
Subject: Re: Re: [PATCH/RFC] kthread API conversion for dvb_frontend and av7110

Posted by [Cedric Le Goater](#) on Wed, 13 Dec 2006 15:55:12 GMT

[View Forum Message](#) <> [Reply to Message](#)

Herbert Poetzl wrote:

> On Tue, Dec 12, 2006 at 03:58:16PM -0700, Eric W. Biederman wrote:

>> Andrew de Quincey <adq_dvb@lidskialf.net> writes:

>>

>>> [snip]

>>>

>>>> correct, will fix that up in the next round

>>>>

>>>> thanks for the feedback,

>>>> Herbert

>>> Hi - the conversion looks good to me.. I can't really offer any more

>>> constructive suggestions beyond what Cedric has already said.

>>>

>>> Theres another thread in dvb_ca_en50221.c that could be converted as well

>>> though, hint hint ;)

>>>

>>> Apologies for the delay in this reply - I've been hibernating for a bit.

>> Guys where are we at on this conversion?

I said I would but I didn't have much time yet?

however, I didn't see any big issue. no semaphore like in dvb_frontend.c.
just some kill(0) that looks harmless.

> I can take a look at it in the next few days, but

> I have no hardware to test that, so it would be

> good to get in contact with somebody who does

neither do I.

below is an updated version of herbert's dvb_frontend.c patch for 2.6.19-mm1

thanks,

C.

From: Herbert Poetzl <herbert@13thfloor.at>

Okay, as I promised, I had a first shot at the dvb kernel_thread to kthread API port, and here is the result, which is running fine here since yesterday, including module load/unload and software suspend (which doesn't work as expected

with or without this patch :), I didn't convert the dvb_ca_en50221 as I do not have such an interface, but if the conversion process is fine with the v4l-dvb maintainers, it should not be a problem to send a patch for that too ...

best,
Herbert

Signed-off-by: Herbert Poetzl <herbert@13thfloor.at>

```
---
drivers/media/dvb/dvb-core/dvb_frontend.c | 69 ++++++++-----
drivers/media/dvb/ttpci/av7110.c          | 29 +++++-----
drivers/media/dvb/ttpci/av7110.h          | 1
3 files changed, 37 insertions(+), 62 deletions(-)
```

Index: 2.6.19-mm1/drivers/media/dvb/dvb-core/dvb_frontend.c

```
=====
--- 2.6.19-mm1.orig/drivers/media/dvb/dvb-core/dvb_frontend.c
+++ 2.6.19-mm1/drivers/media/dvb/dvb-core/dvb_frontend.c
@@ -36,6 +36,7 @@
#include <linux/list.h>
#include <linux/freezer.h>
#include <linux/jiffies.h>
+#include <linux/kthread.h>
#include <asm/processor.h>

#include "dvb_frontend.h"
@@ -100,7 +101,7 @@ struct dvb_frontend_private {
    struct semaphore sem;
    struct list_head list_head;
    wait_queue_head_t wait_queue;
- pid_t thread_pid;
+ struct task_struct *thread;
    unsigned long release_jiffies;
    unsigned int exit;
    unsigned int wakeup;
@@ -508,19 +509,11 @@ static int dvb_frontend_thread(void *dat
    struct dvb_frontend *fe = data;
    struct dvb_frontend_private *fepriv = fe->frontend_priv;
    unsigned long timeout;
- char name [15];
    fe_status_t s;
    struct dvb_frontend_parameters *params;

    dprintk("%s\n", __FUNCTION__);
```

```

- snprintf (name, sizeof(name), "kdvb-fe-%i", fe->dvb->num);
-
- lock_kernel();
- daemonize(name);
- sigfillset(&current->blocked);
- unlock_kernel();
-
fepriv->check_wrapped = 0;
fepriv->quality = 0;
fepriv->delay = 3*HZ;
@@ -534,14 +527,16 @@ static int dvb_frontend_thread(void *dat
    up(&fepriv->sem);    /* is locked when we enter the thread... */

    timeout = wait_event_interruptible_timeout(fepriv->wait_queue,
-        dvb_frontend_should_wakeup(fe),
-        fepriv->delay);
-    if (0 != dvb_frontend_is_exiting(fe)) {
+    dvb_frontend_should_wakeup(fe) || kthread_should_stop(),
+    fepriv->delay);
+
+    if (kthread_should_stop() || dvb_frontend_is_exiting(fe)) {
        /* got signal or quitting */
        break;
    }

-    try_to_freeze();
+    if (try_to_freeze())
+        continue;

    if (down_interruptible(&fepriv->sem))
        break;
@@ -591,7 +586,7 @@ static int dvb_frontend_thread(void *dat
    fe->ops.sleep(fe);
}

- fepriv->thread_pid = 0;
+ fepriv->thread = NULL;
    mb();

    dvb_frontend_wakeup(fe);
@@ -600,7 +595,6 @@ static int dvb_frontend_thread(void *dat

static void dvb_frontend_stop(struct dvb_frontend *fe)
{
- unsigned long ret;
    struct dvb_frontend_private *fepriv = fe->frontend_priv;

    dprintk ("%s\n", __FUNCTION__);

```

```

@@ -608,33 +602,17 @@ static void dvb_frontend_stop(struct dvb
    fepriv->exit = 1;
    mb();

- if (!fepriv->thread_pid)
+ if (!fepriv->thread)
    return;

- /* check if the thread is really alive */
- if (kill_proc(fepriv->thread_pid, 0, 1) == -ESRCH) {
-     printk("dvb_frontend_stop: thread PID %d already died\n",
-         fepriv->thread_pid);
-     /* make sure the mutex was not held by the thread */
-     init_MUTEX (&fepriv->sem);
-     return;
- }
-
- /* wake up the frontend thread, so it notices that fe->exit == 1 */
- dvb_frontend_wakeup(fe);
-
- /* wait until the frontend thread has exited */
- ret = wait_event_interruptible(fepriv->wait_queue, 0 == fepriv->thread_pid);
- if (-ERESTARTSYS != ret) {
-     fepriv->state = FESTATE_IDLE;
-     return;
- }
+ kthread_stop(fepriv->thread);
+ init_MUTEX (&fepriv->sem);
+ fepriv->state = FESTATE_IDLE;

    /* paranoia check in case a signal arrived */
- if (fepriv->thread_pid)
-     printk("dvb_frontend_stop: warning: thread PID %d won't exit\n",
-         fepriv->thread_pid);
+ if (fepriv->thread)
+     printk("dvb_frontend_stop: warning: thread %p won't exit\n",
+         fepriv->thread);
}

s32 timeval_usec_diff(struct timeval lasttime, struct timeval curtime)
@@ -684,10 +662,11 @@ static int dvb_frontend_start(struct dvb
{
    int ret;
    struct dvb_frontend_private *fepriv = fe->frontend_priv;
+ struct task_struct *fe_thread;

    dprintk ("%s\n", __FUNCTION__);

```

```

- if (fepriv->thread_pid) {
+ if (fepriv->thread) {
    if (!fepriv->exit)
        return 0;
    else
@@ -701,18 +680,18 @@ static int dvb_frontend_start(struct dvb

    fepriv->state = FESTATE_IDLE;
    fepriv->exit = 0;
- fepriv->thread_pid = 0;
+ fepriv->thread = NULL;
    mb();

- ret = kernel_thread (dvb_frontend_thread, fe, 0);
-
- if (ret < 0) {
-     printk("dvb_frontend_start: failed to start kernel_thread (%d)\n", ret);
+ fe_thread = kthread_run(dvb_frontend_thread, fe,
+ "kdvb-fe-%i", fe->dvb->num);
+ if (IS_ERR(fe_thread)) {
+     ret = PTR_ERR(fe_thread);
+     printk("dvb_frontend_start: failed to start kthread (%d)\n", ret);
+     up(&fepriv->sem);
+     return ret;
+ }
- fepriv->thread_pid = ret;
-
+ fepriv->thread = fe_thread;
+     return 0;
+ }

```

Index: 2.6.19-mm1/drivers/media/dvb/ttpci/av7110.c

=====

--- 2.6.19-mm1.orig/drivers/media/dvb/ttpci/av7110.c

+++ 2.6.19-mm1/drivers/media/dvb/ttpci/av7110.c

@@ -51,6 +51,7 @@

#include <linux/firmware.h>

#include <linux/crc32.h>

#include <linux/i2c.h>

+#include <linux/kthread.h>

#include <asm/system.h>

@@@ -223,11 +224,10 @@@ static void recover_arm(struct av7110 *a

static void av7110_arm_sync(struct av7110 *av7110)

{

- av7110->arm_rmmod = 1;

```

- wake_up_interruptible(&av7110->arm_wait);
+ if (av7110->arm_thread)
+ kthread_stop(av7110->arm_thread);

- while (av7110->arm_thread)
- msleep(1);
+ av7110->arm_thread = NULL;
}

static int arm_thread(void *data)
@@ -238,17 +238,11 @@ static int arm_thread(void *data)

    dprintk(4, "%p\n", av7110);

- lock_kernel();
- daemonize("arm_mon");
- sigfillset(&current->blocked);
- unlock_kernel();
-
- av7110->arm_thread = current;
-
    for (;;) {
        timeout = wait_event_interruptible_timeout(av7110->arm_wait,
-            av7110->arm_rmmode, 5 * HZ);
-        if (-ERESTARTSYS == timeout || av7110->arm_rmmode) {
+            kthread_should_stop(), 5 * HZ);
+
+        if (-ERESTARTSYS == timeout || kthread_should_stop()) {
            /* got signal or told to quit*/
            break;
        }
    }
@@ -276,7 +270,6 @@ static int arm_thread(void *data)
    av7110->arm_errors = 0;
}

- av7110->arm_thread = NULL;
return 0;
}

@@ -2338,6 +2331,7 @@ static int __devinit av7110_attach(struc
    const int length = TS_WIDTH * TS_HEIGHT;
    struct pci_dev *pdev = dev->pci;
    struct av7110 *av7110;
+ struct task_struct *thread;
    int ret, count = 0;

    dprintk(4, "dev: %p\n", dev);
@@ -2622,9 +2616,12 @@ static int __devinit av7110_attach(struc

```

```
printk ("dvb-ttpci: Warning, firmware version 0x%04x is too old. "
"System might be unstable!\n", FW_VERSION(av7110->arm_app));
```

```
- ret = kernel_thread(arm_thread, (void *) av7110, 0);
- if (ret < 0)
+ thread = kthread_run(arm_thread, (void *) av7110, "arm_mon");
+ if (IS_ERR(thread)) {
+   ret = PTR_ERR(thread);
+   goto err_stop_arm_9;
+ }
+ av7110->arm_thread = thread;
```

```
/* set initial volume in mixer struct */
av7110->mixer.volume_left = volume;
```

Index: 2.6.19-mm1/drivers/media/dvb/ttpci/av7110.h

=====

--- 2.6.19-mm1.orig/drivers/media/dvb/ttpci/av7110.h

+++ 2.6.19-mm1/drivers/media/dvb/ttpci/av7110.h

@@ -205,7 +205,6 @@ struct av7110 {

```
    struct task_struct *arm_thread;
    wait_queue_head_t  arm_wait;
    u16    arm_loops;
- int    arm_rmmmod;
```

```
void    *debi_virt;
dma_addr_t  debi_bus;
```

Containers mailing list

Containers@lists.osdl.org

<https://lists.osdl.org/mailman/listinfo/containers>
