



connect

San Francisco 2015

SFO15-T3: Upstreaming 201

Presented by

Daniel Thompson

Date

Tuesday 22 September 2015

Event

SFO15

Overview

- Building on Upstreaming 101
- Example driven
 - Subjects/Commit Messages
 - Responding to Comments
 - Upstreaming a new platform
 - Upstreaming a new driver
- Treat this session like a workshop
 - Ask questions immediately

Submitting Patches - Subjects

For these reasons, the "summary" must be no more than 70-75 characters, and it must describe both what the patch changes, as well as why the patch might be necessary. It is challenging to be both succinct and descriptive, but that is what a well-written summary should do.

The "summary phrase" may be prefixed by tags enclosed in square brackets: **"Subject: [PATCH tag] <summary phrase>"**. The tags are not considered part of the summary phrase, but describe how the patch should be treated. Common tags might include a version descriptor if the multiple versions of the patch have been sent out in response to comments (i.e., "v1, v2, v3"), or "RFC" to indicate a request for comments. If there are four patches in a patch series the individual patches may be numbered like this: 1/4, 2/4, 3/4, 4/4. This assures that developers understand the order in which the patches should be applied and that they have reviewed or applied all of the patches in the patch series.



connect

San Francisco 2015

Submitting Patches - Commits

The explanation body will be committed to the permanent source changelog, so should make sense to a competent reader who has long since forgotten the immediate details of the discussion that might have led to this patch. Including symptoms of the failure which the patch addresses (kernel log messages, oops messages, etc.) is especially useful for people who might be searching the commit logs looking for the applicable patch. If a patch fixes a compile failure, it may not be necessary to include `_all_` of the compile failures; just enough that it is likely that someone searching for the patch can find it. As in the "summary phrase", it is important to be both succinct as well as descriptive.

Commit Messages - Advice on style

```
Subject: Re: [PATCH 2/3] panic: improve panic_timeout calculation
From: Ingo Molnar <mingo@xxxxxxxxxxx>
Date: Mon, 11 Nov 2013 12:32:18 +0100
```

Felipe Contreras <felipe.contreras@xxxxxxxxxxx> wrote:

```
> We want to calculate the blinks per second, and instead of making it 5
> (1000 / (3600 / 18)), let's make it 4, so the user can see two blinks
> per second.
```

Please use the customary changelog style we use in the kernel:

**" Current code does (A), this has a problem when (B).
We can improve this doing (C), because (D)."**

Summary/Commit Messages - Good

Subject: **[PATCH] ARM: dts: imx6qdl-sabresd: SDHC ports are 8 bit-wide**
From: Fabio Estevam fabio.estevam@freescale.com
Date: Tue Sep 17 12:46:23 EDT 2013

On imx6qdl-sabresd the SDHC2 and SDHC3 are 8 bit-wide, so pass the bus-width property to reflect that.

Otherwise the mmc driver will operate with the default bus-width value of 4.

Signed-off-by: Fabio Estevam <fabio.estevam@freescale.com>

arch/arm/boot/dts/imx6qdl-sabresd.dtsi | 2 ++
1 file changed, 2 insertions(+)



connect

San Francisco 2015

Don't ignore comments

From: Mark Brown <>

Subject: Re: [PATCH v2 3/8] regulator: MT6397: Add support for MT6397 regulator

Date: Fri, 28 Nov 2014 15:22:47 +0000

```
...
> + np = of_node_get(pdev->dev.parent->of_node);
> + if (!np)
> +     return -EINVAL;
> +
> + regulators = of_get_child_by_name(np, "regulators");
```

To further repeat my previous review comments:

| Define `regulators_node` and `of_match` in the regulator desc and you can
| remove both this table and all your DT matching code in the driver, the
| core will handle it for you.

Please don't ignore review comments.



connect

San Francisco 2015

Clarifying comments

Subject: Re: [PATCH v9 2/4] Documentation: Add documentation for APM X-Gene SoC SATA host controller DTS binding

From: Loc Ho <lho@xxxxxxx>

Date: Wed, 15 Jan 2014 12:04:02 -0800

>> +- clocks : Reference to the clock entry.

>> +- phys : PHY reference with parameter 0.

>

> The specific value of the phy-specifier shouldn't matter to this
> binding. What should matter is what it logically corresponds to.

**I not quite following this. Are you suggest that I drop the value 0.
In the binding, one needs to specify the mode of operation - 0 is for
SATA. Can you explain more?**

-Loc



connect

San Francisco 2015

Incorporating comments

Subject: Re: [PATCH 4/5] ARM: tegra: Add host1x, dc and hdmi to Tegra114 device tree

From: Mikko Perttunen

Date: Wed, 28 Aug 2013 07:54:47 -0700

On 08/28/2013 03:25 PM, Thierry Reding wrote:

> * PGP Signed by an unknown key

>

> On Wed, Aug 28, 2013 at 01:40:58PM +0300, Mikko Perttunen wrote:

>> Add host1x, dc (display controller) and hdmi devices to Tegra114 device tree.

>

> "DC" and "HDMI".

Will fix.



connect

San Francisco 2015

Responding to comments - Don't do this

Subject Re: [Arm-netbook] getting allwinner SoC support upstream (was Re: Uploading linux (3.9.4-1))
From "luke.leighton" <>

On Thu, Jun 6, 2013 at 1:01 AM, Tomasz Figa <tomasz.figa@gmail.com> wrote:

> I don't see any other solution here than moving all the Allwinner code to
> DT (as it has been suggested in this thread several times already), as
> this is the only hardware description method supported by ARM Linux.

i repeat again: please state, explicitly and unequivocally **that you - linux kernel developers - are happy that the reach of linux and gnu/linux OSes is dramatically reduced due to this intransigent position.**

or, tomasz, please state that you, tomasz, represent each and every one of the linux kernel developers so that i do not need to keep asking.



connect

San Francisco 2015

Understanding arm-soc

- Divide patches going to arm-soc:
 - next/fixes
 - next/cleanup
 - next/soc
 - next/drivers
 - next/boards
 - next/dt
- Usually the platform maintainer worries the most about this
- Individual contributors should know this to break up their commits to fit these categories
- More details:
 - http://elinux.org/images/4/48/Elc2013_Johansson.pdf



connect

San Francisco 2015

Upstreaming a new platform - SoC foo

- Logically split the work
 - mach-foo/ family-specific ops (arm-soc team)
 - clocksource driver (Daniel Lezcano/Thomas Gleixner)
 - irq controller driver (Thomas Gleixner)
 - Device Tree binding (DT team / arm-soc team)
 - multi_v7_defconfig or add new defconfig (arm-soc team)
 - DTS to enable platform foo (arm-soc team)
- Split to divide amongst maintainer trees
- Split to divide according to arm-soc categories

Upstreaming a new platform - ARMv8 SoC

- Logically split the work
 - ~~mach-foo/ family-specific ops (arm-soc team)~~
 - clocksource driver (Daniel Lezcano/Thomas Gleixner)
 - ~~irq_controller driver (Thomas Gleixner)~~
 - Device Tree binding (DT team / arm-soc team)
 - ~~multi_v7_defconfig or add new defconfig (arm-soc team)~~
 - DTS to enable platform foo (arm-soc team)
- Split to divide amongst maintainer trees
- Split to divide according to arm-soc categories

Allwinner A1X Upstreaming - Cover Letter

Subject: [PATCH 0/6] Add basic support for Allwinner A1X SoCs

From: Maxime Ripard <maxime.ripard@xxxxxxxxxxxxxxxxxxxxxx>

Date: Thu, 15 Nov 2012 23:46:19 +0100

Hi,

You'll find in this patchset the initial support for Allwinner A10 and A13 SoCs from Allwinner. Since the internal name of these SoCs are sun4i and sun5i, the mach- directory is named sunxi.

You can find these SoCs in the Cubieboard, the A13-olinuxino or the Melee A1000.

Both SoCs should work fine, as the A13 is a trimmed down version of the A10, but it has only been tested on a A13-Olinuxino from Olimex.

Support is quite minimal for now, since it only includes timer and IRQ controller drivers, so we can only boot to userspace through initramfs. Support for the other peripherals on these SoCs will come eventually.

Allwinner A1X Upstream - Comments

Subject: Re: [PATCH 4/6] ARM: sunxi: Add earlyprintk support
From: Thomas Petazzoni <thomas.petazzoni@xxxxxxxxxxxxxxxxxxxxxxxx>
Date: Fri, 16 Nov 2012 11:41:36 +0100

On Thu, 15 Nov 2012 23:46:23 +0100, Maxime Ripard wrote:

...

```
> +#define SUNXI_UART1_PHYS_BASE 0x01c28400  
> +#define SUNXI_UART1_VIRT_BASE 0xf1c28400
```

Maybe:

```
#ifndef CONFIG_DEBUG_SUNXI_UART1  
#define SUNXI_UART_DEBUG_PHYS_BASE 0x01c28400  
#define SUNXI_UART_DEBUG_VIRT_BASE 0xf1c28400  
#endif
```



connect

San Francisco 2015

Allwinner A1X Upstreaming - Changelog

Subject: [PATCH v2 0/7] Add basic support for Allwinner A1X SoCs
From: Maxime Ripard <maxime.ripard@xxxxxxxxxxxxxxxxxxxx>
Date: Fri Nov 16 16:20:21 EST 2012

You'll find in this patchset the initial support for Allwinner A10 and A13 SoCs from Allwinner. Since the internal name of these SoCs are sun4i and sun5i, the mach- directory is named sunxi.

...

Changes from v1:

- Changed the earlyprintk support to add a more generic mechanism, since boards can have both the debug UART on UART0 or UART1
- Small fixes in the dt: moved the memory node to the dtsi, fixed the memory size on A13
- Simplified the irq controller driver as suggested by Stefan Roese
- Removed the hardcoded clock frequency in the timer to a fixed rate clock using clk framework
- Added a README file to the documentation to mention the supported SoCs and the related datasheet



connect

San Francisco 2015

Allwinner A1X Upstreaming - Acceptance

Subject: Re: [PATCH v2 0/7] Add basic support for Allwinner A1X SoCs
From: Arnd Bergman <arnd@xxxxxxxxxxxxxxxxxxxx>
Date: Fri Nov 16 23:10:21 EST 2012

On Friday 16 November 2012, Maxime Ripard wrote:

> Le 16/11/2012 22:40, Arnd Bergmann a écrit :
> > Looks all great!
> >
> > Are you planning to send a pull request, or should we apply the
> > port from patches?
>
> Whatever you prefer, just tell me.
>

Generally, git pull requests are preferred, ideally using a signed tag that has a changeset description for the git history.

We can handle patches as well, but they cause slightly more work.



connect

San Francisco 2015

Allwinner A1X Upstreaming - request-pull

Subject: [GIT PULL] ARM: sunxi: Add basic support for Allwinner SoCs
From: Maxime Ripard <maxime.ripard@xxxxxxxxxxxxxxxxxxxx>
Date: Fri Nov 16 17:56:50 EST 2012

Arnd, Olof,

Here is a pull request to add the basic support for Allwinner A1X SoCs.

Thanks,
Maxime

The following changes since commit 77b67063bb6bce6d475e910d3b886a606d0d91f7:

Linux 3.7-rc5 (2012-11-11 13:44:33 +0100)

are available in the git repository at:

git://github.com/mripard/linux.git tags/tags/sunxi-support-for-3.8

for you to fetch changes up to 1b106699647b56313bac707e12e7ad67180cb147:

ARM: sunxi: Add entry to MAINTAINERS (2012-11-16 21:56:53 +0100)

...



connect

San Francisco 2015

Upstreaming a driver - watchdog

- Logically split the work
 - Device Tree binding (DT team / Wim Van Sebroeck)
 - Any watchdog framework changes (Wim Van Sebroeck)
 - Driver and build plumbing (Wim Van Sebroeck)
 - defconfig update, if applicable (mach-* maintainer or arm-soc team)
 - DTS additions to enable driver (mach-* maintainer)
- Split to divide amongst maintainer trees
- Split to divide framework updates, specific driver features, and/or individual bug fixes



connect

San Francisco 2015

Creating a driver series - commits

```
$ git log --oneline
1234567 watchdog: bcm281xx: Watchdog Driver
7654321 ARM: bcm281xx: watchdog configuration
```

[If we had a DT binding and associated DTS for this series]

```
$ git log --oneline
0000000 watchdog: bcm281xx: add DT binding
1234567 watchdog: bcm281xx: Watchdog Driver
7654321 ARM: bcm281xx: watchdog configuration
8888888 ARM: dts: bcm281xx: add watchdog DT support
```

Posting a driver series - create patches

What we want

Subject: [PATCH 0/2] watchdog: bcm281xx: Watchdog Driver

Subject: [PATCH 1/2] watchdog: bcm281xx: Watchdog Driver

Subject: [PATCH 2/2] ARM: bcm281xx: watchdog configuration

Command

```
$ git format-patch -cover-letter -o /tmp/bcm281xx_wd \  
    --to ... --to ... --cc ... --cc ... --cc ... v4.3-rc1..
```

Results

```
$ ls /tmp/bcm281xx_wd
```

0000-cover-letter.patch

0001-watchdog-bcm281xx-watchdog-driver.patch

0002-ARM-bcm281xx-watchdog-configuration.patch



connect

San Francisco 2015

Posting a driver series - cover letter

From: Markus Mayer <markus.mayer@linaro.org>
Subject: [PATCH 0/2] watchdog: bcm281xx: Watchdog Driver
Date: Fri, 8 Nov 2013 12:44:46 -0800

This series introduces the watchdog driver for the BCM281xx family of mobile SoCs.

Markus Mayer (2):

watchdog: bcm281xx: Watchdog Driver

ARM: bcm281xx: watchdog configuration

```
arch/arm/configs/bcm_defconfig | 3 +
drivers/watchdog/Kconfig        | 21 +++
drivers/watchdog/Makefile       | 1 +
drivers/watchdog/bcm_kona_wdt.c | 399
+++++
4 files changed, 424 insertions(+)
create mode 100644 drivers/watchdog/bcm_kona_wdt.c
```



connect

San Francisco 2015

Posting a driver series - watchdog driver

From: Markus Mayer <markus.mayer@linaro.org>
Subject: [PATCH 1/2] watchdog: bcm281xx: Watchdog Driver
Date: Fri, 8 Nov 2013 12:44:47 -0800

This commit adds support for the watchdog timer used on the BCM281xx family of SoCs.

Signed-off-by: Markus Mayer <markus.mayer@linaro.org>
Reviewed-by: Matt Porter <matt.porter@linaro.org>

```
drivers/watchdog/Kconfig          |    21 +++
drivers/watchdog/Makefile         |     1 +
drivers/watchdog/bcm_kona_wdt.c   |   399
+++++
3 files changed, 421 insertions(+)
create mode 100644 drivers/watchdog/bcm_kona_wdt.c
diff --git a/drivers/watchdog/Kconfig b/drivers/watchdog/Kconfig
index d1d53f3..59013f6 100644
--- a/drivers/watchdog/Kconfig
+++ b/drivers/watchdog/Kconfig
```



connect

San Francisco 2015

Posting a driver - Comments

From: Markus Mayer <markus.mayer@linaro.org>
Subject: Re: [PATCH 1/2] watchdog: bcm281xx: Watchdog Driver
Date: Tue, 12 Nov 2013 16:08:56 -0800

On 12 November 2013 15:39, One Thousand Gnoms <gnomes@lxorguk.ukuu.org.uk> wrote:

```
...
>> +     val = secure_register_read(wdt->base + SECWD OG_CTRL_REG, &timeout);
>> +     if (!timeout) {
>> +         val &= ~SECWD OG_RES_MASK;
>> +         val |= wdt->resolution << SECWD OG_CLKS_SHIFT;
>> +         writel_relaxed(val, wdt->base + SECWD OG_CTRL_REG);
>> +     } else {
>> +         ret = -EAGAIN;
>
```

> This is I think the wrong choice of return. If the register fails to read
> then presumably the device is b*ggared ? In which case return something
> like -EIO and log something nasty.

>
> EAGAIN has fairly specific semantics around signals and/or specific
> requests for an I/O operation not to wait.

I will change that based on Guenter's and your comments.



connect

San Francisco 2015

Posting a driver - Reposting

From: Markus Mayer <markus.mayer@linaro.org>
Subject: [PATCH v2 0/2] watchdog: bcm281xx: Watchdog Driver
Date: Fri, 15 Nov 2013 12:57:59 -0800

This is version 2 of the watchdog driver for the BCM281xx family of mobile SoCs.

Changes since version 1:

- Added module name to "help" section in Kconfig
- A few cosmetic code simplifications and fixes
- Removed most dev_info() calls and changed the remaining ones to dev_dbg()
- Renamed SECWDOG_WD_LOAD_FLAG_MASK to SECWDOG_WD_LOAD_FLAG
- Added some comments to secure_register_read() and struct bcm_kona_wdt
- Added delay to secure_register_read()
- Reduced maximum retry loop from 10000 to 1000
- Introduced "busy_count" variable to count how often secure_register_read() gets stalled; this is available through debugfs
- Simplified secure_register_read() to return -ETIMEDOUT rather than using a variable parameter to indicate a timeout error

...



connect

San Francisco 2015

Posting a driver series - acceptance

Date: Sat, 28 Dec 2013 21:40:39 +0100

From: Wim Van Sebroeck <>

Subject: Re: [PATCH v5 0/2] watchdog: bcm281xx: Watchdog Driver

Hi Markus,

> This is version 5 of the watchdog driver for the BCM281xx family of
> mobile SoCs.

**I applied the patches but without the BCM_KONA_WDT_DEBUG part, because I still have some questions about it. So what is left is the following patch:
...**



connect

San Francisco 2015

Posting a driver: get_maintainer.pl

```
$ scripts/get_maintainer.pl -f drivers/mmc/host/sdhci-foo.
```

```
c
```

```
Ulf Hansson <ulf.hansson@linaro.org> (maintainer:  
MULTIMEDIA CARD (MMC), SECURE DIGITAL (SD) AND...)
```

```
"GitAuthor: Daniel Thompson" <daniel.thompson@linaro.org>  
(authored:1/1=100%,added_lines:1/1=100%)
```

```
linux-mmc@vger.kernel.org (open list:MULTIMEDIA CARD  
(MMC), SECURE DIGITAL (SD) AND...)
```

```
linux-kernel@vger.kernel.org (open list)
```



connect

San Francisco 2015

Posting a driver: get_maintainer.pl

```
$ scripts/get_maintainer.pl 0001-mmc-sdhci-Dummy-driver-for-foo.patch
```

```
Ulf Hansson <ulf.hansson@linaro.org> (maintainer:MULTIMEDIA CARD (MMC),  
SECURE DIGITAL (SD) AND...,commit_signer:18/19=95%,commit_signer:7/8=88%)
```

```
Jean Delvare <jdelvare@suse.de> (commit_signer:4/19=21%,authored:4/19=21%)
```

```
Alim Akhtar <alim.akhtar@samsung.com> (commit_signer:3/19=16%,removed_lines:1/15=7%)
```

```
Andrew Bresticker <abrestic@chromium.org> (commit_signer:2/19=11%,authored:2/19=11%,removed_lines:2/15=13%)
```

```
Stephen Boyd <sboyd@codeaurora.org> (commit_signer:2/19=11%,removed_line:8/15=53%,commit_signer:2/8=25%,  
removed_lines:1/1=100%)
```

```
Ondrej Zary <linux@rainbow-software.org> (authored:1/19=5%,authored:1/8=12%,added_lines:1/7=14%)
```

```
Chaotian Jing <chaotian.jing@mediatek.com> (authored:1/19=5%,authored:1/8=12%,added_lines:1/7=14%)
```

```
Scott Branden <sbranden@broadcom.com> (authored:1/19=5%,added_lines:14/81=17%,authored:1/8=12%,added_lines:1/7=14%)
```

```
Vincent Yang <vincent.yang.fujitsu@gmail.com> (added_lines:11/81=14%,commit_signer:1/8=12%)
```

```
Srinivas Kandagatla <srinivas.kandagatla@linaro.org> (added_lines:11/81=14%,authored:1/8=12%,added_lines:1/7=14%)
```

```
addy ke <addy.ke@rock-chips.com> (added_lines:9/81=11%,commit_signer:1/8=12%)
```

```
Daniel Thompson <daniel.thompson@linaro.org> (added_lines:9/81=11%,removed_lines:1/15=7%,authored:1/8=12%,added_lines:1/7=14%,authored:1/1=100%,added_lines:1/1=100%)
```

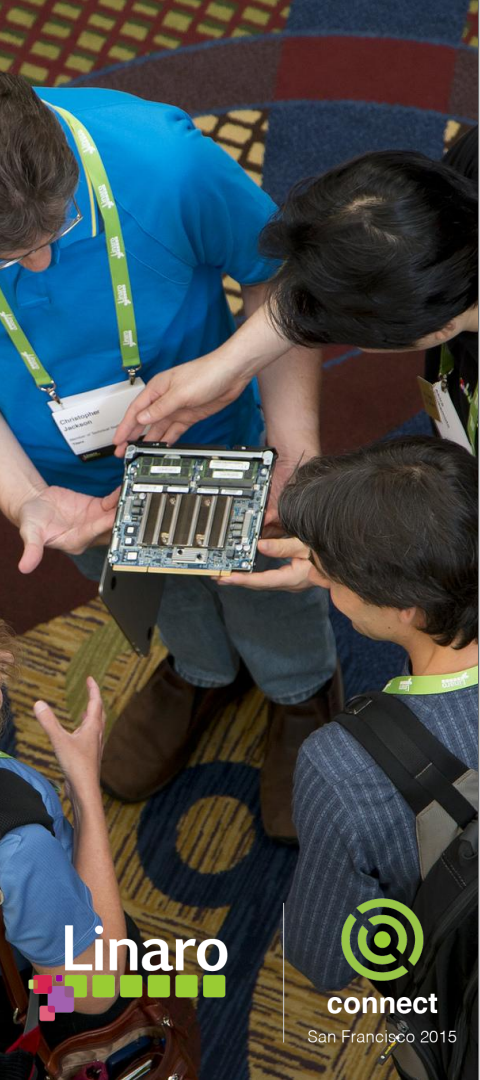
```
Kevin Hao <haokexin@gmail.com> (removed_lines:2/15=13%)
```

```
Ray Jui <rjui@broadcom.com> (commit_signer:1/8=12%)
```

```
linux-kernel@vger.kernel.org (open list)
```

```
linux-mmc@vger.kernel.org (open list:MULTIMEDIA CARD (MMC), SECURE DIGITAL (SD) AND...)
```





Linaro



connect

San Francisco 2015