



THE LINUX FOUNDATION
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EUROPE

Things you need to know to submit a Linux kernel patch

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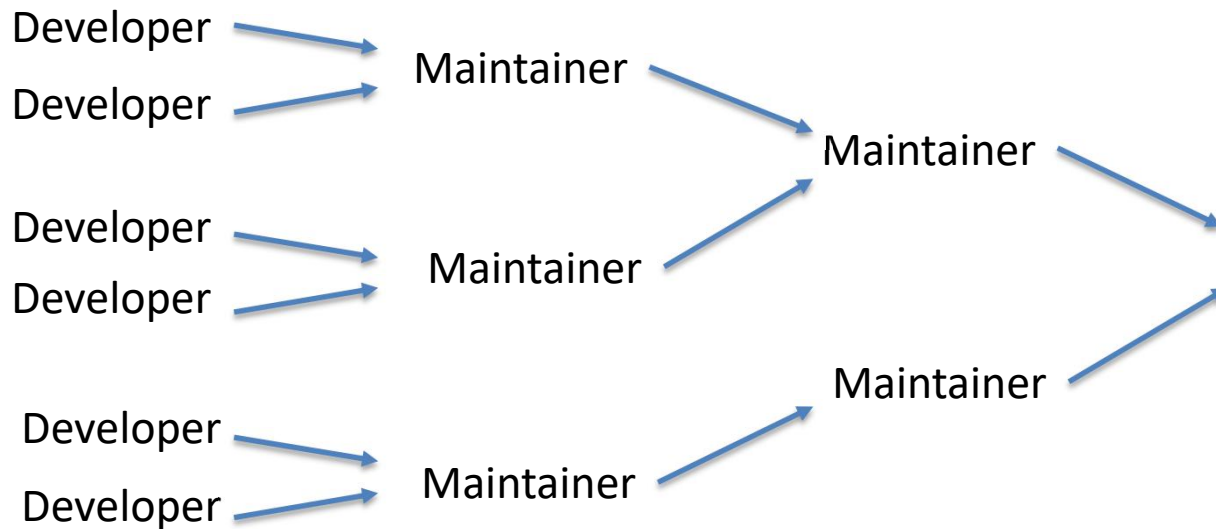


The Linux kernel

- One of the biggest and fastest moving open source project
- 53600 files, >2M Loc

Maintainer Model

15600 coders!



Contributing to the kernel

- **Step 1**

- Install Ubuntu/Debian

- Setup tools:

- Editor (Eg. vim, gedit etc)

- Email client (Eg. Mutt)

- VCS (git)

- ## Step 2

Linux kernel code repository

```
git clone -b staging-testing git://git.kernel.org/pub/scm/linux/kernel/git/gregkh/staging.git
```

Copy your current config

```
cp /boot/config-`uname -r`* .config
```

```
intern@ubuntu:~/git/kernels/staging$ ls
COPYING  Documentation  Kconfig      Makefile  arch  certs  drivers  fs      init  kernel  mm  s
amples  security  tools  virt
CREDITS  Kbuild      MAINTAINERS  README   block  crypto  firmware  include  ipc  lib    net  s
cripts  sound      usr
```

- Step 3

Build/Install your kernel

```
make -jX
```

```
sudo make modules_install install
```

- Step 4

- Make your branch

```
git checkout -b first-patch
```

-

Update your kernel

```
git fetch origin
```

```
git rebase origin/staging-testing
```

- Make changes **//TODO (brb!)**
- Re-Compile

- Step 5 - Get, set, go! ~> Commit, patch, email

```
git add <file>
```

```
git commit -s -v
```

```
git format-patch -o /tmp/ HEAD^
```



0001-xyz.patch

staging: media: davinci_vpfe: Use BIT macro instead of left shifting 1

This patch replaces left shifts on 1 with the BIT(x) macro, as suggested by checkpatch.pl.

This was done using coccinelle script:

```
@@
constant c;
@@
- (1 << c)
+ BIT(c)
```

Signed-off-by: sayli karnik <karniksayli1995@gmail.com>

Signed-off-by: Greg Kroah-Hartman <gregkh@linuxfoundation.org>

Diffstat

```
-rw-r--r-- drivers/staging/media/davinci_vpfe/davinci_vpfe_user.h 36
```

1 files changed, 18 insertions, 18 deletions

```
diff --git a/drivers/staging/media/davinci_vpfe/davinci_vpfe_user.h b/drivers/staging/media/davinci_vpfe/davinci_vpfe_user.h
index f4f35c9..d3f34f9 100644
```

```
--- a/drivers/staging/media/davinci_vpfe/davinci_vpfe_user.h
```

```
+++ b/drivers/staging/media/davinci_vpfe/davinci_vpfe_user.h
```

```
@@ -544,41 +544,41 @@ struct vpfe_isif_raw_config {
```

```
/* IPIPE module configurations */
```

```
/* IPIPE input configuration */
```

```
-#define VPFE_IPIPE_INPUT_CONFIG (1 << 0)
```

```
+#define VPFE_IPIPE_INPUT_CONFIG BIT(0)
```

```
/* LUT based Defect Pixel Correction */
```

```
-#define VPFE_IPIPE_LUTDPC (1 << 1)
```

```
+#define VPFE_IPIPE_LUTDPC BIT(1)
```

```
/* On the fly (OTF) Defect Pixel Correction */
```

- **Step 5..**

Shoot the email

```
mutt -H /tmp/0001-<whatever your filename is>
```

```
$ perl scripts/get_maintainer.pl --separator , --nokeywords --nogit --nogit-fallback --noroles  
tats --nol -f drivers/staging/most/aim-sound/sound.c  
Greg Kroah-Hartman <gregkh@linuxfoundation.org>
```

What can I change in the kernel?

- Starters
 - Code cleanups

```
intern@ubuntu:~/git/kernels/staging$ ls
COPYING  Documentation  Kconfig      Makefile    arch      certs      drivers     fs          init      kernel    mm      s
amples  security      tools      virt
CREDITS  Kbuild        MAINTAINERS  README     block    crypto     firmware    include     ipc      lib      net     s
cripts  sound        usr
```

```
perl scripts/checkpatch.pl -f drivers/staging/android/* | less
```

<https://elixir.bootlin.com/linux/latest/source/Documentation/process/coding-style.rst>

staging: rtl8192u: ieee80211: Remove typedef to the tx_pending_t structure

Using typedef for a structure type is not suggested in Linux kernel coding style guidelines. So remove typedef from structure tx_pending_t. The typedef name is not used anywhere. All variables of this type are declared using "struct tx_pending_t". Also change the structure name to tx_pending since it is normally only typedefs that have names that end in _t.

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Diffstat

```
-rw-r--r-- drivers/staging/rtl8192u/ieee80211/ieee80211.h 6
```

1 files changed, 3 insertions, 3 deletions

```
diff --git a/drivers/staging/rtl8192u/ieee80211/ieee80211.h b/drivers/staging/rtl8192u/ieee80211/ieee80211.h
index 0971470..899c77e 100644
```

```
--- a/drivers/staging/rtl8192u/ieee80211/ieee80211.h
+++ b/drivers/staging/rtl8192u/ieee80211/ieee80211.h
@@ -1456,10 +1456,10 @@ enum ieee80211_state {
```

```
-typedef struct tx_pending_t{
+struct tx_pending {
+    int frag;
+    struct ieee80211_txb *txb;
-}tx_pending_t;
+};

typedef struct _bandwidth_autoswitch {
    long threshold_20Mhzto40Mhz;
@@ -1883,7 +1883,7 @@ struct ieee80211_device {
    RT_POWER_SAVE_CONTROL    PowerSaveControl;
    /*}
    /* used if IEEE_SOFTMAC_TX_QUEUE is set */
-    struct tx_pending_t tx_pending;
+    struct tx_pending tx_pending;
```

staging: lustre: llite: rw26: Remove unused function definition

The patch removes unused function definition `ll_get_user_pages()`.
The use of `ll_get_user_pages()` was replaced with `iov_iter_get_pages_alloc()`
in commit `91f79c43d1b54d7154b118860d81b39bad07dfff`.

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Diffstat

```
-rw-r--r-- drivers/staging/lustre/lustre/llite/rw26.c 26
```

1 files changed, 0 insertions, 26 deletions

```
diff --git a/drivers/staging/lustre/lustre/llite/rw26.c b/drivers/staging/lustre/lustre/llite/rw26.c
```

```
index d89e795..420f296 100644
```

```
--- a/drivers/staging/lustre/lustre/llite/rw26.c
```

```
+++ b/drivers/staging/lustre/lustre/llite/rw26.c
```

```
@@ -156,32 +156,6 @@ static int ll_releasepage(struct page *vmpage, gfp_t gfp_mask)
```

```
    #define MAX_DIRECTIO_SIZE (2 * 1024 * 1024 * 1024UL)
```

```
-static inline int ll_get_user_pages(int rw, unsigned long user_addr,  
-                                   size_t size, struct page ***pages,  
-                                   int *max_pages)
```

```
-{
```

```
-    int result = -ENOMEM;
```

```
-
```

```
-    /* set an arbitrary limit to prevent arithmetic overflow */
```

```
-    if (size > MAX_DIRECTIO_SIZE) {
```

```
-        *pages = NULL;
```

```
-        return -EFBIG;
```

Some other coding style rules:

- Meaningful names: `cntusr()` \Rightarrow `count_users()`
- Not more than 80 columns
- Indentations/spaces/braces
- Avoid typedefs
- Standard commenting style
- Use existing macros

- Coccinelle can help!

(pattern matching and transformation tool)

Example:

@depends on i@

type T; T[] E;

@@

- (sizeof(E)/sizeof(*E))

+ ARRAY_SIZE(E)

@ disable isnt_zero @

expression *E;

@@

E !=

- 0

+ NULL

- TODOs

```
find drivers/staging -name TODO
```


- Read kernel mailing archives
linux-kernel@vger.kernel.org
- Go through the git log to see commits

```
$ git log --pretty=oneline --abbrev-commit  
fc17fe387718 Staging: tidspbridge: Fix split strings in drivers/staging/tidspbridge/core/tiomap3430.c  
152cb4232c4f Staging: tidspbridge: Fix split strings in drivers/staging/tidspbridge/core/io_sm.c  
4096ec993f10 staging: rts5139: Fix quoted string split across lines
```

Revising your patch

- **Do not top-post to ask questions!**

Mark,

Lunch tomorrow sounds great! Let's keep it simple and get a pepperoni pizza.

> *On Fri, Apr 26, 2013 at 9:25 AM, Mark wrote:*

> *Hey John, I had some questions I wanted to ask you:*

> 1. *Do you want to go out to lunch with me tomorrow?*

> 2. *What's your favorite type of pizza?*

> 3. *You're paying this time, right?*



answer

questions

Mark,

See my answers below...

> *On Fri, Apr 26, 2013 at 9:25 AM, Mark wrote:*

> *Hey John, I had some questions I wanted to ask you:*

> 1. *Do you want to go out to lunch with me tomorrow?*

Lunch tomorrow sounds great!

> 2. *What's your favorite type of pizza?*

Let's keep it simple and get a pepperoni pizza.

> 3. *You're paying this time, right?*

You bet! You paid last time so it's my turn.



Inline replies

Subject: [PATCH v2 1/2] USB: at91: fix the number of endpoint parameter

In sama5d3 SoC, there are 16 endpoints, which is different with earlier SoCs (only have 7 endpoints). The USBA_NR_ENDPOINTS macro is not suitable for sama5d3. So, get the endpoints number through the udc->num_ep, which get from platform data for non-dt kernel, or parse from dt node.

Signed-off-by: Bo Shen <voice.shen@atmel.com>

Changes in v2:

- Make the commit message more clearer.

```
drivers/usb/gadget/atmel_usba_udc.c | 2 +-  
1 file changed, 1 insertion(+), 1 deletion(-)
```

```
diff --git a/drivers/usb/gadget/atmel_usba_udc.c b/drivers/usb/gadget/atmel_usba_udc.c
```

For further questions reach out to me at -
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