patches

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basic survival skills

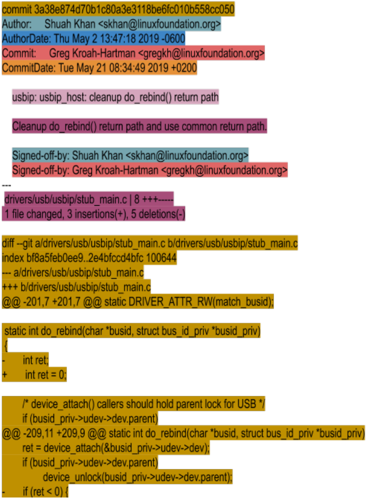
- these are basic git skills for survival
  - get commit history
  - working with remotes
  - creating branches
  - creating tags
  - rebasing tagged version
- provided in first 3 chapters of *git book*

- developers send changes, **through email as patches**, so patches are essentially emails,
- patches are **small incremental changes** made to the kernel
- a patch cannot break the kernel
- requiring each patch to do one thing helps isolate regression
- reverting a problem patch becomes easier as well
- complex changes are thus split into smaller chunks

whats in a ptch

- command to generate patch

```
git format-patch -1 --pretty=full 3a38e87...
```



```
commit 3a38e874d70b1c80a3e3118be6fc010b558cc050
Author:     Shuah Khan <skhan@linuxfoundation.org>
AuthorDate: Thu May 2 13:47:18 2019 -0600
Commit:     Greg Kroah-Hartman <gregkh@linuxfoundation.org>
CommitDate: Tue May 21 08:34:49 2019 +0200

    usbip: usbip_host: cleanup do_rebind() return path

    Cleanup do_rebind() return path and use common return path.

    Signed-off-by: Shuah Khan <skhan@linuxfoundation.org>
    Signed-off-by: Greg Kroah-Hartman <gregkh@linuxfoundation.org>
---
 drivers/usb/usbip/stub_main.c | 8 +++-----
 1 file changed, 3 insertions(+), 5 deletions(-)

diff --git a/drivers/usb/usbip/stub_main.c b/drivers/usb/usbip/stub_main.c
index bf8a5feb0ee9..2e4bfccd4bfc 100644
--- a/drivers/usb/usbip/stub_main.c
+++ b/drivers/usb/usbip/stub_main.c
@@ -201,7 +201,7 @@ static DRIVER_ATTR_RW(match_busid);

 static int do_rebind(char *busid, struct bus_id_priv *busid_priv)
 {
-       int ret;
+       int ret = 0;

        /* device_attach() callers should hold parent lock for USB */
        if (busid_priv->udev->dev.parent)
@@ -209,11 +209,9 @@ static int do_rebind(char *busid, struct bus_id_priv *busid_priv)
        ret = device_attach(&busid_priv->udev->dev);
        if (busid_priv->udev->dev.parent)
                device_unlock(busid_priv->udev->dev.parent);
-       if (ret < 0) {
```

Figure 1: patch screenshot

patch components

1. commit id: hash of {commmit date, commiter name, commiter’s email etc.}
2. **commit header**: follows the format:

```
major_subsystem:minor_area: short_description_of_what_is_being_changed
```

There is another varient, using (/) instead of (`:`), convention is set by maintainer

3. **commit log**: is a **detailed description** of the change and **why it is required**, and if **testing is done**
4. author: can be specified in `git commit` or `.gitconfig` file

5. Commiter’s name and email:
    - The committer is a maintainer or developer that applies the patch to a git repository.
    - This patch was picked up by the USB maintainer Greg Kroah-Hartman and committed to the usb tree and tested prior to being included in a pull request from Greg KH to Linus Torvalds.
    - Since it was pulled, you won’t see Linus as the committer for this patch. If you look at the git log, you will see several merge commits from Linus for when he pulls subsystem trees from maintainers.
6. sign-off: just a line you add; here’s the *doc*

and others

Tags

1. Acked-by: used by maintainer
2. Reviewed-by: patch is reviewed by [name]
3. Reported-by: person who reported the bug
4. Tested-by: the person who tested the patch
5. Suggested-by: the person who suggested the idea
6. Fixes: indicates that this patch fixes issue in commit <commit_id>

subject of patch

the subject line in a patch can be

- [PATCH]: specifies that email contains a patch
- [PATCH RFC]: Request for comment c[patch
- [PATCH v4]: 4th revised version of patch

- patch version history:
  - When sending **reworked patch**, include version history
  - “what changed” between current and previous version of patch is added between −−− and start of diff in patch file
  - **any text added here (between - - - and start of diff) is not included in commit and will not be added to kernel when patch is applied**
  - include information helpful for reviewers here
  - an *example patch*
- do not send new version of a patch as a reply to previous version, start a new thread for each version of the patch

THANK YOU