

Re: [patch/rfc 2/4] pcf875x I2C GPIO expander driver

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On Friday 30 November 2007, Jean Delvare wrote:

So the user-space interface would be part of the generic GPIO infrastructure? I like the idea.

I thought that would make sense too! :) Someone would need to write the code though. Having such a mechanism would provide another "carrot" to migrate folk towards the gpiolib core.

I think adding a gpiochip primitive to mark a (potential) GPIO as invalid would support the converse of `/sys/kernel/debug/gpio`. Invalid GPIOs include pins set up for non-GPIO usage (like being used for MMC or MII), or not wired up on a given board. Pins that were valid as GPIOs and not requested by a kernel driver might reasonably be managed by userspace code.

```
+#include <linux/pcf857x.h>
```

I suspect that there will be many more such header files in the future.

Would it make sense to move them to `include/linux/gpio`?

I was thinking more like `<linux/i2c/...>` myself. There are many more I2C chips than GPIO expanders.

But most i2c chip drivers don't need a header file. Or is this going to change with the new-style i2c drivers?

I expect it will become a lot more common. Remember that legacy I2C drivers *couldn't* get any board-specific config data; that's

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been problematic, since it meant the drivers themselves ended up with lots of board-specific cruft. That prevented many drivers from going upstream at all. (As I mentioned about pcf8574 code, although in that case the problem was worsened by lack of any reusable kernel interface for such GPIO signals.)

Along the same line, I am wondering if it would make sense to put the various GPIO drivers in drivers/gpio.

Could be. Right now we have three "GPIO expander" drivers using the new "gpiolib" framework: pcf875x and pca9539 for I2C, and mcp23s08 for SPI. There are many more that *could* be used with Linux boxes. And there are other drivers/XYZ directories that are (currently) that small. Maybe gpiolib should go upstream like that, and lib/gpiolib should be in drivers/gpio too...

However, keep in mind that lots of chips export a few GPIOs but don't have that as their core functionality ... one example is the drivers/i2c/chips/tps65010 driver. So it'd never be the case that GPIO drivers only live in that directory.

– Dave

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