Linux Kernel Open Source Patch Submit Help

Following are the list of steps need to follow for the open source patch submission to Linux kernel community.

1. Download the git and send-email related utility.
   a. sudo add-apt-repository ppa:git-core/ppa

   b. sudo apt update

   c. sudo apt install git

   d. sudo apt install git-email
2. Configure the email ID from which you want to send the email.
   a. Gmail Email ID
      i. Add the following info in the "~/.gitconfig"

```
[sendemail]
    from = Dhaval Shah<Your Gmail ID>
    smtpserver = smtp.gmail.com
    smtpuser = <Your gmail ID>

    smtpencryption = tls
    smtppass = <You gmail password>
    chainreplyto = false
    smtpserverport = 587
[user]
    email = <Your Gmail ID>

    name = Dhaval Shah
```

      ii. Update changes to allow less secure apps before send patch for review.
         1. https://stackoverflow.com/questions/20337040/gmail-smtp-debug-error-please-log-in-via-your-web-browser
         2. https://kernelnewbies.org/PatchTipsAndTricks

b. Outlook Office Email ID
   i. Add the following info in the "~/.gitconfig"

```
[sendemail]
    from = Dhaval Shah<<Your Outlook ID>>
    smtpserver = smtp.office365.com
    smtpuser = <Your Outlook ID>

    smtpencryption = tls
    smtppass = <Your Outlook Password>
    chainreplyto = false
    smtpserverport = 587
[user]
    email = <Your Outlook ID>
    name = Dhaval Shah
```

3. Download the Linux Kernel source code from open source community
   a. git clone https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git
4. Apply your changes on top of downloaded Linux kernel.
   a. Keep your changes as minimum as possible which increase the acceptance ratio.
      i. Fix only one issue in one patch.
      ii. Try to minimize the list of files updated in one patch.
   b. Once you are done with your changes then apply and merge those changes locally.
5. Create the Patch which you want to upload to open source community.
   a. git format-patch -s -<Number of patch>
   b. If you have more than 1 patch then cover letter need to provide which can give the detail info on the all the patch set information.
      i. git format-patch -s -<Number of patch> --cover-letter
      ii. This will create one more patch "0000-cover-letter.patch" along with the list of patches.
      iii. Update the subject and Info in that patch to provide the information of the whole patchset.
6. Apply the checkpatch script to patch before submit to open source community.
   a. cd <path to Linux kernel>
   b. ./scripts/checkpatch.pl <path to patch>
   c. Following type of message will come in case of clean patch.

```
    total: 0 errors, 0 warnings, .....
```

7. Find out the MAINTAINERS of driver file which you have modified. This gives you a list of the IDs where you have to send the patch using the send-email
    a. ./scripts/get_maintainer.pl <Path to File>
    b. e.g

> **./scripts/get_maintainer.pl drivers/misc/ad525x_dpot.c**
> **Arnd Bergmann <arnd@arndb.de> (supporter:CHAR and MISC DRIVERS)**
> **Greg Kroah-Hartman <gregkh@linuxfoundation.org> (supporter:CHAR and MISC DRIVERS)**
> **Michael Hennerich <michael.hennerich@analog.com> (supporter:AD525X ANALOG DEVICES DIGITAL POTENTIOMETERS DR...)**
> **linux-kernel@vger.kernel.org (open list)**

8. Send Patch by using the git send-email
    a. git send-email <Path to Patch> --to=<Individual Maintainer ID>,<Individual Maintainer ID> --cc=<IDS for complete alias>
    b. Here, if you have local MAINTAINER of the company then you can add his/her email ID in –cc along with other email ID.

> **git send-email 0001-misc-isl29003-Missing-a-blank-line-after-declaration.patch --to=arnd@arndb.de,gregkh@linuxfoundation.org,michael.hennerich@analog.com --cc=linux-kernel@vger.kernel.org**

9. There are any review comments in the patch suggested by the MAINTAINERs
    a. Update changes to fix this review comments.
    b. Create the patch
        i. git format-patch –s -<Number of Patch> -v<Version of change>
        ii. Update your changes information below the "---" lines. This will help the MAINTAINERS to get the list of changes from last version to current version.

> **From e4860905174b0510c4adc85581162af35dbefb8e Mon Sep 17 00:00:00 2001**
> **From: Dhaval Shah <dhaval.experiance@gmail.com>**
> **Date: Thu, 7 Dec 2017 11:33:06 +0530**
> **Subject: [PATCH v2 2/3] misc: hpilo: please, no space before tabs**
>
> **Resolved all the please, no space before tabs checkpatch warnings. Issue found by checkpatch.**
>
> **Signed-off-by: Dhaval Shah <dhaval.experiance@gmail.com>**
> **---**
> **Changes Since v2:**
> ** * Updated things 1**
> ** * Updated struct …**
>
> **drivers/misc/hpilo.c | 8 ++++----**
> **drivers/misc/hpilo.h | 10 +++++-----**
> **2 files changed, 9 insertions(+), 9 deletions(-)**

iii. Out of all the patch, if only one patch gets the review comments and other patch are not then just provide the info below the "---" line in that patch.

> **From 9a317da571019eb89303bb8cd5bdac07bd2c7743 Mon Sep 17 00:00:00 2001**
> **From: Dhaval Shah <dhaval.experiance@gmail.com>**
> **Date: Thu, 7 Dec 2017 11:16:15 +0530**
> **Subject: [PATCH v2 1/3] misc: hpilo: Missing a blank line after declarations**
>
> **Resolved all the missing a blank line after declarations checkpatch warnings. Issue found by checkpatch.**
>
> **Signed-off-by: Dhaval Shah <dhaval.experiance@gmail.com>**
> **---**
> **Changes Since v2:**
> ** No Changes.**

c. Send the patch for the review
   i. Send the patch with next version number v2. If there are many other comments after that patch set as well then send the patch with the V3 version. Keep this process until your patch get ACK.
   ii. Command to use for this kind of case, need to add the "--in-reply-to" argument in git send-email command.

> **git send-email 0001-misc-isl29003-Missing-a-blank-line-after-declaration.patch --to=arnd@arndb.de,gregkh@linuxfoundation.org,michael.hennerich@analog.com --cc=linux-kernel@vger.kernel.org --in-reply-to <Message-ID>**
>
> **NOTE : Here Message ID will be the message ID of the review related email receive from the MAINTAINER.**
>
> 1. **To get the Message-ID of that email In gmail, click on the button in the right side of the reply (V) which gives you the option "Show Original". Click on that, it will give you Message-ID at top.**
> 2. **To get the Message-ID of that email in outlook, click on the button in the right side of the reply (V) which gives you the option "View Message Details". Click on that, it will give you Message-ID information in that.**

10. Patch is Reviewed successfully
    a. If any of the patch is successfully reviewed or ACK then please update the Reviewed by info in that patch before send for the next version.

From e4860905174b0510c4adc85581162af35dbefb8e Mon Sep 17 00:00:00 2001
From: Dhaval Shah <dhaval.experiance@gmail.com>
Date: Thu, 7 Dec 2017 11:33:06 +0530
Subject: [PATCH 2/3] misc: hpilo: please, no space before tabs

Resolved all the please, no space before tabs checkpatch
warnings. Issue found by checkpatch.

Signed-off-by: Dhaval Shah <dhaval.experiance@gmail.com>
Reviewed-by: ….........
---
drivers/misc/hpilo.c | 8 ++++----
drivers/misc/hpilo.h | 10 ++++++-----
2 files changed, 9 insertions(+), 9 deletions(-)

NOTE:
1. To Find the list of current issues related to the Linux kernel, Please follow the https://bugzilla.kernel.org/ link which contains all the issues related to the Open source Linux kernel codebase.
2. To start with the open source Linux Kernel community patch submission, Please fix the issue of the check patch errors or warnings related to any of the drivers in the Linux kernel.
    o e.g : https://patchwork.kernel.org/patch/10101733/