIG_SERIAL_8250_CONSOLE
+ hp300_setup_serial_console();
+#endif
- mach_max_dma_address = 0xffffffff;
}
--- linux-2.6.10-rc1/arch/m68k/hp300/intc.c 2004-04-05 15:09:02.000000000 +0200
+++ linux-m68k-2.6.10-rc1/arch/m68k/hp300/intc.c 2004-07-14 13:17:56.000000000 +0200
@@ -57,14 +57,21 @@
    return IRQ_HANDLED;
}

+static irqreturn_t hp300_badint(int irq, void *dev_id, struct pt_regs *fp)
+{
+ num_spurious += 1;
+ return IRQ_NONE;
+}
+
+irqreturn_t (*hp300_default_handler[SYS_IRQS])(int, void *, struct pt_regs *) = {
- [0] = hp300_int_handler,
+ [0] = hp300_badint,
    [1] = hp300_int_handler,
    [2] = hp300_int_handler,
    [3] = hp300_int_handler,
    [4] = hp300_int_handler,
    [5] = hp300_int_handler,
    [6] = hp300_int_handler,
+ [7] = hp300_int_handler
};

/* dev_id had better be unique to each handler because it's the only way we have
--- linux-2.6.10-rc1/arch/m68k/hp300/reboot.S 2001-10-22 01:53:57.000000000 +0200
+++ linux-m68k-2.6.10-rc1/arch/m68k/hp300/reboot.S 2004-07-14 13:17:56.000000000 +0200
@@ -13,23 +13,4 @@

    .globl hp300_reset
hp300_reset:
- .chip 68030
- oriw #0x0700,%sr /* cli() */
- movel hp300_phys_ram_base, %d1
- movel #0, %d0
- movec %d0, %vbr /* reset vector table */
- lea zero, %a0
- lea 1f, %a1
```

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```
- add %d1, %a0
- add %d1, %a1
- pmove %tc, %a0@
- bclr #7, %a0@
- pmove %a0@, %tc /* goodbye MMU */
- jmp %a1 @
-1: movel #0x808, %d0
- movec %d0, %cacr /* cache off */
- moveb #0, 0x1ffff
- movel #0x1a4, %a0
- jmp %a0@
-
-zero: .quad 0
+ jmp hp300_reset
--- linux-2.6.10-rc1/arch/m68k/hp300/time.c 2004-03-12 14:34:07.000000000 +0100
+++ linux-m68k-2.6.10-rc1/arch/m68k/hp300/time.c 2004-07-14 13:17:56.000000000 +0200
@@ -17,6 +17,7 @@
#include <asm/io.h>
#include <asm/system.h>
#include <asm/traps.h>
+#include <asm/blinken.h>
#include "ints.h"

/* Clock hardware definitions */
@@ -38,11 +39,13 @@

static irqreturn_t hp300_tick(int irq, void *dev_id, struct pt_regs *regs)
{
- unsigned long tmp;
- irqreturn_t (*vector)(int, void *, struct pt_regs *) = dev_id;
- in_8(CLOCKBASE + CLKSР);
- asm volatile ("movpw %1@(5),%0" : "=d" (tmp) : "a" (CLOCKBASE));
- return vector(irq, NULL, regs);
+ unsigned long tmp;
+ irqreturn_t (*vector)(int, void *, struct pt_regs *) = dev_id;
+ in_8(CLOCKBASE + CLKSР);
+ asm volatile ("movpw %1@(5),%0" : "=d" (tmp) : "a" (CLOCKBASE));
+ /* Turn off the network and SCSI leds */
+ blinken_leds(0, 0xe0);
+ return vector(irq, NULL, regs);
}

unsigned long hp300_gettimeoffset(void)
--- linux-2.6.10-rc1/arch/m68k/kernel/head.S 2004-04-05 15:09:05.000000000 +0200
+++ linux-m68k-2.6.10-rc1/arch/m68k/kernel/head.S 2004-07-14 13:17:57.000000000 +0200
@@ -24,6 +24,7 @@
** 1998/08/30 David Kilzer: Added support for font_desc structures
** for linux-2.1.115
** 9/02/11 Richard Zidlicky: added Q40 support (initial vesion 99/01/01)
+** 2004/05/13 Kars de Jong: Finalised HP300 support
**
```

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```
** This file is subject to the terms and conditions of the GNU General Public
** License. See the file README.legal in the main directory of this archive
@@ -313,9 +314,6 @@
#ifdef CONFIG_Q40
.globl q40_mem_cptr
#endif
-#ifdef CONFIG_HP300
-.globl hp300_phys_ram_base
-#endif

CPUYPE_040 = 1 /* indicates an 040 */
CPUYPE_060 = 2 /* indicates an 060 */
@@ -467,7 +465,7 @@
func_define mmu_get_page_table_entry,2
func_define mmu_print
func_define get_new_page
-#ifdef CONFIG_HP300
+if defined(CONFIG_HP300) || defined(CONFIG_APOLLO)
func_define set_leds
#endif

@@ -594,6 +592,7 @@
    .long MACH_BVME6000, BVME6000_BOOTI_VERSION
    .long MACH_MAC, MAC_BOOTI_VERSION
    .long MACH_Q40, Q40_BOOTI_VERSION
+ .long MACH_HP300, HP300_BOOTI_VERSION
    .long 0
1: jra __start

@@ -605,65 +604,6 @@
    jra __start
__INIT
ENTRY(__start)
-
-#ifdef CONFIG_HP300
-/* This is a hack. The HP NetBSD bootloader loads us at an arbitrary
- address (apparently 0xff002000 in practice) which is not good if we need
- to be able to map this to VA 0x1000. We could do it with pagetables but
- a better solution seems to be to relocate the kernel in physical memory
- before we start.
-
- So, we copy the entire kernel image (code+data+bss) down to the 16MB
- boundary that marks the start of RAM. This is slightly tricky because
- we must not overwrite the copying code itself. :-) */
-
-/* 15/5/98. The start address of physical RAM changes depending on how much
- RAM is present. This is actually a blessing in disguise as it provides
- a way for us to work out the RAM size rather than hardwiring it. */
-
- lea %pc@(_start),%a0
- movel %a0,%d6
```

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```
- and #0xffff0000, %d6
- lea %pc@(hp300_phys_ram_base),%a0
- movel %d6, %a0@
- movel %pc@(L(custom)),%a3
- moveb #0xfe,%d7
- moveb %d7,%a3@(0x1fff)
- lea %pc@(Lcopystart),%a0
- lea %pc@(Lcopyend),%a1
- movel %d6,%a2 /* Start of physical RAM */
-1: moveb %a0@+,%d0
- moveb %d0,%a2@+
- cmpl %a0,%a1
- jbne 1b
- movel %d6,%a2
- moveb #0xfd,%d7
- moveb %d7,%a3@(0x1fff)
- lea %pc@(_stext),%a0
- lea %pc@(_end),%a1
- jmp %a2@
-
-Lcopystart:
- moveb #0xf7,%d7
- moveb %d7,%a3@(0x1fff)
- movel %d6,%a2 /* Start of kernel */
- add #0x1000,%a2
-1: moveb %a0@+,%d0
- moveb %d0,%a2@+
- cmpl %a0,%a1
- jbne 1b
- moveb #0,%d7
- moveb %d7,%a3@(0x1fff)
- movel %d6,%a0
- addl #Lstart1,%a0
- jmp %a0@
-Lcopyend:
-
-Lstart1:
- moveb #0x3f,%d7
- moveb %d7,%a3@(0x1fff)
-#endif /* CONFIG_HP300 */
-
/*
 * Setup initial stack pointer
 */
@@ -672,8 +612,6 @@
/*
 * Record the CPU and machine type.
 */
-
-#ifndef CONFIG_HP300
    get_bi_record BI_MACHTYPE
```

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```
    lea %pc@(m68k_machtype),%a1
    movel %a0@,%a1 @
@@ -689,23 +627,8 @@
    get_bi_record BI_CPUTYPE
    lea %pc@(m68k_cputype),%a1
    movel %a0@,%a1 @
-#else /* CONFIG_HP300 */
- /* FIXME HP300 doesn't use bootinfo yet */
- movel #MACH_HP300,%d4
- lea %pc@(m68k_machtype),%a0
- movel %d4,%a0@
- movel #FPU_68881,%d0
- lea %pc@(m68k_fputype),%a0
- movel %d0,%a0@
- movel #MMU_68030,%d0
- lea %pc@(m68k_mmutype),%a0
- movel %d0,%a0@
- movel #CPU_68030,%d0
- lea %pc@(m68k_cputype),%a0
- movel %d0,%a0@

- leds(0x1)
-#endif /* CONFIG_HP300 */
+ leds 0x1

#ifdef CONFIG_MAC
/*
@@ -956,6 +879,26 @@

#endif

+#ifdef CONFIG_HP300
+ is_not_hp300(L(nothp))
+
+ /* Get the address of the UART for serial debugging */
+ get_bi_record BI_HP300_UART_ADDR
+ tstl %d0
+ jbmi 1f
+ movel %a0@,%d3
+ lea %pc@(L(uartbase)),%a0
+ movel %d3,%a0@
+ get_bi_record BI_HP300_UART_SCODE
+ tstl %d0
+ jbmi 1f
+ movel %a0@,%d3
+ lea %pc@(L(uart_scode)),%a0
+ movel %d3,%a0@
+1:
+L(nothp):
+#endif
+
```

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```
/*
 * Initialize serial port
 */
@@ -979,9 +922,7 @@

    putc '\n'
    putc 'A'
-#ifdef CONFIG_HP300
- leds(0x2)
-#endif /* CONFIG_HP300 */
+ leds 0x2
    dputn %pc@(L(cputype))
    dputn %pc@(m68k_supervisor_cachemode)
    dputn %pc@(m68k_phtable_cachemode)
@@ -1124,16 +1065,30 @@
#ifdef CONFIG_HP300
    is_not_hp300(L(nothp300))

-/* On the HP300, we map the ROM, INTIO and DIO regions (phys. 0x00xxxxxx)
- by mapping 32MB from 0xf0xxxxxx -> 0x00xxxxxx) using an 030 early
- termination page descriptor. The ROM mapping is needed because the LEDs
- are mapped there too. */
+/* On the HP300, we map the ROM, INTIO and DIO regions (phys. 0x00xxxxxx)
+ * by mapping 32MB (on 020/030) or 16 MB (on 040) from 0xf0xxxxxx -> 0x00xxxxxx).
+ * The ROM mapping is needed because the LEDs are mapped there too.
+ */
+
+ is_040(1f)

+ /*
+ * 030: Map the 32Meg range physical 0x0 upto logical 0xf000.0000
+ */
    mmu_map #0xf0000000,#0,#0x02000000,#_PAGE_NOCACHE030

-L(nothp300):
+ jbra L(mmu_init_done)

-#endif
+1:
+ /*
+ * 040: Map the 16Meg range physical 0x0 upto logical 0xf000.0000
+ */
+ mmu_map #0xf0000000,#0,#0x01000000,#_PAGE_NOCACHE_S
+
+ jbra L(mmu_init_done)
+
+L(nothp300):
+#endif /* CONFIG_HP300 */

#ifdef CONFIG_MVME147
```

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```
@@ -1480,15 +1435,23 @@
#ifdef CONFIG_HP300
    is_not_hp300(1f)
    /*
- * Fix up the custom register to point to the new location of the LEDs.
+ * Fix up the iobase register to point to the new location of the LEDs.
    */
- movel #0xf0000000,L(custom)
+ movel #0xf0000000,L(iobase)

    /*
    * Energise the FPU and caches.
    */
+ is_040(1f)
    movel #0x60,0xf05f400c
-1:
+ jbra 2f
+
+ /*
+ * 040: slightly different, apparently.
+ */
+1: movew #0,0xf05f400e
+ movew #0x64,0xf05f400e
+2:
#endif

#ifdef CONFIG_SUN3X
@@ -1585,7 +1548,6 @@

    movel ARG1,%d0
    lea %pc@(_end),%a0
-#ifndef CONFIG_HP300
1: tstw %a0@(BIR_TAG)
    jeq 3f
    cmpw %a0@(BIR_TAG),%d0
@@ -1599,7 +1561,6 @@
3: moveq #-1,%d0
    lea %a0@(BIR_SIZE),%a0
4:
-#endif /* CONFIG_HP300 */
func_return get_bi_record

@@ -3013,6 +2974,10 @@
/* We count on the PROM initializing SIO1 */
#endif

+#ifdef CONFIG_HP300
+/* We count on the boot loader initialising the UART */
+#endif
+
```

```

L(serial_init_done):
func_return serial_init

@@ -3205,9 +3170,31 @@
1: moveb %a1@(LSRB0),%d0
   andb #0x4,%d0
   beq 1b
+ jbra L(serial_putc_done)
2:
#endif

+#ifdef CONFIG_HP300
+ is_not_hp300(3f)
+ movl %pc@(L(iobase)),%a1
+ addl %pc@(L(uartbase)),%a1
+ movel %pc@(L(uart_scode)),%d1 /* Check the scode */
+ jmi 3f /* Unset? Exit */
+ cmpi #256,%d1 /* APCI scode? */
+ jeq 2f
+1: moveb %a1@(DCALSR),%d1 /* Output to DCA */
+ andb #0x20,%d1
+ beq 1b
+ moveb %d0,%a1@(DCADATA)
+ jbra L(serial_putc_done)
+2: moveb %a1@(APCILSR),%d1 /* Output to APCI */
+ andb #0x20,%d1
+ beq 2b
+ moveb %d0,%a1@(APCIDATA)
+ jbra L(serial_putc_done)
+3:
+#endif
+
L(serial_putc_done):
func_return serial_putc

@@ -3295,7 +3282,7 @@
   movel ARG1,%d0
#ifdef CONFIG_HP300
   is_not_hp300(1f)
- movel %pc@(L(custom)),%a0
+ movel %pc@(L(iobase)),%a0
   moveb %d0,%a0@(0x1ffff)
   jra 2f
#endif
@@ -3829,10 +3816,6 @@
__INITDATA
   .align 4

-#ifdef CONFIG_HP300
- hp300_phys_ram_base:
-#endif

```

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```

-
#if defined(CONFIG_ATARI) || defined(CONFIG_AMIGA) || \
    defined(CONFIG_HP300) || defined(CONFIG_APOLLO)
L(custom):
@@ -3924,6 +3907,17 @@
LCPUCTRL = 0x10100
#endif

+#if defined(CONFIG_HP300)
+DCADATA = 0x11
+DCALSR = 0x1b
+APCIDATA = 0x00
+APCILSR = 0x14
+L(uartbase):
+.long 0
+L(uart_scode):
+.long -1
+#endif
+
__FINIT
.data
.align 4
--- linux-2.6.10-rc1/arch/m68k/kernel/setup.c 2004-07-05 21:21:43.000000000 +0200
+++ linux-m68k-2.6.10-rc1/arch/m68k/kernel/setup.c 2004-07-14 13:17:57.000000000 +0200
@@ -110,6 +110,7 @@
extern int bvme6000_parse_bootinfo(const struct bi_record *);
extern int mvme16x_parse_bootinfo(const struct bi_record *);
extern int mvme147_parse_bootinfo(const struct bi_record *);
+extern int hp300_parse_bootinfo(const struct bi_record *);

extern void config_amiga(void);
extern void config_atari(void);
@@ -176,6 +177,8 @@
        unknown = mvme16x_parse_bootinfo(record);
        else if (MACH_IS_MVME147)
            unknown = mvme147_parse_bootinfo(record);
+ else if (MACH_IS_HP300)
+ unknown = hp300_parse_bootinfo(record);
        else
            unknown = 1;
    }
@@ -205,20 +208,8 @@
    int i;
    char *p, *q;

- if (!MACH_IS_HP300) {
- /* The bootinfo is located right after the kernel bss */
- m68k_parse_bootinfo((const struct bi_record *)&_end);
- } else {
- /* FIXME HP300 doesn't use bootinfo yet */
- extern unsigned long hp300_phys_ram_base;

```

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```
- unsigned long hp300_mem_size = 0xffffffff-hp300_phys_ram_base;
- m68k_cputype = CPU_68030;
- m68k_fputype = FPU_68882;
- m68k_memory[0].addr = hp300_phys_ram_base;
- /* 0.5M fudge factor */
- m68k_memory[0].size = hp300_mem_size-512*1024;
- m68k_num_memory++;
- }
+ /* The bootinfo is located right after the kernel bss */
+ m68k_parse_bootinfo((const struct bi_record *)&_end);

    if (CPU_IS_040)
        m68k_is040or060 = 4;
--- linux-2.6.10-rc1/include/asm-m68k/blinken.h 2001-10-22 01:50:47.000000000 +0200
+++ linux-m68k-2.6.10-rc1/include/asm-m68k/blinken.h 2004-07-14 13:19:47.000000000 +0200
@@ -13,15 +13,20 @@
#define _M68K_BLINKEN_H

#include <asm/setup.h>
#include <asm/io.h>

#define HP300_LEDS 0xf001ffff

-static __inline__ void blinken_leds(int x)
+extern unsigned char ledstate;
+
+static __inline__ void blinken_leds(int on, int off)
{
- if (MACH_IS_HP300)
- {
- *((volatile unsigned char *)HP300_LEDS) = (x);
- }
+ if (MACH_IS_HP300)
+ {
+ ledstate |= on;
+ ledstate &= ~off;
+ out_8(HP300_LEDS, ~ledstate);
+ }
}

#endif
--- linux-2.6.10-rc1/include/asm-m68k/bootinfo.h 2004-04-05 15:09:08.000000000 +0200
+++ linux-m68k-2.6.10-rc1/include/asm-m68k/bootinfo.h 2004-07-14 13:19:47.000000000 +0200
@@ -213,7 +213,13 @@

#define BI_APOLLO_MODEL 0x8000 /* model (u_long) */

+ /*
+ * HP300-specific tags
+ */
```

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```
+ #define BI_HP300_MODEL 0x8000 /* model (u_long) */
+ #define BI_HP300_UART_SCODE 0x8001 /* UART select code (u_long) */
+ #define BI_HP300_UART_ADDR 0x8002 /* phys. addr of UART (u_long) */

/*
 * Stuff for bootinfo interface versioning
@@ -255,6 +261,7 @@
# define MVME16x_BOOTI_VERSION MK_BI_VERSION( 2, 0 )
# define BVME6000_BOOTI_VERSION MK_BI_VERSION( 2, 0 )
# define Q40_BOOTI_VERSION MK_BI_VERSION( 2, 0 )
+ #define HP300_BOOTI_VERSION MK_BI_VERSION( 2, 0 )

# ifdef BOOTINFO_COMPAT_1_0

--- linux-2.6.10-rc1/include/asm-m68k/hp300hw.h 1970-01-01 01:00:00.000000000 +0100
+++ linux-m68k-2.6.10-rc1/include/asm-m68k/hp300hw.h 2004-07-09 22:52:30.000000000 +0200
@@ -0,0 +1,25 @@
+ #ifndef _M68K_HP300HW_H
+ #define _M68K_HP300HW_H
+
+ extern unsigned long hp300_model;
+
+ /* This information was taken from NetBSD */
+ #define HP_320 (0) /* 16MHz 68020+HP MMU+16K external cache */
+ #define HP_330 (1) /* 16MHz 68020+68851 MMU */
+ #define HP_340 (2) /* 16MHz 68030 */
+ #define HP_345 (3) /* 50MHz 68030+32K external cache */
+ #define HP_350 (4) /* 25MHz 68020+HP MMU+32K external cache */
+ #define HP_360 (5) /* 25MHz 68030 */
+ #define HP_370 (6) /* 33MHz 68030+64K external cache */
+ #define HP_375 (7) /* 50MHz 68030+32K external cache */
+ #define HP_380 (8) /* 25MHz 68040 */
+ #define HP_385 (9) /* 33MHz 68040 */
+
+ #define HP_400 (10) /* 50MHz 68030+32K external cache */
+ #define HP_425T (11) /* 25MHz 68040 - model 425t */
+ #define HP_425S (12) /* 25MHz 68040 - model 425s */
+ #define HP_425E (13) /* 25MHz 68040 - model 425e */
+ #define HP_433T (14) /* 33MHz 68040 - model 433t */
+ #define HP_433S (15) /* 33MHz 68040 - model 433s */
+
+ #endif /* _M68K_HP300HW_H */
```

Gr{oetje,eeting}s,

Geert

```
--
Geert Uytterhoeven -- There's lots of Linux beyond ia32 -- geert@linux-m68k.org
In personal conversations with technical people, I call myself a hacker. But
when I'm talking to journalists I just say "programmer" or something like that.
-- Linus Torvalds
```

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