
Linux Process Documentation

Release 6.8.0

The kernel development community

Jan 16, 2026

CONTENTS

1	An introduction to how kernel development works	3
2	Tools and technical guides for kernel developers	63
3	Policy guides and developer statements	151
4	Dealing with bugs	191
5	Maintainer information	215
6	Other material	1131
	Bibliography	1155

So you want to be a Linux kernel developer? Welcome! While there is a lot to be learned about the kernel in a technical sense, it is also important to learn about how our community works. Reading these documents will make it much easier for you to get your changes merged with a minimum of trouble.

AN INTRODUCTION TO HOW KERNEL DEVELOPMENT WORKS

Read these documents first: an understanding of the material here will ease your entry into the kernel community.

* HOWTO do Linux kernel development

This is the be-all, end-all document on this topic. It contains instructions on how to become a Linux kernel developer and how to learn to work with the Linux kernel development community. It tries to not contain anything related to the technical aspects of kernel programming, but will help point you in the right direction for that.

If anything in this document becomes out of date, please send in patches to the maintainer of this file, who is listed at the bottom of the document.

* Introduction

So, you want to learn how to become a Linux kernel developer? Or you have been told by your manager, "Go write a Linux driver for this device." This document's goal is to teach you everything you need to know to achieve this by describing the process you need to go through, and hints on how to work with the community. It will also try to explain some of the reasons why the community works like it does.

The kernel is written mostly in C, with some architecture-dependent parts written in assembly. A good understanding of C is required for kernel development. Assembly (any architecture) is not required unless you plan to do low-level development for that architecture. Though they are not a good substitute for a solid C education and/or years of experience, the following books are good for, if anything, reference:

- "The C Programming Language" by Kernighan and Ritchie [Prentice Hall]
- "Practical C Programming" by Steve Oualline [O'Reilly]
- "C: A Reference Manual" by Harbison and Steele [Prentice Hall]

The kernel is written using GNU C and the GNU toolchain. While it adheres to the ISO C11 standard, it uses a number of extensions that are not featured in the standard. The kernel is a freestanding C environment, with no reliance on the standard C library, so some portions of the C standard are not supported. Arbitrary long long divisions and floating point are not allowed. It can sometimes be difficult to understand the assumptions the kernel has on the toolchain and the extensions that it uses, and unfortunately there is no definitive reference for them. Please check the gcc info pages (*info gcc*) for some information on them.

Please remember that you are trying to learn how to work with the existing development community. It is a diverse group of people, with high standards for coding, style and procedure. These standards have been created over time based on what they have found to work best for such a large and geographically dispersed team. Try to learn as much as possible about these standards ahead of time, as they are well documented; do not expect people to adapt to you or your company's way of doing things.

* Legal Issues

The Linux kernel source code is released under the GPL. Please see the file COPYING in the main directory of the source tree. The Linux kernel licensing rules and how to use [SPDX](#) identifiers in source code are described in [Documentation/process/license-rules.rst](#). If you have further questions about the license, please contact a lawyer, and do not ask on the Linux kernel mailing list. The people on the mailing lists are not lawyers, and you should not rely on their statements on legal matters.

For common questions and answers about the GPL, please see:

<https://www.gnu.org/licenses/gpl-faq.html>

* Documentation

The Linux kernel source tree has a large range of documents that are invaluable for learning how to interact with the kernel community. When new features are added to the kernel, it is recommended that new documentation files are also added which explain how to use the feature. When a kernel change causes the interface that the kernel exposes to userspace to change, it is recommended that you send the information or a patch to the manual pages explaining the change to the manual pages maintainer at alx@kernel.org, and CC the list linux-api@vger.kernel.org.

Here is a list of files that are in the kernel source tree that are required reading:

Documentation/admin-guide/README.rst

This file gives a short background on the Linux kernel and describes what is necessary to do to configure and build the kernel. People who are new to the kernel should start here.

Documentation/process/changes.rst

This file gives a list of the minimum levels of various software packages that are necessary to build and run the kernel successfully.

Documentation/process/coding-style.rst

This describes the Linux kernel coding style, and some of the rationale behind it. All new code is expected to follow the guidelines in this document. Most maintainers will only accept patches if these rules are followed, and many people will only review code if it is in the proper style.

Documentation/process/submitting-patches.rst

This file describes in explicit detail how to successfully create and send a patch, including (but not limited to):

- Email contents
- Email format

- Who to send it to

Following these rules will not guarantee success (as all patches are subject to scrutiny for content and style), but not following them will almost always prevent it.

Other excellent descriptions of how to create patches properly are:

"The Perfect Patch"

<https://www.ozlabs.org/~akpm/stuff/tpp.txt>

"Linux kernel patch submission format"

<https://web.archive.org/web/20180829112450/http://linux.yyz.us/patch-format.html>

Documentation/process/stable-api-nonsense.rst

This file describes the rationale behind the conscious decision to not have a stable API within the kernel, including things like:

- Subsystem shim-layers (for compatibility?)
- Driver portability between Operating Systems.
- Mitigating rapid change within the kernel source tree (or preventing rapid change)

This document is crucial for understanding the Linux development philosophy and is very important for people moving to Linux from development on other Operating Systems.

Documentation/process/security-bugs.rst

If you feel you have found a security problem in the Linux kernel, please follow the steps in this document to help notify the kernel developers, and help solve the issue.

Documentation/process/management-style.rst

This document describes how Linux kernel maintainers operate and the shared ethos behind their methodologies. This is important reading for anyone new to kernel development (or anyone simply curious about it), as it resolves a lot of common misconceptions and confusion about the unique behavior of kernel maintainers.

Documentation/process/stable-kernel-rules.rst

This file describes the rules on how the stable kernel releases happen, and what to do if you want to get a change into one of these releases.

Documentation/process/kernel-docs.rst

A list of external documentation that pertains to kernel development. Please consult this list if you do not find what you are looking for within the in-kernel documentation.

Documentation/process/applying-patches.rst

A good introduction describing exactly what a patch is and how to apply it to the different development branches of the kernel.

The kernel also has a large number of documents that can be automatically generated from the source code itself or from ReStructuredText markups (ReST), like this one. This includes a full description of the in-kernel API, and rules on how to handle locking properly.

All such documents can be generated as PDF or HTML by running:

```
make pdfdocs
make htmldocs
```

respectively from the main kernel source directory.

The documents that uses ReST markup will be generated at Documentation/output. They can also be generated on LaTeX and ePub formats with:

```
make latexdocs
make epubdocs
```

* **Becoming A Kernel Developer**

If you do not know anything about Linux kernel development, you should look at the Linux KernelNewbies project:

<https://kernelnewbies.org>

It consists of a helpful mailing list where you can ask almost any type of basic kernel development question (make sure to search the archives first, before asking something that has already been answered in the past.) It also has an IRC channel that you can use to ask questions in real-time, and a lot of helpful documentation that is useful for learning about Linux kernel development.

The website has basic information about code organization, subsystems, and current projects (both in-tree and out-of-tree). It also describes some basic logistical information, like how to compile a kernel and apply a patch.

If you do not know where you want to start, but you want to look for some task to start doing to join into the kernel development community, go to the Linux Kernel Janitor's project:

<https://kernelnewbies.org/KernelJanitors>

It is a great place to start. It describes a list of relatively simple problems that need to be cleaned up and fixed within the Linux kernel source tree. Working with the developers in charge of this project, you will learn the basics of getting your patch into the Linux kernel tree, and possibly be pointed in the direction of what to go work on next, if you do not already have an idea.

Before making any actual modifications to the Linux kernel code, it is imperative to understand how the code in question works. For this purpose, nothing is better than reading through it directly (most tricky bits are commented well), perhaps even with the help of specialized tools. One such tool that is particularly recommended is the Linux Cross-Reference project, which is able to present source code in a self-referential, indexed webpage format. An excellent up-to-date repository of the kernel code may be found at:

<https://elixir.bootlin.com/>

* The development process

Linux kernel development process currently consists of a few different main kernel "branches" and lots of different subsystem-specific kernel branches. These different branches are:

- Linus's mainline tree
- Various stable trees with multiple major numbers
- Subsystem-specific trees
- linux-next integration testing tree

Mainline tree

The mainline tree is maintained by Linus Torvalds, and can be found at <https://kernel.org> or in the repo. Its development process is as follows:

- As soon as a new kernel is released a two week window is open, during this period of time maintainers can submit big diffs to Linus, usually the patches that have already been included in the linux-next for a few weeks. The preferred way to submit big changes is using git (the kernel's source management tool, more information can be found at <https://git-scm.com/>) but plain patches are also just fine.
- After two weeks a -rc1 kernel is released and the focus is on making the new kernel as rock solid as possible. Most of the patches at this point should fix a regression. Bugs that have always existed are not regressions, so only push these kinds of fixes if they are important. Please note that a whole new driver (or filesystem) might be accepted after -rc1 because there is no risk of causing regressions with such a change as long as the change is self-contained and does not affect areas outside of the code that is being added. git can be used to send patches to Linus after -rc1 is released, but the patches need to also be sent to a public mailing list for review.
- A new -rc is released whenever Linus deems the current git tree to be in a reasonably sane state adequate for testing. The goal is to release a new -rc kernel every week.
- Process continues until the kernel is considered "ready", the process should last around 6 weeks.

It is worth mentioning what Andrew Morton wrote on the linux-kernel mailing list about kernel releases:

"Nobody knows when a kernel will be released, because it's released according to perceived bug status, not according to a preconceived timeline."

Various stable trees with multiple major numbers

Kernels with 3-part versions are -stable kernels. They contain relatively small and critical fixes for security problems or significant regressions discovered in a given major mainline release. Each release in a major stable series increments the third part of the version number, keeping the first two parts the same.

This is the recommended branch for users who want the most recent stable kernel and are not interested in helping test development/experimental versions.

Stable trees are maintained by the "stable" team <stable@vger.kernel.org>, and are released as needs dictate. The normal release period is approximately two weeks, but it can be longer if there are no pressing problems. A security-related problem, instead, can cause a release to happen almost instantly.

The file *Documentation/process/stable-kernel-rules.rst* in the kernel tree documents what kinds of changes are acceptable for the -stable tree, and how the release process works.

Subsystem-specific trees

The maintainers of the various kernel subsystems --- and also many kernel subsystem developers --- expose their current state of development in source repositories. That way, others can see what is happening in the different areas of the kernel. In areas where development is rapid, a developer may be asked to base his submissions onto such a subsystem kernel tree so that conflicts between the submission and other already ongoing work are avoided.

Most of these repositories are git trees, but there are also other SCMs in use, or patch queues being published as quilt series. Addresses of these subsystem repositories are listed in the MAINTAINERS file. Many of them can be browsed at <https://git.kernel.org/>.

Before a proposed patch is committed to such a subsystem tree, it is subject to review which primarily happens on mailing lists (see the respective section below). For several kernel subsystems, this review process is tracked with the tool patchwork. Patchwork offers a web interface which shows patch postings, any comments on a patch or revisions to it, and maintainers can mark patches as under review, accepted, or rejected. Most of these patchwork sites are listed at <https://patchwork.kernel.org/>.

linux-next integration testing tree

Before updates from subsystem trees are merged into the mainline tree, they need to be integration-tested. For this purpose, a special testing repository exists into which virtually all subsystem trees are pulled on an almost daily basis:

<https://git.kernel.org/?p=linux/kernel/git/next/linux-next.git>

This way, the linux-next gives a summary outlook onto what will be expected to go into the mainline kernel at the next merge period. Adventurous testers are very welcome to runtime-test the linux-next.

* Bug Reporting

The file 'Documentation/admin-guide/reporting-issues.rst' in the main kernel source directory describes how to report a possible kernel bug, and details what kind of information is needed by the kernel developers to help track down the problem.

* Managing bug reports

One of the best ways to put into practice your hacking skills is by fixing bugs reported by other people. Not only you will help to make the kernel more stable, but you'll also learn to fix real world problems and you will improve your skills, and other developers will be aware of your presence. Fixing bugs is one of the best ways to get merits among other developers, because not many people like wasting time fixing other people's bugs.

To work on already reported bug reports, find a subsystem you are interested in. Check the MAINTAINERS file where bugs for that subsystem get reported to; often it will be a mailing list, rarely a bugtracker. Search the archives of said place for recent reports and help where you see fit. You may also want to check <https://bugzilla.kernel.org> for bug reports; only a handful of kernel subsystems use it actively for reporting or tracking, nevertheless bugs for the whole kernel get filed there.

* Mailing lists

As some of the above documents describe, the majority of the core kernel developers participate on the Linux Kernel Mailing list. Details on how to subscribe and unsubscribe from the list can be found at:

<http://vger.kernel.org/vger-lists.html#linux-kernel>

There are archives of the mailing list on the web in many different places. Use a search engine to find these archives. For example:

<https://lore.kernel.org/lkml/>

It is highly recommended that you search the archives about the topic you want to bring up, before you post it to the list. A lot of things already discussed in detail are only recorded at the mailing list archives.

Most of the individual kernel subsystems also have their own separate mailing list where they do their development efforts. See the MAINTAINERS file for a list of what these lists are for the different groups.

Many of the lists are hosted on kernel.org. Information on them can be found at:

<http://vger.kernel.org/vger-lists.html>

Please remember to follow good behavioral habits when using the lists. Though a bit cheesy, the following URL has some simple guidelines for interacting with the list (or any list):

<http://www.albion.com/netiquette/>

If multiple people respond to your mail, the CC: list of recipients may get pretty large. Don't remove anybody from the CC: list without a good reason, or don't reply only to the list address. Get used to receiving the mail twice, one from the sender and the one from the list, and don't try to tune that by adding fancy mail-headers, people will not like it.

Remember to keep the context and the attribution of your replies intact, keep the "John Kernel-hacker wrote ...:" lines at the top of your reply, and add your statements between the individual quoted sections instead of writing at the top of the mail.

If you add patches to your mail, make sure they are plain readable text as stated in [Documentation/process/submitting-patches.rst](#). Kernel developers don't want to deal with attachments or compressed patches; they may want to comment on individual lines of your patch,

which works only that way. Make sure you use a mail program that does not mangle spaces and tab characters. A good first test is to send the mail to yourself and try to apply your own patch by yourself. If that doesn't work, get your mail program fixed or change it until it works. Above all, please remember to show respect to other subscribers.

* Working with the community

The goal of the kernel community is to provide the best possible kernel there is. When you submit a patch for acceptance, it will be reviewed on its technical merits and those alone. So, what should you be expecting?

- criticism
- comments
- requests for change
- requests for justification
- silence

Remember, this is part of getting your patch into the kernel. You have to be able to take criticism and comments about your patches, evaluate them at a technical level and either rework your patches or provide clear and concise reasoning as to why those changes should not be made. If there are no responses to your posting, wait a few days and try again, sometimes things get lost in the huge volume.

What should you not do?

- expect your patch to be accepted without question
- become defensive
- ignore comments
- resubmit the patch without making any of the requested changes

In a community that is looking for the best technical solution possible, there will always be differing opinions on how beneficial a patch is. You have to be cooperative, and willing to adapt your idea to fit within the kernel. Or at least be willing to prove your idea is worth it. Remember, being wrong is acceptable as long as you are willing to work toward a solution that is right.

It is normal that the answers to your first patch might simply be a list of a dozen things you should correct. This does **not** imply that your patch will not be accepted, and it is **not** meant against you personally. Simply correct all issues raised against your patch and resend it.

* Differences between the kernel community and corporate structures

The kernel community works differently than most traditional corporate development environments. Here are a list of things that you can try to do to avoid problems:

Good things to say regarding your proposed changes:

- "This solves multiple problems."
- "This deletes 2000 lines of code."
- "Here is a patch that explains what I am trying to describe."

- "I tested it on 5 different architectures..."
- "Here is a series of small patches that..."
- "This increases performance on typical machines..."

Bad things you should avoid saying:

- "We did it this way in AIX/ptx/Solaris, so therefore it must be good..."
- "I've been doing this for 20 years, so..."
- "This is required for my company to make money"
- "This is for our Enterprise product line."
- "Here is my 1000 page design document that describes my idea"
- "I've been working on this for 6 months..."
- "Here's a 5000 line patch that..."
- "I rewrote all of the current mess, and here it is..."
- "I have a deadline, and this patch needs to be applied now."

Another way the kernel community is different than most traditional software engineering work environments is the faceless nature of interaction. One benefit of using email and irc as the primary forms of communication is the lack of discrimination based on gender or race. The Linux kernel work environment is accepting of women and minorities because all you are is an email address. The international aspect also helps to level the playing field because you can't guess gender based on a person's name. A man may be named Andrea and a woman may be named Pat. Most women who have worked in the Linux kernel and have expressed an opinion have had positive experiences.

The language barrier can cause problems for some people who are not comfortable with English. A good grasp of the language can be needed in order to get ideas across properly on mailing lists, so it is recommended that you check your emails to make sure they make sense in English before sending them.

*** Break up your changes**

The Linux kernel community does not gladly accept large chunks of code dropped on it all at once. The changes need to be properly introduced, discussed, and broken up into tiny, individual portions. This is almost the exact opposite of what companies are used to doing. Your proposal should also be introduced very early in the development process, so that you can receive feedback on what you are doing. It also lets the community feel that you are working with them, and not simply using them as a dumping ground for your feature. However, don't send 50 emails at one time to a mailing list, your patch series should be smaller than that almost all of the time.

The reasons for breaking things up are the following:

- 1) Small patches increase the likelihood that your patches will be applied, since they don't take much time or effort to verify for correctness. A 5 line patch can be applied by a maintainer with barely a second glance. However, a 500 line patch may take hours to review for correctness (the time it takes is exponentially proportional to the size of the patch, or something).

Small patches also make it very easy to debug when something goes wrong. It's much easier to back out patches one by one than it is to dissect a very large patch after it's been applied (and broken something).

- 2) It's important not only to send small patches, but also to rewrite and simplify (or simply re-order) patches before submitting them.

Here is an analogy from kernel developer Al Viro:

"Think of a teacher grading homework from a math student. The teacher does not want to see the student's trials and errors before they came up with the solution. They want to see the cleanest, most elegant answer. A good student knows this, and would never submit her intermediate work before the final solution.

The same is true of kernel development. The maintainers and reviewers do not want to see the thought process behind the solution to the problem one is solving. They want to see a simple and elegant solution."

It may be challenging to keep the balance between presenting an elegant solution and working together with the community and discussing your unfinished work. Therefore it is good to get early in the process to get feedback to improve your work, but also keep your changes in small chunks that they may get already accepted, even when your whole task is not ready for inclusion now.

Also realize that it is not acceptable to send patches for inclusion that are unfinished and will be "fixed up later."

*** Justify your change**

Along with breaking up your patches, it is very important for you to let the Linux community know why they should add this change. New features must be justified as being needed and useful.

*** Document your change**

When sending in your patches, pay special attention to what you say in the text in your email. This information will become the ChangeLog information for the patch, and will be preserved for everyone to see for all time. It should describe the patch completely, containing:

- why the change is necessary
- the overall design approach in the patch
- implementation details
- testing results

For more details on what this should all look like, please see the ChangeLog section of the document:

"The Perfect Patch"

<https://www.ozlabs.org/~akpm/stuff/tpp.txt>

All of these things are sometimes very hard to do. It can take years to perfect these practices (if at all). It's a continuous process of improvement that requires a lot of patience and determi-

nation. But don't give up, it's possible. Many have done it before, and each had to start exactly where you are now.

Thanks to Paolo Ciarrocchi who allowed the "Development Process" (<https://lwn.net/Articles/94386/>) section to be based on text he had written, and to Randy Dunlap and Gerrit Huizenga for some of the list of things you should and should not say. Also thanks to Pat Mochel, Hanna Linder, Randy Dunlap, Kay Sievers, Vojtech Pavlik, Jan Kara, Josh Boyer, Kees Cook, Andrew Morton, Andi Kleen, Vadim Lobanov, Jesper Juhl, Adrian Bunk, Keri Harris, Frans Pop, David A. Wheeler, Junio Hamano, Michael Kerrisk, and Alex Shepard for their review, comments, and contributions. Without their help, this document would not have been possible.

Maintainer: Greg Kroah-Hartman <greg@kroah.com>

*** A guide to the Kernel Development Process**

The purpose of this document is to help developers (and their managers) work with the development community with a minimum of frustration. It is an attempt to document how this community works in a way which is accessible to those who are not intimately familiar with Linux kernel development (or, indeed, free software development in general). While there is some technical material here, this is very much a process-oriented discussion which does not require a deep knowledge of kernel programming to understand.

*** Introduction**

Executive summary

The rest of this section covers the scope of the kernel development process and the kinds of frustrations that developers and their employers can encounter there. There are a great many reasons why kernel code should be merged into the official ("mainline") kernel, including automatic availability to users, community support in many forms, and the ability to influence the direction of kernel development. Code contributed to the Linux kernel must be made available under a GPL-compatible license.

How the development process works introduces the development process, the kernel release cycle, and the mechanics of the merge window. The various phases in the patch development, review, and merging cycle are covered. There is some discussion of tools and mailing lists. Developers wanting to get started with kernel development are encouraged to track down and fix bugs as an initial exercise.

Early-stage planning covers early-stage project planning, with an emphasis on involving the development community as soon as possible.

Getting the code right is about the coding process; several pitfalls which have been encountered by other developers are discussed. Some requirements for patches are covered, and there is an introduction to some of the tools which can help to ensure that kernel patches are correct.

Posting patches talks about the process of posting patches for review. To be taken seriously by the development community, patches must be properly formatted and described, and they must be sent to the right place. Following the advice in this section should help to ensure the best possible reception for your work.

Followthrough covers what happens after posting patches; the job is far from done at that point. Working with reviewers is a crucial part of the development process; this section offers a number of tips on how to avoid problems at this important stage. Developers are cautioned against assuming that the job is done when a patch is merged into the mainline.

Advanced topics introduces a couple of "advanced" topics: managing patches with git and reviewing patches posted by others.

For more information concludes the document with pointers to sources for more information on kernel development.

What this document is about

The Linux kernel, at over 8 million lines of code and well over 1000 contributors to each release, is one of the largest and most active free software projects in existence. Since its humble beginning in 1991, this kernel has evolved into a best-of-breed operating system component which runs on pocket-sized digital music players, desktop PCs, the largest supercomputers in existence, and all types of systems in between. It is a robust, efficient, and scalable solution for almost any situation.

With the growth of Linux has come an increase in the number of developers (and companies) wishing to participate in its development. Hardware vendors want to ensure that Linux supports their products well, making those products attractive to Linux users. Embedded systems vendors, who use Linux as a component in an integrated product, want Linux to be as capable and well-suited to the task at hand as possible. Distributors and other software vendors who base their products on Linux have a clear interest in the capabilities, performance, and reliability of the Linux kernel. And end users, too, will often wish to change Linux to make it better suit their needs.

One of the most compelling features of Linux is that it is accessible to these developers; anybody with the requisite skills can improve Linux and influence the direction of its development. Proprietary products cannot offer this kind of openness, which is a characteristic of the free software process. But, if anything, the kernel is even more open than most other free software projects. A typical three-month kernel development cycle can involve over 1000 developers working for more than 100 different companies (or for no company at all).

Working with the kernel development community is not especially hard. But, that notwithstanding, many potential contributors have experienced difficulties when trying to do kernel work. The kernel community has evolved its own distinct ways of operating which allow it to function smoothly (and produce a high-quality product) in an environment where thousands of lines of code are being changed every day. So it is not surprising that Linux kernel development process differs greatly from proprietary development methods.

The kernel's development process may come across as strange and intimidating to new developers, but there are good reasons and solid experience behind it. A developer who does not understand the kernel community's ways (or, worse, who tries to flout or circumvent them) will have a frustrating experience in store. The development community, while being helpful to those who are trying to learn, has little time for those who will not listen or who do not care about the development process.

It is hoped that those who read this document will be able to avoid that frustrating experience. There is a lot of material here, but the effort involved in reading it will be repaid in short order. The development community is always in need of developers who will help to make the kernel better; the following text should help you - or those who work for you - join our community.

Credits

This document was written by Jonathan Corbet, corbet@lwn.net. It has been improved by comments from Johannes Berg, James Berry, Alex Chiang, Roland Dreier, Randy Dunlap, Jake Edge, Jiri Kosina, Matt Mackall, Arthur Marsh, Amanda McPherson, Andrew Morton, Andrew Price, Tsugikazu Shibata, and Jochen Voß.

This work was supported by the Linux Foundation; thanks especially to Amanda McPherson, who saw the value of this effort and made it all happen.

The importance of getting code into the mainline

Some companies and developers occasionally wonder why they should bother learning how to work with the kernel community and get their code into the mainline kernel (the “mainline” being the kernel maintained by Linus Torvalds and used as a base by Linux distributors). In the short term, contributing code can look like an avoidable expense; it seems easier to just keep the code separate and support users directly. The truth of the matter is that keeping code separate (“out of tree”) is a false economy.

As a way of illustrating the costs of out-of-tree code, here are a few relevant aspects of the kernel development process; most of these will be discussed in greater detail later in this document. Consider:

- Code which has been merged into the mainline kernel is available to all Linux users. It will automatically be present on all distributions which enable it. There is no need for driver disks, downloads, or the hassles of supporting multiple versions of multiple distributions; it all just works, for the developer and for the user. Incorporation into the mainline solves a large number of distribution and support problems.
- While kernel developers strive to maintain a stable interface to user space, the internal kernel API is in constant flux. The lack of a stable internal interface is a deliberate design decision; it allows fundamental improvements to be made at any time and results in higher-quality code. But one result of that policy is that any out-of-tree code requires constant upkeep if it is to work with new kernels. Maintaining out-of-tree code requires significant amounts of work just to keep that code working.

Code which is in the mainline, instead, does not require this work as the result of a simple rule requiring any developer who makes an API change to also fix any code that breaks as the result of that change. So code which has been merged into the mainline has significantly lower maintenance costs.

- Beyond that, code which is in the kernel will often be improved by other developers. Surprising results can come from empowering your user community and customers to improve your product.
- Kernel code is subjected to review, both before and after merging into the mainline. No matter how strong the original developer's skills are, this review process invariably finds ways in which the code can be improved. Often review finds severe bugs and security problems. This is especially true for code which has been developed in a closed environment; such code benefits strongly from review by outside developers. Out-of-tree code is lower-quality code.
- Participation in the development process is your way to influence the direction of kernel development. Users who complain from the sidelines are heard, but active developers

have a stronger voice - and the ability to implement changes which make the kernel work better for their needs.

- When code is maintained separately, the possibility that a third party will contribute a different implementation of a similar feature always exists. Should that happen, getting your code merged will become much harder - to the point of impossibility. Then you will be faced with the unpleasant alternatives of either (1) maintaining a nonstandard feature out of tree indefinitely, or (2) abandoning your code and migrating your users over to the in-tree version.
- Contribution of code is the fundamental action which makes the whole process work. By contributing your code you can add new functionality to the kernel and provide capabilities and examples which are of use to other kernel developers. If you have developed code for Linux (or are thinking about doing so), you clearly have an interest in the continued success of this platform; contributing code is one of the best ways to help ensure that success.

All of the reasoning above applies to any out-of-tree kernel code, including code which is distributed in proprietary, binary-only form. There are, however, additional factors which should be taken into account before considering any sort of binary-only kernel code distribution. These include:

- The legal issues around the distribution of proprietary kernel modules are cloudy at best; quite a few kernel copyright holders believe that most binary-only modules are derived products of the kernel and that, as a result, their distribution is a violation of the GNU General Public license (about which more will be said below). Your author is not a lawyer, and nothing in this document can possibly be considered to be legal advice. The true legal status of closed-source modules can only be determined by the courts. But the uncertainty which haunts those modules is there regardless.
- Binary modules greatly increase the difficulty of debugging kernel problems, to the point that most kernel developers will not even try. So the distribution of binary-only modules will make it harder for your users to get support from the community.
- Support is also harder for distributors of binary-only modules, who must provide a version of the module for every distribution and every kernel version they wish to support. Dozens of builds of a single module can be required to provide reasonably comprehensive coverage, and your users will have to upgrade your module separately every time they upgrade their kernel.
- Everything that was said above about code review applies doubly to closed-source code. Since this code is not available at all, it cannot have been reviewed by the community and will, beyond doubt, have serious problems.

Makers of embedded systems, in particular, may be tempted to disregard much of what has been said in this section in the belief that they are shipping a self-contained product which uses a frozen kernel version and requires no more development after its release. This argument misses the value of widespread code review and the value of allowing your users to add capabilities to your product. But these products, too, have a limited commercial life, after which a new version must be released. At that point, vendors whose code is in the mainline and well maintained will be much better positioned to get the new product ready for market quickly.

Licensing

Code is contributed to the Linux kernel under a number of licenses, but all code must be compatible with version 2 of the GNU General Public License (GPLv2), which is the license covering the kernel distribution as a whole. In practice, that means that all code contributions are covered either by GPLv2 (with, optionally, language allowing distribution under later versions of the GPL) or the three-clause BSD license. Any contributions which are not covered by a compatible license will not be accepted into the kernel.

Copyright assignments are not required (or requested) for code contributed to the kernel. All code merged into the mainline kernel retains its original ownership; as a result, the kernel now has thousands of owners.

One implication of this ownership structure is that any attempt to change the licensing of the kernel is doomed to almost certain failure. There are few practical scenarios where the agreement of all copyright holders could be obtained (or their code removed from the kernel). So, in particular, there is no prospect of a migration to version 3 of the GPL in the foreseeable future.

It is imperative that all code contributed to the kernel be legitimately free software. For that reason, code from anonymous (or pseudonymous) contributors will not be accepted. All contributors are required to "sign off" on their code, stating that the code can be distributed with the kernel under the GPL. Code which has not been licensed as free software by its owner, or which risks creating copyright-related problems for the kernel (such as code which derives from reverse-engineering efforts lacking proper safeguards) cannot be contributed.

Questions about copyright-related issues are common on Linux development mailing lists. Such questions will normally receive no shortage of answers, but one should bear in mind that the people answering those questions are not lawyers and cannot provide legal advice. If you have legal questions relating to Linux source code, there is no substitute for talking with a lawyer who understands this field. Relying on answers obtained on technical mailing lists is a risky affair.

* How the development process works

Linux kernel development in the early 1990's was a pretty loose affair, with relatively small numbers of users and developers involved. With a user base in the millions and with some 2,000 developers involved over the course of one year, the kernel has since had to evolve a number of processes to keep development happening smoothly. A solid understanding of how the process works is required in order to be an effective part of it.

The big picture

The kernel developers use a loosely time-based release process, with a new major kernel release happening every two or three months. The recent release history looks like this:

5.0	March 3, 2019
5.1	May 5, 2019
5.2	July 7, 2019
5.3	September 15, 2019
5.4	November 24, 2019
5.5	January 6, 2020

Every 5.x release is a major kernel release with new features, internal API changes, and more. A typical release can contain about 13,000 changesets with changes to several hundred thousand lines of code. 5.x is the leading edge of Linux kernel development; the kernel uses a rolling development model which is continually integrating major changes.

A relatively straightforward discipline is followed with regard to the merging of patches for each release. At the beginning of each development cycle, the "merge window" is said to be open. At that time, code which is deemed to be sufficiently stable (and which is accepted by the development community) is merged into the mainline kernel. The bulk of changes for a new development cycle (and all of the major changes) will be merged during this time, at a rate approaching 1,000 changes ("patches," or "changesets") per day.

(As an aside, it is worth noting that the changes integrated during the merge window do not come out of thin air; they have been collected, tested, and staged ahead of time. How that process works will be described in detail later on).

The merge window lasts for approximately two weeks. At the end of this time, Linus Torvalds will declare that the window is closed and release the first of the "rc" kernels. For the kernel which is destined to be 5.6, for example, the release which happens at the end of the merge window will be called 5.6-rc1. The -rc1 release is the signal that the time to merge new features has passed, and that the time to stabilize the next kernel has begun.

Over the next six to ten weeks, only patches which fix problems should be submitted to the mainline. On occasion a more significant change will be allowed, but such occasions are rare; developers who try to merge new features outside of the merge window tend to get an unfriendly reception. As a general rule, if you miss the merge window for a given feature, the best thing to do is to wait for the next development cycle. (An occasional exception is made for drivers for previously-unsupported hardware; if they touch no in-tree code, they cannot cause regressions and should be safe to add at any time).

As fixes make their way into the mainline, the patch rate will slow over time. Linus releases new -rc kernels about once a week; a normal series will get up to somewhere between -rc6 and -rc9 before the kernel is considered to be sufficiently stable and the final release is made. At that point the whole process starts over again.

As an example, here is how the 5.4 development cycle went (all dates in 2019):

September 15	5.3 stable release
September 30	5.4-rc1, merge window closes
October 6	5.4-rc2
October 13	5.4-rc3
October 20	5.4-rc4
October 27	5.4-rc5
November 3	5.4-rc6
November 10	5.4-rc7
November 17	5.4-rc8
November 24	5.4 stable release

How do the developers decide when to close the development cycle and create the stable release? The most significant metric used is the list of regressions from previous releases. No bugs are welcome, but those which break systems which worked in the past are considered to be especially serious. For this reason, patches which cause regressions are looked upon unfavorably and are quite likely to be reverted during the stabilization period.

The developers' goal is to fix all known regressions before the stable release is made. In the real world, this kind of perfection is hard to achieve; there are just too many variables in a project of this size. There comes a point where delaying the final release just makes the problem worse; the pile of changes waiting for the next merge window will grow larger, creating even more regressions the next time around. So most 5.x kernels go out with a handful of known regressions though, hopefully, none of them are serious.

Once a stable release is made, its ongoing maintenance is passed off to the "stable team," currently Greg Kroah-Hartman. The stable team will release occasional updates to the stable release using the 5.x.y numbering scheme. To be considered for an update release, a patch must (1) fix a significant bug, and (2) already be merged into the mainline for the next development kernel. Kernels will typically receive stable updates for a little more than one development cycle past their initial release. So, for example, the 5.2 kernel's history looked like this (all dates in 2019):

July 7	5.2 stable release
July 14	5.2.1
July 21	5.2.2
July 26	5.2.3
July 28	5.2.4
July 31	5.2.5
...	...
October 11	5.2.21

5.2.21 was the final stable update of the 5.2 release.

Some kernels are designated "long term" kernels; they will receive support for a longer period. Please refer to the following link for the list of active long term kernel versions and their maintainers:

<https://www.kernel.org/category/releases.html>

The selection of a kernel for long-term support is purely a matter of a maintainer having the need and the time to maintain that release. There are no known plans for long-term support for any specific upcoming release.

The lifecycle of a patch

Patches do not go directly from the developer's keyboard into the mainline kernel. There is, instead, a somewhat involved (if somewhat informal) process designed to ensure that each patch is reviewed for quality and that each patch implements a change which is desirable to have in the mainline. This process can happen quickly for minor fixes, or, in the case of large and controversial changes, go on for years. Much developer frustration comes from a lack of understanding of this process or from attempts to circumvent it.

In the hopes of reducing that frustration, this document will describe how a patch gets into the kernel. What follows below is an introduction which describes the process in a somewhat idealized way. A much more detailed treatment will come in later sections.

The stages that a patch goes through are, generally:

- Design. This is where the real requirements for the patch - and the way those requirements will be met - are laid out. Design work is often done without involving the community, but

it is better to do this work in the open if at all possible; it can save a lot of time redesigning things later.

- **Early review.** Patches are posted to the relevant mailing list, and developers on that list reply with any comments they may have. This process should turn up any major problems with a patch if all goes well.
- **Wider review.** When the patch is getting close to ready for mainline inclusion, it should be accepted by a relevant subsystem maintainer - though this acceptance is not a guarantee that the patch will make it all the way to the mainline. The patch will show up in the maintainer's subsystem tree and into the -next trees (described below). When the process works, this step leads to more extensive review of the patch and the discovery of any problems resulting from the integration of this patch with work being done by others.
- **Please note** that most maintainers also have day jobs, so merging your patch may not be their highest priority. If your patch is getting feedback about changes that are needed, you should either make those changes or justify why they should not be made. If your patch has no review complaints but is not being merged by its appropriate subsystem or driver maintainer, you should be persistent in updating the patch to the current kernel so that it applies cleanly and keep sending it for review and merging.
- **Merging into the mainline.** Eventually, a successful patch will be merged into the mainline repository managed by Linus Torvalds. More comments and/or problems may surface at this time; it is important that the developer be responsive to these and fix any issues which arise.
- **Stable release.** The number of users potentially affected by the patch is now large, so, once again, new problems may arise.
- **Long-term maintenance.** While it is certainly possible for a developer to forget about code after merging it, that sort of behavior tends to leave a poor impression in the development community. Merging code eliminates some of the maintenance burden, in that others will fix problems caused by API changes. But the original developer should continue to take responsibility for the code if it is to remain useful in the longer term.

One of the largest mistakes made by kernel developers (or their employers) is to try to cut the process down to a single "merging into the mainline" step. This approach invariably leads to frustration for everybody involved.

How patches get into the Kernel

There is exactly one person who can merge patches into the mainline kernel repository: Linus Torvalds. But, for example, of the over 9,500 patches which went into the 2.6.38 kernel, only 112 (around 1.3%) were directly chosen by Linus himself. The kernel project has long since grown to a size where no single developer could possibly inspect and select every patch unassisted. The way the kernel developers have addressed this growth is through the use of a lieutenant system built around a chain of trust.

The kernel code base is logically broken down into a set of subsystems: networking, specific architecture support, memory management, video devices, etc. Most subsystems have a designated maintainer, a developer who has overall responsibility for the code within that subsystem. These subsystem maintainers are the gatekeepers (in a loose way) for the portion of the kernel they manage; they are the ones who will (usually) accept a patch for inclusion into the mainline kernel.

Subsystem maintainers each manage their own version of the kernel source tree, usually (but certainly not always) using the git source management tool. Tools like git (and related tools like quilt or mercurial) allow maintainers to track a list of patches, including authorship information and other metadata. At any given time, the maintainer can identify which patches in his or her repository are not found in the mainline.

When the merge window opens, top-level maintainers will ask Linus to “pull” the patches they have selected for merging from their repositories. If Linus agrees, the stream of patches will flow up into his repository, becoming part of the mainline kernel. The amount of attention that Linus pays to specific patches received in a pull operation varies. It is clear that, sometimes, he looks quite closely. But, as a general rule, Linus trusts the subsystem maintainers to not send bad patches upstream.

Subsystem maintainers, in turn, can pull patches from other maintainers. For example, the networking tree is built from patches which accumulated first in trees dedicated to network device drivers, wireless networking, etc. This chain of repositories can be arbitrarily long, though it rarely exceeds two or three links. Since each maintainer in the chain trusts those managing lower-level trees, this process is known as the “chain of trust.”

Clearly, in a system like this, getting patches into the kernel depends on finding the right maintainer. Sending patches directly to Linus is not normally the right way to go.

Next trees

The chain of subsystem trees guides the flow of patches into the kernel, but it also raises an interesting question: what if somebody wants to look at all of the patches which are being prepared for the next merge window? Developers will be interested in what other changes are pending to see whether there are any conflicts to worry about; a patch which changes a core kernel function prototype, for example, will conflict with any other patches which use the older form of that function. Reviewers and testers want access to the changes in their integrated form before all of those changes land in the mainline kernel. One could pull changes from all of the interesting subsystem trees, but that would be a big and error-prone job.

The answer comes in the form of -next trees, where subsystem trees are collected for testing and review. The older of these trees, maintained by Andrew Morton, is called “-mm” (for memory management, which is how it got started). The -mm tree integrates patches from a long list of subsystem trees; it also has some patches aimed at helping with debugging.

Beyond that, -mm contains a significant collection of patches which have been selected by Andrew directly. These patches may have been posted on a mailing list, or they may apply to a part of the kernel for which there is no designated subsystem tree. As a result, -mm operates as a sort of subsystem tree of last resort; if there is no other obvious path for a patch into the mainline, it is likely to end up in -mm. Miscellaneous patches which accumulate in -mm will eventually either be forwarded on to an appropriate subsystem tree or be sent directly to Linus. In a typical development cycle, approximately 5-10% of the patches going into the mainline get there via -mm.

The current -mm patch is available in the “mmotm” (-mm of the moment) directory at:

<https://www.ozlabs.org/~akpm/mmotm/>

Use of the MMOTM tree is likely to be a frustrating experience, though; there is a definite chance that it will not even compile.

The primary tree for next-cycle patch merging is linux-next, maintained by Stephen Rothwell. The linux-next tree is, by design, a snapshot of what the mainline is expected to look like after the next merge window closes. Linux-next trees are announced on the linux-kernel and linux-next mailing lists when they are assembled; they can be downloaded from:

<https://www.kernel.org/pub/linux/kernel/next/>

Linux-next has become an integral part of the kernel development process; all patches merged during a given merge window should really have found their way into linux-next some time before the merge window opens.

Staging trees

The kernel source tree contains the drivers/staging/ directory, where many sub-directories for drivers or filesystems that are on their way to being added to the kernel tree live. They remain in drivers/staging while they still need more work; once complete, they can be moved into the kernel proper. This is a way to keep track of drivers that aren't up to Linux kernel coding or quality standards, but people may want to use them and track development.

Greg Kroah-Hartman currently maintains the staging tree. Drivers that still need work are sent to him, with each driver having its own subdirectory in drivers/staging/. Along with the driver source files, a TODO file should be present in the directory as well. The TODO file lists the pending work that the driver needs for acceptance into the kernel proper, as well as a list of people that should be Cc'd for any patches to the driver. Current rules require that drivers contributed to staging must, at a minimum, compile properly.

Staging can be a relatively easy way to get new drivers into the mainline where, with luck, they will come to the attention of other developers and improve quickly. Entry into staging is not the end of the story, though; code in staging which is not seeing regular progress will eventually be removed. Distributors also tend to be relatively reluctant to enable staging drivers. So staging is, at best, a stop on the way toward becoming a proper mainline driver.

Tools

As can be seen from the above text, the kernel development process depends heavily on the ability to herd collections of patches in various directions. The whole thing would not work anywhere near as well as it does without suitably powerful tools. Tutorials on how to use these tools are well beyond the scope of this document, but there is space for a few pointers.

By far the dominant source code management system used by the kernel community is git. Git is one of a number of distributed version control systems being developed in the free software community. It is well tuned for kernel development, in that it performs quite well when dealing with large repositories and large numbers of patches. It also has a reputation for being difficult to learn and use, though it has gotten better over time. Some sort of familiarity with git is almost a requirement for kernel developers; even if they do not use it for their own work, they'll need git to keep up with what other developers (and the mainline) are doing.

Git is now packaged by almost all Linux distributions. There is a home page at:

<https://git-scm.com/>

That page has pointers to documentation and tutorials.

Among the kernel developers who do not use git, the most popular choice is almost certainly Mercurial:

<https://www.selenic.com/mercurial/>

Mercurial shares many features with git, but it provides an interface which many find easier to use.

The other tool worth knowing about is Quilt:

<https://savannah.nongnu.org/projects/quilt/>

Quilt is a patch management system, rather than a source code management system. It does not track history over time; it is, instead, oriented toward tracking a specific set of changes against an evolving code base. Some major subsystem maintainers use quilt to manage patches intended to go upstream. For the management of certain kinds of trees (-mm, for example), quilt is the best tool for the job.

Mailing lists

A great deal of Linux kernel development work is done by way of mailing lists. It is hard to be a fully-functioning member of the community without joining at least one list somewhere. But Linux mailing lists also represent a potential hazard to developers, who risk getting buried under a load of electronic mail, running afoul of the conventions used on the Linux lists, or both.

Most kernel mailing lists are run on vger.kernel.org; the master list can be found at:

<http://vger.kernel.org/vger-lists.html>

There are lists hosted elsewhere, though; a number of them are at redhat.com/mailman/listinfo.

The core mailing list for kernel development is, of course, linux-kernel. This list is an intimidating place to be; volume can reach 500 messages per day, the amount of noise is high, the conversation can be severely technical, and participants are not always concerned with showing a high degree of politeness. But there is no other place where the kernel development community comes together as a whole; developers who avoid this list will miss important information.

There are a few hints which can help with linux-kernel survival:

- Have the list delivered to a separate folder, rather than your main mailbox. One must be able to ignore the stream for sustained periods of time.
- Do not try to follow every conversation - nobody else does. It is important to filter on both the topic of interest (though note that long-running conversations can drift away from the original subject without changing the email subject line) and the people who are participating.
- Do not feed the trolls. If somebody is trying to stir up an angry response, ignore them.
- When responding to linux-kernel email (or that on other lists) preserve the Cc: header for all involved. In the absence of a strong reason (such as an explicit request), you should never remove recipients. Always make sure that the person you are responding to is in the Cc: list. This convention also makes it unnecessary to explicitly ask to be copied on replies to your postings.
- Search the list archives (and the net as a whole) before asking questions. Some developers can get impatient with people who clearly have not done their homework.
- Use interleaved ("inline") replies, which makes your response easier to read. (i.e. avoid top-posting -- the practice of putting your answer above the quoted text you are responding to.) For more details, see [Documentation/process/submitting-patches.rst](#).

- Ask on the correct mailing list. Linux-kernel may be the general meeting point, but it is not the best place to find developers from all subsystems.

The last point - finding the correct mailing list - is a common place for beginning developers to go wrong. Somebody who asks a networking-related question on linux-kernel will almost certainly receive a polite suggestion to ask on the netdev list instead, as that is the list frequented by most networking developers. Other lists exist for the SCSI, video4linux, IDE, filesystem, etc. subsystems. The best place to look for mailing lists is in the MAINTAINERS file packaged with the kernel source.

Getting started with Kernel development

Questions about how to get started with the kernel development process are common - from both individuals and companies. Equally common are missteps which make the beginning of the relationship harder than it has to be.

Companies often look to hire well-known developers to get a development group started. This can, in fact, be an effective technique. But it also tends to be expensive and does not do much to grow the pool of experienced kernel developers. It is possible to bring in-house developers up to speed on Linux kernel development, given the investment of a bit of time. Taking this time can endow an employer with a group of developers who understand the kernel and the company both, and who can help to train others as well. Over the medium term, this is often the more profitable approach.

Individual developers are often, understandably, at a loss for a place to start. Beginning with a large project can be intimidating; one often wants to test the waters with something smaller first. This is the point where some developers jump into the creation of patches fixing spelling errors or minor coding style issues. Unfortunately, such patches create a level of noise which is distracting for the development community as a whole, so, increasingly, they are looked down upon. New developers wishing to introduce themselves to the community will not get the sort of reception they wish for by these means.

Andrew Morton gives this advice for aspiring kernel developers

The #1 project for all kernel beginners should surely be "make sure that the kernel runs perfectly at all times on all machines which you can lay your hands on". Usually the way to do this is to work with others on getting things fixed up (this can require persistence!) but that's fine - it's a part of kernel development.

(<https://lwn.net/Articles/283982/>).

In the absence of obvious problems to fix, developers are advised to look at the current lists of regressions and open bugs in general. There is never any shortage of issues in need of fixing; by addressing these issues, developers will gain experience with the process while, at the same time, building respect with the rest of the development community.

* Early-stage planning

When contemplating a Linux kernel development project, it can be tempting to jump right in and start coding. As with any significant project, though, much of the groundwork for success is best laid before the first line of code is written. Some time spent in early planning and communication can save far more time later on.

Specifying the problem

Like any engineering project, a successful kernel enhancement starts with a clear description of the problem to be solved. In some cases, this step is easy: when a driver is needed for a specific piece of hardware, for example. In others, though, it is tempting to confuse the real problem with the proposed solution, and that can lead to difficulties.

Consider an example: some years ago, developers working with Linux audio sought a way to run applications without dropouts or other artifacts caused by excessive latency in the system. The solution they arrived at was a kernel module intended to hook into the Linux Security Module (LSM) framework; this module could be configured to give specific applications access to the realtime scheduler. This module was implemented and sent to the linux-kernel mailing list, where it immediately ran into problems.

To the audio developers, this security module was sufficient to solve their immediate problem. To the wider kernel community, though, it was seen as a misuse of the LSM framework (which is not intended to confer privileges onto processes which they would not otherwise have) and a risk to system stability. Their preferred solutions involved realtime scheduling access via the rlimit mechanism for the short term, and ongoing latency reduction work in the long term.

The audio community, however, could not see past the particular solution they had implemented; they were unwilling to accept alternatives. The resulting disagreement left those developers feeling disillusioned with the entire kernel development process; one of them went back to an audio list and posted this:

There are a number of very good Linux kernel developers, but they tend to get outshouted by a large crowd of arrogant fools. Trying to communicate user requirements to these people is a waste of time. They are much too "intelligent" to listen to lesser mortals.

(<https://lwn.net/Articles/131776/>).

The reality of the situation was different; the kernel developers were far more concerned about system stability, long-term maintenance, and finding the right solution to the problem than they were with a specific module. The moral of the story is to focus on the problem - not a specific solution - and to discuss it with the development community before investing in the creation of a body of code.

So, when contemplating a kernel development project, one should obtain answers to a short set of questions:

- What, exactly, is the problem which needs to be solved?
- Who are the users affected by this problem? Which use cases should the solution address?
- How does the kernel fall short in addressing that problem now?

Only then does it make sense to start considering possible solutions.

Early discussion

When planning a kernel development project, it makes great sense to hold discussions with the community before launching into implementation. Early communication can save time and trouble in a number of ways:

- It may well be that the problem is addressed by the kernel in ways which you have not understood. The Linux kernel is large and has a number of features and capabilities which are not immediately obvious. Not all kernel capabilities are documented as well as one might like, and it is easy to miss things. Your author has seen the posting of a complete driver which duplicated an existing driver that the new author had been unaware of. Code which reinvents existing wheels is not only wasteful; it will also not be accepted into the mainline kernel.
- There may be elements of the proposed solution which will not be acceptable for mainline merging. It is better to find out about problems like this before writing the code.
- It's entirely possible that other developers have thought about the problem; they may have ideas for a better solution, and may be willing to help in the creation of that solution.

Years of experience with the kernel development community have taught a clear lesson: kernel code which is designed and developed behind closed doors invariably has problems which are only revealed when the code is released into the community. Sometimes these problems are severe, requiring months or years of effort before the code can be brought up to the kernel community's standards. Some examples include:

- The Devicescape network stack was designed and implemented for single-processor systems. It could not be merged into the mainline until it was made suitable for multiprocessor systems. Retrofitting locking and such into code is a difficult task; as a result, the merging of this code (now called `mac80211`) was delayed for over a year.
- The Reiser4 filesystem included a number of capabilities which, in the core kernel developers' opinion, should have been implemented in the virtual filesystem layer instead. It also included features which could not easily be implemented without exposing the system to user-caused deadlocks. The late revelation of these problems - and refusal to address some of them - has caused Reiser4 to stay out of the mainline kernel.
- The AppArmor security module made use of internal virtual filesystem data structures in ways which were considered to be unsafe and unreliable. This concern (among others) kept AppArmor out of the mainline for years.

In each of these cases, a great deal of pain and extra work could have been avoided with some early discussion with the kernel developers.

Who do you talk to?

When developers decide to take their plans public, the next question will be: where do we start? The answer is to find the right mailing list(s) and the right maintainer. For mailing lists, the best approach is to look in the MAINTAINERS file for a relevant place to post. If there is a suitable subsystem list, posting there is often preferable to posting on `linux-kernel`; you are more likely to reach developers with expertise in the relevant subsystem and the environment may be more supportive.

Finding maintainers can be a bit harder. Again, the MAINTAINERS file is the place to start. That file tends to not always be up to date, though, and not all subsystems are represented there.

The person listed in the MAINTAINERS file may, in fact, not be the person who is actually acting in that role currently. So, when there is doubt about who to contact, a useful trick is to use git (and "git log" in particular) to see who is currently active within the subsystem of interest. Look at who is writing patches, and who, if anybody, is attaching Signed-off-by lines to those patches. Those are the people who will be best placed to help with a new development project.

The task of finding the right maintainer is sometimes challenging enough that the kernel developers have added a script to ease the process:

```
.../scripts/get_maintainer.pl
```

This script will return the current maintainer(s) for a given file or directory when given the "-f" option. If passed a patch on the command line, it will list the maintainers who should probably receive copies of the patch. This is the preferred way (unlike "-f" option) to get the list of people to Cc for your patches. There are a number of options regulating how hard get_maintainer.pl will search for maintainers; please be careful about using the more aggressive options as you may end up including developers who have no real interest in the code you are modifying.

If all else fails, talking to Andrew Morton can be an effective way to track down a maintainer for a specific piece of code.

When to post?

If possible, posting your plans during the early stages can only be helpful. Describe the problem being solved and any plans that have been made on how the implementation will be done. Any information you can provide can help the development community provide useful input on the project.

One discouraging thing which can happen at this stage is not a hostile reaction, but, instead, little or no reaction at all. The sad truth of the matter is (1) kernel developers tend to be busy, (2) there is no shortage of people with grand plans and little code (or even prospect of code) to back them up, and (3) nobody is obligated to review or comment on ideas posted by others. Beyond that, high-level designs often hide problems which are only revealed when somebody actually tries to implement those designs; for that reason, kernel developers would rather see the code.

If a request-for-comments posting yields little in the way of comments, do not assume that it means there is no interest in the project. Unfortunately, you also cannot assume that there are no problems with your idea. The best thing to do in this situation is to proceed, keeping the community informed as you go.

Getting official buy-in

If your work is being done in a corporate environment - as most Linux kernel work is - you must, obviously, have permission from suitably empowered managers before you can post your company's plans or code to a public mailing list. The posting of code which has not been cleared for release under a GPL-compatible license can be especially problematic; the sooner that a company's management and legal staff can agree on the posting of a kernel development project, the better off everybody involved will be.

Some readers may be thinking at this point that their kernel work is intended to support a product which does not yet have an officially acknowledged existence. Revealing their employer's

plans on a public mailing list may not be a viable option. In cases like this, it is worth considering whether the secrecy is really necessary; there is often no real need to keep development plans behind closed doors.

That said, there are also cases where a company legitimately cannot disclose its plans early in the development process. Companies with experienced kernel developers may choose to proceed in an open-loop manner on the assumption that they will be able to avoid serious integration problems later. For companies without that sort of in-house expertise, the best option is often to hire an outside developer to review the plans under a non-disclosure agreement. The Linux Foundation operates an NDA program designed to help with this sort of situation; more information can be found at:

<https://www.linuxfoundation.org/nda/>

This kind of review is often enough to avoid serious problems later on without requiring public disclosure of the project.

* Getting the code right

While there is much to be said for a solid and community-oriented design process, the proof of any kernel development project is in the resulting code. It is the code which will be examined by other developers and merged (or not) into the mainline tree. So it is the quality of this code which will determine the ultimate success of the project.

This section will examine the coding process. We'll start with a look at a number of ways in which kernel developers can go wrong. Then the focus will shift toward doing things right and the tools which can help in that quest.

Pitfalls

Coding style

The kernel has long had a standard coding style, described in *Documentation/process/coding-style.rst*. For much of that time, the policies described in that file were taken as being, at most, advisory. As a result, there is a substantial amount of code in the kernel which does not meet the coding style guidelines. The presence of that code leads to two independent hazards for kernel developers.

The first of these is to believe that the kernel coding standards do not matter and are not enforced. The truth of the matter is that adding new code to the kernel is very difficult if that code is not coded according to the standard; many developers will request that the code be reformatted before they will even review it. A code base as large as the kernel requires some uniformity of code to make it possible for developers to quickly understand any part of it. So there is no longer room for strangely-formatted code.

Occasionally, the kernel's coding style will run into conflict with an employer's mandated style. In such cases, the kernel's style will have to win before the code can be merged. Putting code into the kernel means giving up a degree of control in a number of ways - including control over how the code is formatted.

The other trap is to assume that code which is already in the kernel is urgently in need of coding style fixes. Developers may start to generate reformatting patches as a way of gaining familiarity with the process, or as a way of getting their name into the kernel changelogs - or

both. But pure coding style fixes are seen as noise by the development community; they tend to get a chilly reception. So this type of patch is best avoided. It is natural to fix the style of a piece of code while working on it for other reasons, but coding style changes should not be made for their own sake.

The coding style document also should not be read as an absolute law which can never be transgressed. If there is a good reason to go against the style (a line which becomes far less readable if split to fit within the 80-column limit, for example), just do it.

Note that you can also use the `clang-format` tool to help you with these rules, to quickly re-format parts of your code automatically, and to review full files in order to spot coding style mistakes, typos and possible improvements. It is also handy for sorting `#includes`, for aligning variables/macros, for reflowing text and other similar tasks. See the file [Documentation/process/clang-format.rst](#) for more details.

Some basic editor settings, such as indentation and line endings, will be set automatically if you are using an editor that is compatible with EditorConfig. See the official EditorConfig website for more information: <https://editorconfig.org/>

Abstraction layers

Computer Science professors teach students to make extensive use of abstraction layers in the name of flexibility and information hiding. Certainly the kernel makes extensive use of abstraction; no project involving several million lines of code could do otherwise and survive. But experience has shown that excessive or premature abstraction can be just as harmful as premature optimization. Abstraction should be used to the level required and no further.

At a simple level, consider a function which has an argument which is always passed as zero by all callers. One could retain that argument just in case somebody eventually needs to use the extra flexibility that it provides. By that time, though, chances are good that the code which implements this extra argument has been broken in some subtle way which was never noticed - because it has never been used. Or, when the need for extra flexibility arises, it does not do so in a way which matches the programmer's early expectation. Kernel developers will routinely submit patches to remove unused arguments; they should, in general, not be added in the first place.

Abstraction layers which hide access to hardware - often to allow the bulk of a driver to be used with multiple operating systems - are especially frowned upon. Such layers obscure the code and may impose a performance penalty; they do not belong in the Linux kernel.

On the other hand, if you find yourself copying significant amounts of code from another kernel subsystem, it is time to ask whether it would, in fact, make sense to pull out some of that code into a separate library or to implement that functionality at a higher level. There is no value in replicating the same code throughout the kernel.

#ifdef and preprocessor use in general

The C preprocessor seems to present a powerful temptation to some C programmers, who see it as a way to efficiently encode a great deal of flexibility into a source file. But the preprocessor is not C, and heavy use of it results in code which is much harder for others to read and harder for the compiler to check for correctness. Heavy preprocessor use is almost always a sign of code which needs some cleanup work.

Conditional compilation with `#ifdef` is, indeed, a powerful feature, and it is used within the kernel. But there is little desire to see code which is sprinkled liberally with `#ifdef` blocks. As a general rule, `#ifdef` use should be confined to header files whenever possible. Conditionally-compiled code can be confined to functions which, if the code is not to be present, simply become empty. The compiler will then quietly optimize out the call to the empty function. The result is far cleaner code which is easier to follow.

C preprocessor macros present a number of hazards, including possible multiple evaluation of expressions with side effects and no type safety. If you are tempted to define a macro, consider creating an inline function instead. The code which results will be the same, but inline functions are easier to read, do not evaluate their arguments multiple times, and allow the compiler to perform type checking on the arguments and return value.

Inline functions

Inline functions present a hazard of their own, though. Programmers can become enamored of the perceived efficiency inherent in avoiding a function call and fill a source file with inline functions. Those functions, however, can actually reduce performance. Since their code is replicated at each call site, they end up bloating the size of the compiled kernel. That, in turn, creates pressure on the processor's memory caches, which can slow execution dramatically. Inline functions, as a rule, should be quite small and relatively rare. The cost of a function call, after all, is not that high; the creation of large numbers of inline functions is a classic example of premature optimization.

In general, kernel programmers ignore cache effects at their peril. The classic time/space trade-off taught in beginning data structures classes often does not apply to contemporary hardware. *Space is time*, in that a larger program will run slower than one which is more compact.

More recent compilers take an increasingly active role in deciding whether a given function should actually be inlined or not. So the liberal placement of "inline" keywords may not just be excessive; it could also be irrelevant.

Locking

In May, 2006, the "Devicescape" networking stack was, with great fanfare, released under the GPL and made available for inclusion in the mainline kernel. This donation was welcome news; support for wireless networking in Linux was considered substandard at best, and the Devicescape stack offered the promise of fixing that situation. Yet, this code did not actually make it into the mainline until June, 2007 (2.6.22). What happened?

This code showed a number of signs of having been developed behind corporate doors. But one large problem in particular was that it was not designed to work on multiprocessor systems. Before this networking stack (now called `mac80211`) could be merged, a locking scheme needed to be retrofitted onto it.

Once upon a time, Linux kernel code could be developed without thinking about the concurrency issues presented by multiprocessor systems. Now, however, this document is being written on a dual-core laptop. Even on single-processor systems, work being done to improve responsiveness will raise the level of concurrency within the kernel. The days when kernel code could be written without thinking about locking are long past.

Any resource (data structures, hardware registers, etc.) which could be accessed concurrently by more than one thread must be protected by a lock. New code should be written with this requirement in mind; retrofitting locking after the fact is a rather more difficult task. Kernel developers should take the time to understand the available locking primitives well enough to pick the right tool for the job. Code which shows a lack of attention to concurrency will have a difficult path into the mainline.

Regressions

One final hazard worth mentioning is this: it can be tempting to make a change (which may bring big improvements) which causes something to break for existing users. This kind of change is called a “regression,” and regressions have become most unwelcome in the mainline kernel. With few exceptions, changes which cause regressions will be backed out if the regression cannot be fixed in a timely manner. Far better to avoid the regression in the first place.

It is often argued that a regression can be justified if it causes things to work for more people than it creates problems for. Why not make a change if it brings new functionality to ten systems for each one it breaks? The best answer to this question was expressed by Linus in July, 2007:

So we don't fix bugs by introducing new problems. That way lies madness, and nobody ever knows if you actually make any real progress at all. Is it two steps forwards, one step back, or one step forward and two steps back?

(<https://lwn.net/Articles/243460/>).

An especially unwelcome type of regression is any sort of change to the user-space ABI. Once an interface has been exported to user space, it must be supported indefinitely. This fact makes the creation of user-space interfaces particularly challenging: since they cannot be changed in incompatible ways, they must be done right the first time. For this reason, a great deal of thought, clear documentation, and wide review for user-space interfaces is always required.

Code checking tools

For now, at least, the writing of error-free code remains an ideal that few of us can reach. What we can hope to do, though, is to catch and fix as many of those errors as possible before our code goes into the mainline kernel. To that end, the kernel developers have put together an impressive array of tools which can catch a wide variety of obscure problems in an automated way. Any problem caught by the computer is a problem which will not afflict a user later on, so it stands to reason that the automated tools should be used whenever possible.

The first step is simply to heed the warnings produced by the compiler. Contemporary versions of gcc can detect (and warn about) a large number of potential errors. Quite often, these warnings point to real problems. Code submitted for review should, as a rule, not produce any compiler warnings. When silencing warnings, take care to understand the real cause and try to avoid “fixes” which make the warning go away without addressing its cause.

Note that not all compiler warnings are enabled by default. Build the kernel with "make KCFLAGS=-W" to get the full set.

The kernel provides several configuration options which turn on debugging features; most of these are found in the "kernel hacking" submenu. Several of these options should be turned on for any kernel used for development or testing purposes. In particular, you should turn on:

- `FRAME_WARN` to get warnings for stack frames larger than a given amount. The output generated can be verbose, but one need not worry about warnings from other parts of the kernel.
- `DEBUG_OBJECTS` will add code to track the lifetime of various objects created by the kernel and warn when things are done out of order. If you are adding a subsystem which creates (and exports) complex objects of its own, consider adding support for the object debugging infrastructure.
- `DEBUG_SLAB` can find a variety of memory allocation and use errors; it should be used on most development kernels.
- `DEBUG_SPINLOCK`, `DEBUG_ATOMIC_SLEEP`, and `DEBUG_MUTEXES` will find a number of common locking errors.

There are quite a few other debugging options, some of which will be discussed below. Some of them have a significant performance impact and should not be used all of the time. But some time spent learning the available options will likely be paid back many times over in short order.

One of the heavier debugging tools is the locking checker, or "lockdep." This tool will track the acquisition and release of every lock (spinlock or mutex) in the system, the order in which locks are acquired relative to each other, the current interrupt environment, and more. It can then ensure that locks are always acquired in the same order, that the same interrupt assumptions apply in all situations, and so on. In other words, lockdep can find a number of scenarios in which the system could, on rare occasion, deadlock. This kind of problem can be painful (for both developers and users) in a deployed system; lockdep allows them to be found in an automated manner ahead of time. Code with any sort of non-trivial locking should be run with lockdep enabled before being submitted for inclusion.

As a diligent kernel programmer, you will, beyond doubt, check the return status of any operation (such as a memory allocation) which can fail. The fact of the matter, though, is that the resulting failure recovery paths are, probably, completely untested. Untested code tends to be broken code; you could be much more confident of your code if all those error-handling paths had been exercised a few times.

The kernel provides a fault injection framework which can do exactly that, especially where memory allocations are involved. With fault injection enabled, a configurable percentage of memory allocations will be made to fail; these failures can be restricted to a specific range of code. Running with fault injection enabled allows the programmer to see how the code responds when things go badly. See [Documentation/fault-injection/fault-injection.rst](#) for more information on how to use this facility.

Other kinds of errors can be found with the "sparse" static analysis tool. With sparse, the programmer can be warned about confusion between user-space and kernel-space addresses, mixture of big-endian and small-endian quantities, the passing of integer values where a set of bit flags is expected, and so on. Sparse must be installed separately (it can be found at https://sparse.wiki.kernel.org/index.php/Main_Page if your distributor does not package it); it can then be run on the code by adding "C=1" to your make command.

The “Coccinelle” tool (<http://coccinelle.lip6.fr/>) is able to find a wide variety of potential coding problems; it can also propose fixes for those problems. Quite a few “semantic patches” for the kernel have been packaged under the `scripts/coccinelle` directory; running “`make coccicheck`” will run through those semantic patches and report on any problems found. See `Documentation/dev-tools/coccinelle.rst` for more information.

Other kinds of portability errors are best found by compiling your code for other architectures. If you do not happen to have an S/390 system or a Blackfin development board handy, you can still perform the compilation step. A large set of cross compilers for x86 systems can be found at

<https://www.kernel.org/pub/tools/crosstool/>

Some time spent installing and using these compilers will help avoid embarrassment later.

Documentation

Documentation has often been more the exception than the rule with kernel development. Even so, adequate documentation will help to ease the merging of new code into the kernel, make life easier for other developers, and will be helpful for your users. In many cases, the addition of documentation has become essentially mandatory.

The first piece of documentation for any patch is its associated changelog. Log entries should describe the problem being solved, the form of the solution, the people who worked on the patch, any relevant effects on performance, and anything else that might be needed to understand the patch. Be sure that the changelog says *why* the patch is worth applying; a surprising number of developers fail to provide that information.

Any code which adds a new user-space interface - including new sysfs or /proc files - should include documentation of that interface which enables user-space developers to know what they are working with. See `Documentation/ABI/README` for a description of how this documentation should be formatted and what information needs to be provided.

The file `Documentation/admin-guide/kernel-parameters.rst` describes all of the kernel's boot-time parameters. Any patch which adds new parameters should add the appropriate entries to this file.

Any new configuration options must be accompanied by help text which clearly explains the options and when the user might want to select them.

Internal API information for many subsystems is documented by way of specially-formatted comments; these comments can be extracted and formatted in a number of ways by the “kernel-doc” script. If you are working within a subsystem which has kerneldoc comments, you should maintain them and add them, as appropriate, for externally-available functions. Even in areas which have not been so documented, there is no harm in adding kerneldoc comments for the future; indeed, this can be a useful activity for beginning kernel developers. The format of these comments, along with some information on how to create kerneldoc templates can be found at `Documentation/doc-guide/`.

Anybody who reads through a significant amount of existing kernel code will note that, often, comments are most notable by their absence. Once again, the expectations for new code are higher than they were in the past; merging uncommented code will be harder. That said, there is little desire for verbosely-commented code. The code should, itself, be readable, with comments explaining the more subtle aspects.

Certain things should always be commented. Uses of memory barriers should be accompanied by a line explaining why the barrier is necessary. The locking rules for data structures generally need to be explained somewhere. Major data structures need comprehensive documentation in general. Non-obvious dependencies between separate bits of code should be pointed out. Anything which might tempt a code janitor to make an incorrect "cleanup" needs a comment saying why it is done the way it is. And so on.

Internal API changes

The binary interface provided by the kernel to user space cannot be broken except under the most severe circumstances. The kernel's internal programming interfaces, instead, are highly fluid and can be changed when the need arises. If you find yourself having to work around a kernel API, or simply not using a specific functionality because it does not meet your needs, that may be a sign that the API needs to change. As a kernel developer, you are empowered to make such changes.

There are, of course, some catches. API changes can be made, but they need to be well justified. So any patch making an internal API change should be accompanied by a description of what the change is and why it is necessary. This kind of change should also be broken out into a separate patch, rather than buried within a larger patch.

The other catch is that a developer who changes an internal API is generally charged with the task of fixing any code within the kernel tree which is broken by the change. For a widely-used function, this duty can lead to literally hundreds or thousands of changes - many of which are likely to conflict with work being done by other developers. Needless to say, this can be a large job, so it is best to be sure that the justification is solid. Note that the Coccinelle tool can help with wide-ranging API changes.

When making an incompatible API change, one should, whenever possible, ensure that code which has not been updated is caught by the compiler. This will help you to be sure that you have found all in-tree uses of that interface. It will also alert developers of out-of-tree code that there is a change that they need to respond to. Supporting out-of-tree code is not something that kernel developers need to be worried about, but we also do not have to make life harder for out-of-tree developers than it needs to be.

* Posting patches

Sooner or later, the time comes when your work is ready to be presented to the community for review and, eventually, inclusion into the mainline kernel. Unsurprisingly, the kernel development community has evolved a set of conventions and procedures which are used in the posting of patches; following them will make life much easier for everybody involved. This document will attempt to cover these expectations in reasonable detail; more information can also be found in the files [Documentation/process/submitting-patches.rst](#) and [Documentation/process/submit-checklist.rst](#).

When to post

There is a constant temptation to avoid posting patches before they are completely “ready.” For simple patches, that is not a problem. If the work being done is complex, though, there is a lot to be gained by getting feedback from the community before the work is complete. So you should consider posting in-progress work, or even making a git tree available so that interested developers can catch up with your work at any time.

When posting code which is not yet considered ready for inclusion, it is a good idea to say so in the posting itself. Also mention any major work which remains to be done and any known problems. Fewer people will look at patches which are known to be half-baked, but those who do will come in with the idea that they can help you drive the work in the right direction.

Before creating patches

There are a number of things which should be done before you consider sending patches to the development community. These include:

- Test the code to the extent that you can. Make use of the kernel's debugging tools, ensure that the kernel will build with all reasonable combinations of configuration options, use cross-compilers to build for different architectures, etc.
- Make sure your code is compliant with the kernel coding style guidelines.
- Does your change have performance implications? If so, you should run benchmarks showing what the impact (or benefit) of your change is; a summary of the results should be included with the patch.
- Be sure that you have the right to post the code. If this work was done for an employer, the employer likely has a right to the work and must be agreeable with its release under the GPL.

As a general rule, putting in some extra thought before posting code almost always pays back the effort in short order.

Patch preparation

The preparation of patches for posting can be a surprising amount of work, but, once again, attempting to save time here is not generally advisable even in the short term.

Patches must be prepared against a specific version of the kernel. As a general rule, a patch should be based on the current mainline as found in Linus's git tree. When basing on mainline, start with a well-known release point - a stable or -rc release - rather than branching off the mainline at an arbitrary spot.

It may become necessary to make versions against -mm, linux-next, or a subsystem tree, though, to facilitate wider testing and review. Depending on the area of your patch and what is going on elsewhere, basing a patch against these other trees can require a significant amount of work resolving conflicts and dealing with API changes.

Only the most simple changes should be formatted as a single patch; everything else should be made as a logical series of changes. Splitting up patches is a bit of an art; some developers spend a long time figuring out how to do it in the way that the community expects. There are a few rules of thumb, however, which can help considerably:

- The patch series you post will almost certainly not be the series of changes found in your working revision control system. Instead, the changes you have made need to be considered in their final form, then split apart in ways which make sense. The developers are interested in discrete, self-contained changes, not the path you took to get to those changes.
- Each logically independent change should be formatted as a separate patch. These changes can be small ("add a field to this structure") or large (adding a significant new driver, for example), but they should be conceptually small and amenable to a one-line description. Each patch should make a specific change which can be reviewed on its own and verified to do what it says it does.
- As a way of restating the guideline above: do not mix different types of changes in the same patch. If a single patch fixes a critical security bug, rearranges a few structures, and reformats the code, there is a good chance that it will be passed over and the important fix will be lost.
- Each patch should yield a kernel which builds and runs properly; if your patch series is interrupted in the middle, the result should still be a working kernel. Partial application of a patch series is a common scenario when the "git bisect" tool is used to find regressions; if the result is a broken kernel, you will make life harder for developers and users who are engaging in the noble work of tracking down problems.
- Do not overdo it, though. One developer once posted a set of edits to a single file as 500 separate patches - an act which did not make him the most popular person on the kernel mailing list. A single patch can be reasonably large as long as it still contains a single *logical* change.
- It can be tempting to add a whole new infrastructure with a series of patches, but to leave that infrastructure unused until the final patch in the series enables the whole thing. This temptation should be avoided if possible; if that series adds regressions, bisection will finger the last patch as the one which caused the problem, even though the real bug is elsewhere. Whenever possible, a patch which adds new code should make that code active immediately.

Working to create the perfect patch series can be a frustrating process which takes quite a bit of time and thought after the "real work" has been done. When done properly, though, it is time well spent.

Patch formatting and changelogs

So now you have a perfect series of patches for posting, but the work is not done quite yet. Each patch needs to be formatted into a message which quickly and clearly communicates its purpose to the rest of the world. To that end, each patch will be composed of the following:

- An optional "From" line naming the author of the patch. This line is only necessary if you are passing on somebody else's patch via email, but it never hurts to add it when in doubt.
- A one-line description of what the patch does. This message should be enough for a reader who sees it with no other context to figure out the scope of the patch; it is the line that will show up in the "short form" changelogs. This message is usually formatted with the relevant subsystem name first, followed by the purpose of the patch. For example:

```
gpio: fix build on CONFIG_GPIO_SYSFS=n
```


- A blank line followed by a detailed description of the contents of the patch. This description can be as long as is required; it should say what the patch does and why it should be applied to the kernel.
- One or more tag lines, with, at a minimum, one Signed-off-by: line from the author of the patch. Tags will be described in more detail below.

The items above, together, form the changelog for the patch. Writing good changelogs is a crucial but often-neglected art; it's worth spending another moment discussing this issue. When writing a changelog, you should bear in mind that a number of different people will be reading your words. These include subsystem maintainers and reviewers who need to decide whether the patch should be included, distributors and other maintainers trying to decide whether a patch should be backported to other kernels, bug hunters wondering whether the patch is responsible for a problem they are chasing, users who want to know how the kernel has changed, and more. A good changelog conveys the needed information to all of these people in the most direct and concise way possible.

To that end, the summary line should describe the effects of and motivation for the change as well as possible given the one-line constraint. The detailed description can then amplify on those topics and provide any needed additional information. If the patch fixes a bug, cite the commit which introduced the bug if possible (and please provide both the commit ID and the title when citing commits). If a problem is associated with specific log or compiler output, include that output to help others searching for a solution to the same problem. If the change is meant to support other changes coming in later patch, say so. If internal APIs are changed, detail those changes and how other developers should respond. In general, the more you can put yourself into the shoes of everybody who will be reading your changelog, the better that changelog (and the kernel as a whole) will be.

Needless to say, the changelog should be the text used when committing the change to a revision control system. It will be followed by:

- The patch itself, in the unified ("-u") patch format. Using the "-p" option to diff will associate function names with changes, making the resulting patch easier for others to read.

You should avoid including changes to irrelevant files (those generated by the build process, for example, or editor backup files) in the patch. The file "dontdiff" in the Documentation directory can help in this regard; pass it to diff with the "-X" option.

The tags already briefly mentioned above are used to provide insights how the patch came into being. They are described in detail in the [Documentation/process/submitting-patches.rst](#) document; what follows here is a brief summary.

One tag is used to refer to earlier commits which introduced problems fixed by the patch:

```
Fixes: 1f2e3d4c5b6a ("The first line of the commit specified by the first 12
↳ characters of its SHA-1 ID")
```

Another tag is used for linking web pages with additional backgrounds or details, for example an earlier discussion which leads to the patch or a document with a specification implemented by the patch:

```
Link: https://example.com/somewhere.html  optional-other-stuff
```

Many maintainers when applying a patch also add this tag to link to the latest public review posting of the patch; often this is automatically done by tools like b4 or a git hook like the one described in 'Documentation/maintainer/configure-git.rst'.

If the URL points to a public bug report being fixed by the patch, use the "Closes:" tag instead:

`Closes: https://example.com/issues/1234 optional-other-stuff`

Some bug trackers have the ability to close issues automatically when a commit with such a tag is applied. Some bots monitoring mailing lists can also track such tags and take certain actions. Private bug trackers and invalid URLs are forbidden.

Another kind of tag is used to document who was involved in the development of the patch. Each of these uses this format:

`tag: Full Name <email address> optional-other-stuff`

The tags in common use are:

- **Signed-off-by:** this is a developer's certification that he or she has the right to submit the patch for inclusion into the kernel. It is an agreement to the Developer's Certificate of Origin, the full text of which can be found in [Documentation/process/submitting-patches.rst](#). Code without a proper signoff cannot be merged into the mainline.
- **Co-developed-by:** states that the patch was co-created by several developers; it is used to give attribution to co-authors (in addition to the author attributed by the `From:` tag) when multiple people work on a single patch. Every `Co-developed-by:` must be immediately followed by a `Signed-off-by:` of the associated co-author. Details and examples can be found in [Documentation/process/submitting-patches.rst](#).
- **Acked-by:** indicates an agreement by another developer (often a maintainer of the relevant code) that the patch is appropriate for inclusion into the kernel.
- **Tested-by:** states that the named person has tested the patch and found it to work.
- **Reviewed-by:** the named developer has reviewed the patch for correctness; see the reviewer's statement in [Documentation/process/submitting-patches.rst](#) for more detail.
- **Reported-by:** names a user who reported a problem which is fixed by this patch; this tag is used to give credit to the (often underappreciated) people who test our code and let us know when things do not work correctly. Note, this tag should be followed by a `Closes:` tag pointing to the report, unless the report is not available on the web. The `Link:` tag can be used instead of `Closes:` if the patch fixes a part of the issue(s) being reported.
- **Cc:** the named person received a copy of the patch and had the opportunity to comment on it.

Be careful in the addition of tags to your patches, as only `Cc:` is appropriate for addition without the explicit permission of the person named; using `Reported-by:` is fine most of the time as well, but ask for permission if the bug was reported in private.

Sending the patch

Before you mail your patches, there are a couple of other things you should take care of:

- Are you sure that your mailer will not corrupt the patches? Patches which have had gratuitous white-space changes or line wrapping performed by the mail client will not apply at the other end, and often will not be examined in any detail. If there is any doubt at all, mail the patch to yourself and convince yourself that it shows up intact.

[Documentation/process/email-clients.rst](#) has some helpful hints on making specific mail clients work for sending patches.

- Are you sure your patch is free of silly mistakes? You should always run patches through `scripts/checkpatch.pl` and address the complaints it comes up with. Please bear in mind that `checkpatch.pl`, while being the embodiment of a fair amount of thought about what kernel patches should look like, is not smarter than you. If fixing a `checkpatch.pl` complaint would make the code worse, don't do it.

Patches should always be sent as plain text. Please do not send them as attachments; that makes it much harder for reviewers to quote sections of the patch in their replies. Instead, just put the patch directly into your message.

When mailing patches, it is important to send copies to anybody who might be interested in it. Unlike some other projects, the kernel encourages people to err on the side of sending too many copies; don't assume that the relevant people will see your posting on the mailing lists. In particular, copies should go to:

- The maintainer(s) of the affected subsystem(s). As described earlier, the MAINTAINERS file is the first place to look for these people.
- Other developers who have been working in the same area - especially those who might be working there now. Using `git` to see who else has modified the files you are working on can be helpful.
- If you are responding to a bug report or a feature request, copy the original poster as well.
- Send a copy to the relevant mailing list, or, if nothing else applies, the linux-kernel list.
- If you are fixing a bug, think about whether the fix should go into the next stable update. If so, stable@vger.kernel.org should get a copy of the patch. Also add a "Cc: stable@vger.kernel.org" to the tags within the patch itself; that will cause the stable team to get a notification when your fix goes into the mainline.

When selecting recipients for a patch, it is good to have an idea of who you think will eventually accept the patch and get it merged. While it is possible to send patches directly to Linus Torvalds and have him merge them, things are not normally done that way. Linus is busy, and there are subsystem maintainers who watch over specific parts of the kernel. Usually you will be wanting that maintainer to merge your patches. If there is no obvious maintainer, Andrew Morton is often the patch target of last resort.

Patches need good subject lines. The canonical format for a patch line is something like:

```
[PATCH nn/mm] subsys: one-line description of the patch
```

where "nn" is the ordinal number of the patch, "mm" is the total number of patches in the series, and "subsys" is the name of the affected subsystem. Clearly, nn/mm can be omitted for a single, standalone patch.

If you have a significant series of patches, it is customary to send an introductory description as part zero. This convention is not universally followed though; if you use it, remember that information in the introduction does not make it into the kernel changelogs. So please ensure that the patches, themselves, have complete changelog information.

In general, the second and following parts of a multi-part patch should be sent as a reply to the first part so that they all thread together at the receiving end. Tools like git and quilt have commands to mail out a set of patches with the proper threading. If you have a long series, though, and are using git, please stay away from the `--chain-reply-to` option to avoid creating exceptionally deep nesting.

*** Followthrough**

At this point, you have followed the guidelines given so far and, with the addition of your own engineering skills, have posted a perfect series of patches. One of the biggest mistakes that even experienced kernel developers can make is to conclude that their work is now done. In truth, posting patches indicates a transition into the next stage of the process, with, possibly, quite a bit of work yet to be done.

It is a rare patch which is so good at its first posting that there is no room for improvement. The kernel development process recognizes this fact, and, as a result, is heavily oriented toward the improvement of posted code. You, as the author of that code, will be expected to work with the kernel community to ensure that your code is up to the kernel's quality standards. A failure to participate in this process is quite likely to prevent the inclusion of your patches into the mainline.

Working with reviewers

A patch of any significance will result in a number of comments from other developers as they review the code. Working with reviewers can be, for many developers, the most intimidating part of the kernel development process. Life can be made much easier, though, if you keep a few things in mind:

- If you have explained your patch well, reviewers will understand its value and why you went to the trouble of writing it. But that value will not keep them from asking a fundamental question: what will it be like to maintain a kernel with this code in it five or ten years later? Many of the changes you may be asked to make - from coding style tweaks to substantial rewrites - come from the understanding that Linux will still be around and under development a decade from now.
- Code review is hard work, and it is a relatively thankless occupation; people remember who wrote kernel code, but there is little lasting fame for those who reviewed it. So reviewers can get grumpy, especially when they see the same mistakes being made over and over again. If you get a review which seems angry, insulting, or outright offensive, resist the impulse to respond in kind. Code review is about the code, not about the people, and code reviewers are not attacking you personally.
- Similarly, code reviewers are not trying to promote their employers' agendas at the expense of your own. Kernel developers often expect to be working on the kernel years from now, but they understand that their employer could change. They truly are, almost without exception, working toward the creation of the best kernel they can; they are not trying to create discomfort for their employers' competitors.

- Be prepared for seemingly silly requests for coding style changes and requests to factor out some of your code to shared parts of the kernel. One job the maintainers do is to keep things looking the same. Sometimes this means that the clever hack in your driver to get around a problem actually needs to become a generalized kernel feature ready for next time.

What all of this comes down to is that, when reviewers send you comments, you need to pay attention to the technical observations that they are making. Do not let their form of expression or your own pride keep that from happening. When you get review comments on a patch, take the time to understand what the reviewer is trying to say. If possible, fix the things that the reviewer is asking you to fix. And respond back to the reviewer: thank them, and describe how you will answer their questions.

Note that you do not have to agree with every change suggested by reviewers. If you believe that the reviewer has misunderstood your code, explain what is really going on. If you have a technical objection to a suggested change, describe it and justify your solution to the problem. If your explanations make sense, the reviewer will accept them. Should your explanation not prove persuasive, though, especially if others start to agree with the reviewer, take some time to think things over again. It can be easy to become blinded by your own solution to a problem to the point that you don't realize that something is fundamentally wrong or, perhaps, you're not even solving the right problem.

Andrew Morton has suggested that every review comment which does not result in a code change should result in an additional code comment instead; that can help future reviewers avoid the questions which came up the first time around.

One fatal mistake is to ignore review comments in the hope that they will go away. They will not go away. If you repost code without having responded to the comments you got the time before, you're likely to find that your patches go nowhere.

Speaking of reposting code: please bear in mind that reviewers are not going to remember all the details of the code you posted the last time around. So it is always a good idea to remind reviewers of previously raised issues and how you dealt with them; the patch changelog is a good place for this kind of information. Reviewers should not have to search through list archives to familiarize themselves with what was said last time; if you help them get a running start, they will be in a better mood when they revisit your code.

What if you've tried to do everything right and things still aren't going anywhere? Most technical disagreements can be resolved through discussion, but there are times when somebody simply has to make a decision. If you honestly believe that this decision is going against you wrongly, you can always try appealing to a higher power. As of this writing, that higher power tends to be Andrew Morton. Andrew has a great deal of respect in the kernel development community; he can often unjam a situation which seems to be hopelessly blocked. Appealing to Andrew should not be done lightly, though, and not before all other alternatives have been explored. And bear in mind, of course, that he may not agree with you either.

What happens next

If a patch is considered to be a good thing to add to the kernel, and once most of the review issues have been resolved, the next step is usually entry into a subsystem maintainer's tree. How that works varies from one subsystem to the next; each maintainer has his or her own way of doing things. In particular, there may be more than one tree - one, perhaps, dedicated to patches planned for the next merge window, and another for longer-term work.

For patches applying to areas for which there is no obvious subsystem tree (memory management patches, for example), the default tree often ends up being `-mm`. Patches which affect multiple subsystems can also end up going through the `-mm` tree.

Inclusion into a subsystem tree can bring a higher level of visibility to a patch. Now other developers working with that tree will get the patch by default. Subsystem trees typically feed `linux-next` as well, making their contents visible to the development community as a whole. At this point, there's a good chance that you will get more comments from a new set of reviewers; these comments need to be answered as in the previous round.

What may also happen at this point, depending on the nature of your patch, is that conflicts with work being done by others turn up. In the worst case, heavy patch conflicts can result in some work being put on the back burner so that the remaining patches can be worked into shape and merged. Other times, conflict resolution will involve working with the other developers and, possibly, moving some patches between trees to ensure that everything applies cleanly. This work can be a pain, but count your blessings: before the advent of the `linux-next` tree, these conflicts often only turned up during the merge window and had to be addressed in a hurry. Now they can be resolved at leisure, before the merge window opens.

Some day, if all goes well, you'll log on and see that your patch has been merged into the mainline kernel. Congratulations! Once the celebration is complete (and you have added yourself to the `MAINTAINERS` file), though, it is worth remembering an important little fact: the job still is not done. Merging into the mainline brings its own challenges.

To begin with, the visibility of your patch has increased yet again. There may be a new round of comments from developers who had not been aware of the patch before. It may be tempting to ignore them, since there is no longer any question of your code being merged. Resist that temptation, though; you still need to be responsive to developers who have questions or suggestions.

More importantly, though: inclusion into the mainline puts your code into the hands of a much larger group of testers. Even if you have contributed a driver for hardware which is not yet available, you will be surprised by how many people will build your code into their kernels. And, of course, where there are testers, there will be bug reports.

The worst sort of bug reports are regressions. If your patch causes a regression, you'll find an uncomfortable number of eyes upon you; regressions need to be fixed as soon as possible. If you are unwilling or unable to fix the regression (and nobody else does it for you), your patch will almost certainly be removed during the stabilization period. Beyond negating all of the work you have done to get your patch into the mainline, having a patch pulled as the result of a failure to fix a regression could well make it harder for you to get work merged in the future.

After any regressions have been dealt with, there may be other, ordinary bugs to deal with. The stabilization period is your best opportunity to fix these bugs and ensure that your code's debut in a mainline kernel release is as solid as possible. So, please, answer bug reports, and fix the problems if at all possible. That's what the stabilization period is for; you can start creating cool new patches once any problems with the old ones have been taken care of.

And don't forget that there are other milestones which may also create bug reports: the next mainline stable release, when prominent distributors pick up a version of the kernel containing your patch, etc. Continuing to respond to these reports is a matter of basic pride in your work. If that is insufficient motivation, though, it's also worth considering that the development community remembers developers who lose interest in their code after it's merged. The next time you post a patch, they will be evaluating it with the assumption that you will not be around to maintain it afterward.

Other things that can happen

One day, you may open your mail client and see that somebody has mailed you a patch to your code. That is one of the advantages of having your code out there in the open, after all. If you agree with the patch, you can either forward it on to the subsystem maintainer (be sure to include a proper From: line so that the attribution is correct, and add a signoff of your own), or send an Acked-by: response back and let the original poster send it upward.

If you disagree with the patch, send a polite response explaining why. If possible, tell the author what changes need to be made to make the patch acceptable to you. There is a certain resistance to merging patches which are opposed by the author and maintainer of the code, but it only goes so far. If you are seen as needlessly blocking good work, those patches will eventually flow around you and get into the mainline anyway. In the Linux kernel, nobody has absolute veto power over any code. Except maybe Linus.

On very rare occasion, you may see something completely different: another developer posts a different solution to your problem. At that point, chances are that one of the two patches will not be merged, and "mine was here first" is not considered to be a compelling technical argument. If somebody else's patch displaces yours and gets into the mainline, there is really only one way to respond: be pleased that your problem got solved and get on with your work. Having one's work shoved aside in this manner can be hurtful and discouraging, but the community will remember your reaction long after they have forgotten whose patch actually got merged.

*** Advanced topics**

At this point, hopefully, you have a handle on how the development process works. There is still more to learn, however! This section will cover a number of topics which can be helpful for developers wanting to become a regular part of the Linux kernel development process.

Managing patches with git

The use of distributed version control for the kernel began in early 2002, when Linus first started playing with the proprietary BitKeeper application. While BitKeeper was controversial, the approach to software version management it embodied most certainly was not. Distributed version control enabled an immediate acceleration of the kernel development project. In current times, there are several free alternatives to BitKeeper. For better or for worse, the kernel project has settled on git as its tool of choice.

Managing patches with git can make life much easier for the developer, especially as the volume of those patches grows. Git also has its rough edges and poses certain hazards; it is a young and powerful tool which is still being civilized by its developers. This document will not attempt to teach the reader how to use git; that would be sufficient material for a long document in its

own right. Instead, the focus here will be on how git fits into the kernel development process in particular. Developers who wish to come up to speed with git will find more information at:

<https://git-scm.com/>

<https://www.kernel.org/pub/software/scm/git/docs/user-manual.html>

and on various tutorials found on the web.

The first order of business is to read the above sites and get a solid understanding of how git works before trying to use it to make patches available to others. A git-using developer should be able to obtain a copy of the mainline repository, explore the revision history, commit changes to the tree, use branches, etc. An understanding of git's tools for the rewriting of history (such as rebase) is also useful. Git comes with its own terminology and concepts; a new user of git should know about refs, remote branches, the index, fast-forward merges, pushes and pulls, detached heads, etc. It can all be a little intimidating at the outset, but the concepts are not that hard to grasp with a bit of study.

Using git to generate patches for submission by email can be a good exercise while coming up to speed.

When you are ready to start putting up git trees for others to look at, you will, of course, need a server that can be pulled from. Setting up such a server with git-daemon is relatively straightforward if you have a system which is accessible to the Internet. Otherwise, free, public hosting sites (Github, for example) are starting to appear on the net. Established developers can get an account on kernel.org, but those are not easy to come by; see <https://kernel.org/faq/> for more information.

The normal git workflow involves the use of a lot of branches. Each line of development can be separated into a separate "topic branch" and maintained independently. Branches in git are cheap, there is no reason to not make free use of them. And, in any case, you should not do your development in any branch which you intend to ask others to pull from. Publicly-available branches should be created with care; merge in patches from development branches when they are in complete form and ready to go - not before.

Git provides some powerful tools which can allow you to rewrite your development history. An inconvenient patch (one which breaks bisection, say, or which has some other sort of obvious bug) can be fixed in place or made to disappear from the history entirely. A patch series can be rewritten as if it had been written on top of today's mainline, even though you have been working on it for months. Changes can be transparently shifted from one branch to another. And so on. Judicious use of git's ability to revise history can help in the creation of clean patch sets with fewer problems.

Excessive use of this capability can lead to other problems, though, beyond a simple obsession for the creation of the perfect project history. Rewriting history will rewrite the changes contained in that history, turning a tested (hopefully) kernel tree into an untested one. But, beyond that, developers cannot easily collaborate if they do not have a shared view of the project history; if you rewrite history which other developers have pulled into their repositories, you will make life much more difficult for those developers. So a simple rule of thumb applies here: history which has been exported to others should generally be seen as immutable thereafter.

So, once you push a set of changes to your publicly-available server, those changes should not be rewritten. Git will attempt to enforce this rule if you try to push changes which do not result in a fast-forward merge (i.e. changes which do not share the same history). It is possible to override this check, and there may be times when it is necessary to rewrite an exported tree. Moving changesets between trees to avoid conflicts in linux-next is one example. But such

actions should be rare. This is one of the reasons why development should be done in private branches (which can be rewritten if necessary) and only moved into public branches when it's in a reasonably advanced state.

As the mainline (or other tree upon which a set of changes is based) advances, it is tempting to merge with that tree to stay on the leading edge. For a private branch, rebasing can be an easy way to keep up with another tree, but rebasing is not an option once a tree is exported to the world. Once that happens, a full merge must be done. Merging occasionally makes good sense, but overly frequent merges can clutter the history needlessly. Suggested technique in this case is to merge infrequently, and generally only at specific release points (such as a mainline -rc release). If you are nervous about specific changes, you can always perform test merges in a private branch. The git "rerere" tool can be useful in such situations; it remembers how merge conflicts were resolved so that you don't have to do the same work twice.

One of the biggest recurring complaints about tools like git is this: the mass movement of patches from one repository to another makes it easy to slip in ill-advised changes which go into the mainline below the review radar. Kernel developers tend to get unhappy when they see that kind of thing happening; putting up a git tree with unreviewed or off-topic patches can affect your ability to get trees pulled in the future. Quoting Linus:

You can send me patches, but for me to pull a git patch from you, I need to know that you know what you're doing, and I need to be able to trust things **without** then having to go and check every individual change by hand.

(<https://lwn.net/Articles/224135/>).

To avoid this kind of situation, ensure that all patches within a given branch stick closely to the associated topic; a "driver fixes" branch should not be making changes to the core memory management code. And, most importantly, do not use a git tree to bypass the review process. Post an occasional summary of the tree to the relevant list, and, when the time is right, request that the tree be included in linux-next.

If and when others start to send patches for inclusion into your tree, don't forget to review them. Also ensure that you maintain the correct authorship information; the git "am" tool does its best in this regard, but you may have to add a "From:" line to the patch if it has been relayed to you via a third party.

When requesting a pull, be sure to give all the relevant information: where your tree is, what branch to pull, and what changes will result from the pull. The git request-pull command can be helpful in this regard; it will format the request as other developers expect, and will also check to be sure that you have remembered to push those changes to the public server.

Reviewing patches

Some readers will certainly object to putting this section with "advanced topics" on the grounds that even beginning kernel developers should be reviewing patches. It is certainly true that there is no better way to learn how to program in the kernel environment than by looking at code posted by others. In addition, reviewers are forever in short supply; by looking at code you can make a significant contribution to the process as a whole.

Reviewing code can be an intimidating prospect, especially for a new kernel developer who may well feel nervous about questioning code - in public - which has been posted by those with more experience. Even code written by the most experienced developers can be improved, though.

Perhaps the best piece of advice for reviewers (all reviewers) is this: phrase review comments as questions rather than criticisms. Asking “how does the lock get released in this path?” will always work better than stating “the locking here is wrong.”

Another technique that is useful in case of a disagreement is to ask for others to chime in. If a discussion reaches a stalemate after a few exchanges, then call for opinions of other reviewers or maintainers. Often those in agreement with a reviewer remain silent unless called upon. The opinion of multiple people carries exponentially more weight.

Different developers will review code from different points of view. Some are mostly concerned with coding style and whether code lines have trailing white space. Others will focus primarily on whether the change implemented by the patch as a whole is a good thing for the kernel or not. Yet others will check for problematic locking, excessive stack usage, possible security issues, duplication of code found elsewhere, adequate documentation, adverse effects on performance, user-space ABI changes, etc. All types of review, if they lead to better code going into the kernel, are welcome and worthwhile.

There is no strict requirement to use specific tags like Reviewed-by. In fact reviews in plain English are more informative and encouraged even when a tag is provided, e.g. “I looked at aspects A, B and C of this submission and it looks good to me.” Some form of a review message or reply is obviously necessary otherwise maintainers will not know that the reviewer has looked at the patch at all!

Last but not least patch review may become a negative process, focused on pointing out problems. Please throw in a compliment once in a while, particularly for newbies!

* For more information

There are numerous sources of information on Linux kernel development and related topics. First among those will always be the Documentation directory found in the kernel source distribution. Start with the top-level [process/howto.rst](#); also read [process/submitting-patches.rst](#). Many internal kernel APIs are documented using the kerneldoc mechanism; “make htmldocs” or “make pdfdocs” can be used to generate those documents in HTML or PDF format (though the version of TeX shipped by some distributions runs into internal limits and fails to process the documents properly).

Various web sites discuss kernel development at all levels of detail. Your author would like to humbly suggest <https://lwn.net/> as a source; information on many specific kernel topics can be found via the LWN kernel index at:

<https://lwn.net/Kernel/Index/>

Beyond that, a valuable resource for kernel developers is:

<https://kernelnewbies.org/>

And, of course, one should not forget <https://kernel.org/>, the definitive location for kernel release information.

There are a number of books on kernel development:

Linux Device Drivers, 3rd Edition (Jonathan Corbet, Alessandro Rubini, and Greg Kroah-Hartman). Online at <https://lwn.net/Kernel/LDD3/>.

Linux Kernel Development (Robert Love).

Understanding the Linux Kernel (Daniel Bovet and Marco Cesati).

All of these books suffer from a common fault, though: they tend to be somewhat obsolete by the time they hit the shelves, and they have been on the shelves for a while now. Still, there is quite a bit of good information to be found there.

Documentation for git can be found at:

<https://www.kernel.org/pub/software/scm/git/docs/>

<https://www.kernel.org/pub/software/scm/git/docs/user-manual.html>

*** Conclusion**

Congratulations to anybody who has made it through this long-winded document. Hopefully it has provided a helpful understanding of how the Linux kernel is developed and how you can participate in that process.

In the end, it's the participation that matters. Any open source software project is no more than the sum of what its contributors put into it. The Linux kernel has progressed as quickly and as well as it has because it has been helped by an impressively large group of developers, all of whom are working to make it better. The kernel is a premier example of what can be done when thousands of people work together toward a common goal.

The kernel can always benefit from a larger developer base, though. There is always more work to do. But, just as importantly, most other participants in the Linux ecosystem can benefit through contributing to the kernel. Getting code into the mainline is the key to higher code quality, lower maintenance and distribution costs, a higher level of influence over the direction of kernel development, and more. It is a situation where everybody involved wins. Fire up your editor and come join us; you will be more than welcome.

*** Submitting patches: the essential guide to getting your code into the kernel**

For a person or company who wishes to submit a change to the Linux kernel, the process can sometimes be daunting if you're not familiar with "the system." This text is a collection of suggestions which can greatly increase the chances of your change being accepted.

This document contains a large number of suggestions in a relatively terse format. For detailed information on how the kernel development process works, see *A guide to the Kernel Development Process*. Also, read *Linux Kernel patch submission checklist* for a list of items to check before submitting code. For device tree binding patches, read *Documentation/devicetree/bindings/submitting-patches.rst*.

This documentation assumes that you're using git to prepare your patches. If you're unfamiliar with git, you would be well-advised to learn how to use it, it will make your life as a kernel developer and in general much easier.

Some subsystems and maintainer trees have additional information about their workflow and expectations, see *Documentation/process/maintainer-handbooks.rst*.

* Obtain a current source tree

If you do not have a repository with the current kernel source handy, use `git` to obtain one. You'll want to start with the mainline repository, which can be grabbed with:

```
git clone git://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git
```

Note, however, that you may not want to develop against the mainline tree directly. Most subsystem maintainers run their own trees and want to see patches prepared against those trees. See the **T:** entry for the subsystem in the MAINTAINERS file to find that tree, or simply ask the maintainer if the tree is not listed there.

* Describe your changes

Describe your problem. Whether your patch is a one-line bug fix or 5000 lines of a new feature, there must be an underlying problem that motivated you to do this work. Convince the reviewer that there is a problem worth fixing and that it makes sense for them to read past the first paragraph.

Describe user-visible impact. Straight up crashes and lockups are pretty convincing, but not all bugs are that blatant. Even if the problem was spotted during code review, describe the impact you think it can have on users. Keep in mind that the majority of Linux installations run kernels from secondary stable trees or vendor/product-specific trees that cherry-pick only specific patches from upstream, so include anything that could help route your change downstream: provoking circumstances, excerpts from `dmesg`, crash descriptions, performance regressions, latency spikes, lockups, etc.

Quantify optimizations and trade-offs. If you claim improvements in performance, memory consumption, stack footprint, or binary size, include numbers that back them up. But also describe non-obvious costs. Optimizations usually aren't free but trade-offs between CPU, memory, and readability; or, when it comes to heuristics, between different workloads. Describe the expected downsides of your optimization so that the reviewer can weigh costs against benefits.

Once the problem is established, describe what you are actually doing about it in technical detail. It's important to describe the change in plain English for the reviewer to verify that the code is behaving as you intend it to.

The maintainer will thank you if you write your patch description in a form which can be easily pulled into Linux's source code management system, `git`, as a "commit log". See [The canonical patch format](#).

Solve only one problem per patch. If your description starts to get long, that's a sign that you probably need to split up your patch. See [Separate your changes](#).

When you submit or resubmit a patch or patch series, include the complete patch description and justification for it. Don't just say that this is version N of the patch (series). Don't expect the subsystem maintainer to refer back to earlier patch versions or referenced URLs to find the patch description and put that into the patch. I.e., the patch (series) and its description should be self-contained. This benefits both the maintainers and reviewers. Some reviewers probably didn't even receive earlier versions of the patch.

Describe your changes in imperative mood, e.g. "make xyzzy do frotz" instead of "[This patch] makes xyzzy do frotz" or "[I] changed xyzzy to do frotz", as if you are giving orders to the codebase to change its behaviour.

If you want to refer to a specific commit, don't just refer to the SHA-1 ID of the commit. Please also include the oneline summary of the commit, to make it easier for reviewers to know what it is about. Example:

```
Commit e21d2170f36602ae2708 ("video: remove unnecessary
platform_set_drvdata()") removed the unnecessary
platform_set_drvdata(), but left the variable "dev" unused,
delete it.
```

You should also be sure to use at least the first twelve characters of the SHA-1 ID. The kernel repository holds a *lot* of objects, making collisions with shorter IDs a real possibility. Bear in mind that, even if there is no collision with your six-character ID now, that condition may change five years from now.

If related discussions or any other background information behind the change can be found on the web, add 'Link:' tags pointing to it. If the patch is a result of some earlier mailing list discussions or something documented on the web, point to it.

When linking to mailing list archives, preferably use the lore.kernel.org message archiver service. To create the link URL, use the contents of the Message-Id header of the message without the surrounding angle brackets. For example:

```
Link: https://lore.kernel.org/r/30th.anniversary.repost@klaava.Helsinki.FI/
```

Please check the link to make sure that it is actually working and points to the relevant message.

However, try to make your explanation understandable without external resources. In addition to giving a URL to a mailing list archive or bug, summarize the relevant points of the discussion that led to the patch as submitted.

In case your patch fixes a bug, use the 'Closes:' tag with a URL referencing the report in the mailing list archives or a public bug tracker. For example:

```
Closes: https://example.com/issues/1234
```

Some bug trackers have the ability to close issues automatically when a commit with such a tag is applied. Some bots monitoring mailing lists can also track such tags and take certain actions. Private bug trackers and invalid URLs are forbidden.

If your patch fixes a bug in a specific commit, e.g. you found an issue using `git bisect`, please use the 'Fixes:' tag with the first 12 characters of the SHA-1 ID, and the one line summary. Do not split the tag across multiple lines, tags are exempt from the "wrap at 75 columns" rule in order to simplify parsing scripts. For example:

```
Fixes: 54a4f0239f2e ("KVM: MMU: make kvm_mmu_zap_page() return the number of
→pages it actually freed")
```

The following `git config` settings can be used to add a pretty format for outputting the above style in the `git log` or `git show` commands:

```
[core]
    abbrev = 12
[pretty]
    fixes = Fixes: %h ("%s")
```

An example call:

```
$ git log -1 --pretty=fixes 54a4f0239f2e
Fixes: 54a4f0239f2e ("KVM: MMU: make kvm_mmu_zap_page() return the number of
→ pages it actually freed")
```

* Separate your changes

Separate each **logical change** into a separate patch.

For example, if your changes include both bug fixes and performance enhancements for a single driver, separate those changes into two or more patches. If your changes include an API update, and a new driver which uses that new API, separate those into two patches.

On the other hand, if you make a single change to numerous files, group those changes into a single patch. Thus a single logical change is contained within a single patch.

The point to remember is that each patch should make an easily understood change that can be verified by reviewers. Each patch should be justifiable on its own merits.

If one patch depends on another patch in order for a change to be complete, that is OK. Simply note **"this patch depends on patch X"** in your patch description.

When dividing your change into a series of patches, take special care to ensure that the kernel builds and runs properly after each patch in the series. Developers using `git bisect` to track down a problem can end up splitting your patch series at any point; they will not thank you if you introduce bugs in the middle.

If you cannot condense your patch set into a smaller set of patches, then only post say 15 or so at a time and wait for review and integration.

* Style-check your changes

Check your patch for basic style violations, details of which can be found in [Linux kernel coding style](#). Failure to do so simply wastes the reviewers time and will get your patch rejected, probably without even being read.

One significant exception is when moving code from one file to another -- in this case you should not modify the moved code at all in the same patch which moves it. This clearly delineates the act of moving the code and your changes. This greatly aids review of the actual differences and allows tools to better track the history of the code itself.

Check your patches with the patch style checker prior to submission (`scripts/checkpatch.pl`). Note, though, that the style checker should be viewed as a guide, not as a replacement for human judgment. If your code looks better with a violation then its probably best left alone.

The checker reports at three levels:

- ERROR: things that are very likely to be wrong
- WARNING: things requiring careful review
- CHECK: things requiring thought

You should be able to justify all violations that remain in your patch.

* Select the recipients for your patch

You should always copy the appropriate subsystem maintainer(s) and list(s) on any patch to code that they maintain; look through the MAINTAINERS file and the source code revision history to see who those maintainers are. The script `scripts/get_maintainer.pl` can be very useful at this step (pass paths to your patches as arguments to `scripts/get_maintainer.pl`). If you cannot find a maintainer for the subsystem you are working on, Andrew Morton (akpm@linux-foundation.org) serves as a maintainer of last resort.

linux-kernel@vger.kernel.org should be used by default for all patches, but the volume on that list has caused a number of developers to tune it out. Please do not spam unrelated lists and unrelated people, though.

Many kernel-related lists are hosted on [vger.kernel.org](http://vger.kernel.org/vger-lists.html); you can find a list of them at <http://vger.kernel.org/vger-lists.html>. There are kernel-related lists hosted elsewhere as well, though.

Do not send more than 15 patches at once to the vger mailing lists!!!

Linus Torvalds is the final arbiter of all changes accepted into the Linux kernel. His e-mail address is [<torvalds@linux-foundation.org>](mailto:torvalds@linux-foundation.org). He gets a lot of e-mail, and, at this point, very few patches go through Linus directly, so typically you should do your best to -avoid- sending him e-mail.

If you have a patch that fixes an exploitable security bug, send that patch to security@kernel.org. For severe bugs, a short embargo may be considered to allow distributors to get the patch out to users; in such cases, obviously, the patch should not be sent to any public lists. See also *Security bugs*.

Patches that fix a severe bug in a released kernel should be directed toward the stable maintainers by putting a line like this:

Cc: stable@vger.kernel.org

into the sign-off area of your patch (note, NOT an email recipient). You should also read *Everything you ever wanted to know about Linux -stable releases* in addition to this document.

If changes affect userland-kernel interfaces, please send the MAN-PAGES maintainer (as listed in the MAINTAINERS file) a man-pages patch, or at least a notification of the change, so that some information makes its way into the manual pages. User-space API changes should also be copied to linux-api@vger.kernel.org.

* No MIME, no links, no compression, no attachments. Just plain text

Linus and other kernel developers need to be able to read and comment on the changes you are submitting. It is important for a kernel developer to be able to "quote" your changes, using standard e-mail tools, so that they may comment on specific portions of your code.

For this reason, all patches should be submitted by e-mail "inline". The easiest way to do this is with `git send-email`, which is strongly recommended. An interactive tutorial for `git send-email` is available at <https://git-send-email.io>.

If you choose not to use `git send-email`:

Warning: Be wary of your editor's word-wrap corrupting your patch, if you choose to cut-n-paste your patch.

Do not attach the patch as a MIME attachment, compressed or not. Many popular e-mail applications will not always transmit a MIME attachment as plain text, making it impossible to comment on your code. A MIME attachment also takes Linus a bit more time to process, decreasing the likelihood of your MIME-attached change being accepted.

Exception: If your mailer is mangling patches then someone may ask you to re-send them using MIME.

See *Email clients info for Linux* for hints about configuring your e-mail client so that it sends your patches untouched.

* Respond to review comments

Your patch will almost certainly get comments from reviewers on ways in which the patch can be improved, in the form of a reply to your email. You must respond to those comments; ignoring reviewers is a good way to get ignored in return. You can simply reply to their emails to answer their comments. Review comments or questions that do not lead to a code change should almost certainly bring about a comment or changelog entry so that the next reviewer better understands what is going on.

Be sure to tell the reviewers what changes you are making and to thank them for their time. Code review is a tiring and time-consuming process, and reviewers sometimes get grumpy. Even in that case, though, respond politely and address the problems they have pointed out. When sending a next version, add a patch changelog to the cover letter or to individual patches explaining difference against previous submission (see *The canonical patch format*). Notify people that commented on your patch about new versions by adding them to the patches CC list.

See *Email clients info for Linux* for recommendations on email clients and mailing list etiquette.

* Use trimmed interleaved replies in email discussions

Top-posting is strongly discouraged in Linux kernel development discussions. Interleaved (or "inline") replies make conversations much easier to follow. For more details see: https://en.wikipedia.org/wiki/Posting_style#Interleaved_style

As is frequently quoted on the mailing list:

```
A: http://en.wikipedia.org/wiki/Top_post
Q: Where do I find info about this thing called top-posting?
A: Because it messes up the order in which people normally read text.
Q: Why is top-posting such a bad thing?
A: Top-posting.
Q: What is the most annoying thing in e-mail?
```

Similarly, please trim all unneeded quotations that aren't relevant to your reply. This makes responses easier to find, and saves time and space. For more details see: http://daringfireball.net/2007/07/on_top

A: No.

Q: Should I include quotations after my reply?

*** Don't get discouraged - or impatient**

After you have submitted your change, be patient and wait. Reviewers are busy people and may not get to your patch right away.

Once upon a time, patches used to disappear into the void without comment, but the development process works more smoothly than that now. You should receive comments within a few weeks (typically 2-3); if that does not happen, make sure that you have sent your patches to the right place. Wait for a minimum of one week before resubmitting or pinging reviewers - possibly longer during busy times like merge windows.

It's also ok to resend the patch or the patch series after a couple of weeks with the word "RESEND" added to the subject line:

```
[PATCH Vx RESEND] sub/sys: Condensed patch summary
```

Don't add "RESEND" when you are submitting a modified version of your patch or patch series - "RESEND" only applies to resubmission of a patch or patch series which have not been modified in any way from the previous submission.

*** Include PATCH in the subject**

Due to high e-mail traffic to Linus, and to linux-kernel, it is common convention to prefix your subject line with [PATCH]. This lets Linus and other kernel developers more easily distinguish patches from other e-mail discussions.

`git send-email` will do this for you automatically.

*** Sign your work - the Developer's Certificate of Origin**

To improve tracking of who did what, especially with patches that can percolate to their final resting place in the kernel through several layers of maintainers, we've introduced a "sign-off" procedure on patches that are being emailed around.

The sign-off is a simple line at the end of the explanation for the patch, which certifies that you wrote it or otherwise have the right to pass it on as an open-source patch. The rules are pretty simple: if you can certify the below:

Developer's Certificate of Origin 1.1

By making a contribution to this project, I certify that:

- (a) The contribution was created in whole or in part by me and I have the right to submit it under the open source license indicated in the file; or
- (b) The contribution is based upon previous work that, to the best of my knowledge, is covered under an appropriate open source license and I have the right under that license to submit that work with modifications, whether created in whole or in part by me, under the same open source license (unless I am permitted to submit under a different license), as indicated in the file; or
- (c) The contribution was provided directly to me by some other person who certified (a), (b) or (c) and I have not modified it.
- (d) I understand and agree that this project and the contribution are public and that a record of the contribution (including all personal information I submit with it, including my sign-off) is maintained indefinitely and may be redistributed consistent with this project or the open source license(s) involved.

then you just add a line saying:

Signed-off-by: Random J Developer <random@developer.example.org>

using a known identity (sorry, no anonymous contributions.) This will be done for you automatically if you use `git commit -s`. Reverts should also include "Signed-off-by". `git revert -s` does that for you.

Some people also put extra tags at the end. They'll just be ignored for now, but you can do this to mark internal company procedures or just point out some special detail about the sign-off.

Any further SoBs (Signed-off-by:'s) following the author's SoB are from people handling and transporting the patch, but were not involved in its development. SoB chains should reflect the **real** route a patch took as it was propagated to the maintainers and ultimately to Linus, with the first SoB entry signalling primary authorship of a single author.

* When to use Acked-by:, Cc:, and Co-developed-by:

The Signed-off-by: tag indicates that the signer was involved in the development of the patch, or that he/she was in the patch's delivery path.

If a person was not directly involved in the preparation or handling of a patch but wishes to signify and record their approval of it then they can ask to have an Acked-by: line added to the patch's changelog.

Acked-by: is often used by the maintainer of the affected code when that maintainer neither contributed to nor forwarded the patch.

Acked-by: is not as formal as Signed-off-by:. It is a record that the acker has at least reviewed the patch and has indicated acceptance. Hence patch mergers will sometimes manually convert an acker's "yep, looks good to me" into an Acked-by: (but note that it is usually better to ask for an explicit ack).

Acked-by: does not necessarily indicate acknowledgement of the entire patch. For example, if a patch affects multiple subsystems and has an Acked-by: from one subsystem maintainer then

this usually indicates acknowledgement of just the part which affects that maintainer's code. Judgement should be used here. When in doubt people should refer to the original discussion in the mailing list archives.

If a person has had the opportunity to comment on a patch, but has not provided such comments, you may optionally add a `Cc:` tag to the patch. This is the only tag which might be added without an explicit action by the person it names - but it should indicate that this person was copied on the patch. This tag documents that potentially interested parties have been included in the discussion.

`Co-developed-by:` states that the patch was co-created by multiple developers; it is used to give attribution to co-authors (in addition to the author attributed by the `From:` tag) when several people work on a single patch. Since `Co-developed-by:` denotes authorship, every `Co-developed-by:` must be immediately followed by a `Signed-off-by:` of the associated co-author. Standard sign-off procedure applies, i.e. the ordering of `Signed-off-by:` tags should reflect the chronological history of the patch insofar as possible, regardless of whether the author is attributed via `From:` or `Co-developed-by:`. Notably, the last `Signed-off-by:` must always be that of the developer submitting the patch.

Note, the `From:` tag is optional when the `From:` author is also the person (and email) listed in the `From:` line of the email header.

Example of a patch submitted by the `From:` author:

```
<changelog>

Co-developed-by: First Co-Author <first@coauthor.example.org>
Signed-off-by: First Co-Author <first@coauthor.example.org>
Co-developed-by: Second Co-Author <second@coauthor.example.org>
Signed-off-by: Second Co-Author <second@coauthor.example.org>
Signed-off-by: From Author <from@author.example.org>
```

Example of a patch submitted by a `Co-developed-by:` author:

```
From: From Author <from@author.example.org>

<changelog>

Co-developed-by: Random Co-Author <random@coauthor.example.org>
Signed-off-by: Random Co-Author <random@coauthor.example.org>
Signed-off-by: From Author <from@author.example.org>
Co-developed-by: Submitting Co-Author <sub@coauthor.example.org>
Signed-off-by: Submitting Co-Author <sub@coauthor.example.org>
```

* Using Reported-by:, Tested-by:, Reviewed-by:, Suggested-by: and Fixes:

The Reported-by tag gives credit to people who find bugs and report them and it hopefully inspires them to help us again in the future. The tag is intended for bugs; please do not use it to credit feature requests. The tag should be followed by a Closes: tag pointing to the report, unless the report is not available on the web. The Link: tag can be used instead of Closes: if the patch fixes a part of the issue(s) being reported. Please note that if the bug was reported in private, then ask for permission first before using the Reported-by tag.

A Tested-by: tag indicates that the patch has been successfully tested (in some environment) by the person named. This tag informs maintainers that some testing has been performed, provides a means to locate testers for future patches, and ensures credit for the testers.

Reviewed-by:, instead, indicates that the patch has been reviewed and found acceptable according to the Reviewer's Statement:

Reviewer's statement of oversight

By offering my Reviewed-by: tag, I state that:

- (a) I have carried out a technical review of this patch to evaluate its appropriateness and readiness for inclusion into the mainline kernel.
- (b) Any problems, concerns, or questions relating to the patch have been communicated back to the submitter. I am satisfied with the submitter's response to my comments.
- (c) While there may be things that could be improved with this submission, I believe that it is, at this time, (1) a worthwhile modification to the kernel, and (2) free of known issues which would argue against its inclusion.
- (d) While I have reviewed the patch and believe it to be sound, I do not (unless explicitly stated elsewhere) make any warranties or guarantees that it will achieve its stated purpose or function properly in any given situation.

A Reviewed-by tag is a statement of opinion that the patch is an appropriate modification of the kernel without any remaining serious technical issues. Any interested reviewer (who has done the work) can offer a Reviewed-by tag for a patch. This tag serves to give credit to reviewers and to inform maintainers of the degree of review which has been done on the patch. Reviewed-by: tags, when supplied by reviewers known to understand the subject area and to perform thorough reviews, will normally increase the likelihood of your patch getting into the kernel.

Both Tested-by and Reviewed-by tags, once received on mailing list from tester or reviewer, should be added by author to the applicable patches when sending next versions. However if the patch has changed substantially in following version, these tags might not be applicable anymore and thus should be removed. Usually removal of someone's Tested-by or Reviewed-by tags should be mentioned in the patch changelog (after the '---' separator).

A Suggested-by: tag indicates that the patch idea is suggested by the person named and ensures credit to the person for the idea. Please note that this tag should not be added without the reporter's permission, especially if the idea was not posted in a public forum. That said, if we diligently credit our idea reporters, they will, hopefully, be inspired to help us again in the future.

A Fixes: tag indicates that the patch fixes an issue in a previous commit. It is used to make it easy to determine where a bug originated, which can help review a bug fix. This tag also assists the stable kernel team in determining which stable kernel versions should receive your fix. This

is the preferred method for indicating a bug fixed by the patch. See [Describe your changes](#) for more details.

Note: Attaching a Fixes: tag does not subvert the stable kernel rules process nor the requirement to Cc: stable@vger.kernel.org on all stable patch candidates. For more information, please read [Everything you ever wanted to know about Linux -stable releases](#).

* The canonical patch format

This section describes how the patch itself should be formatted. Note that, if you have your patches stored in a git repository, proper patch formatting can be had with `git format-patch`. The tools cannot create the necessary text, though, so read the instructions below anyway.

The canonical patch subject line is:

Subject: [PATCH 001/123] subsystem: summary phrase
--

The canonical patch message body contains the following:

- A from line specifying the patch author, followed by an empty line (only needed if the person sending the patch is not the author).
- The body of the explanation, line wrapped at 75 columns, which will be copied to the permanent changelog to describe this patch.
- An empty line.
- The Signed-off-by: lines, described above, which will also go in the changelog.
- A marker line containing simply - - - .
- Any additional comments not suitable for the changelog.
- The actual patch (diff output).

The Subject line format makes it very easy to sort the emails alphabetically by subject line - pretty much any email reader will support that - since because the sequence number is zero-padded, the numerical and alphabetic sort is the same.

The subsystem in the email's Subject should identify which area or subsystem of the kernel is being patched.

The summary phrase in the email's Subject should concisely describe the patch which that email contains. The summary phrase should not be a filename. Do not use the same summary phrase for every patch in a whole patch series (where a patch series is an ordered sequence of multiple, related patches).

Bear in mind that the summary phrase of your email becomes a globally-unique identifier for that patch. It propagates all the way into the git changelog. The summary phrase may later be used in developer discussions which refer to the patch. People will want to google for the summary phrase to read discussion regarding that patch. It will also be the only thing that people may quickly see when, two or three months later, they are going through perhaps thousands of patches using tools such as `gitk` or `git log --oneline`.

For these reasons, the summary must be no more than 70-75 characters, and it must describe both what the patch changes, as well as why the patch might be necessary. It is challenging to be both succinct and descriptive, but that is what a well-written summary should do.

The summary phrase may be prefixed by tags enclosed in square brackets: "Subject: [PATCH <tag>...] <summary phrase>". The tags are not considered part of the summary phrase, but describe how the patch should be treated. Common tags might include a version descriptor if the multiple versions of the patch have been sent out in response to comments (i.e., "v1, v2, v3"), or "RFC" to indicate a request for comments.

If there are four patches in a patch series the individual patches may be numbered like this: 1/4, 2/4, 3/4, 4/4. This assures that developers understand the order in which the patches should be applied and that they have reviewed or applied all of the patches in the patch series.

Here are some good example Subjects:

```
Subject: [PATCH 2/5] ext2: improve scalability of bitmap searching
Subject: [PATCH v2 01/27] x86: fix eflags tracking
Subject: [PATCH v2] sub/sys: Condensed patch summary
Subject: [PATCH v2 M/N] sub/sys: Condensed patch summary
```

The from line must be the very first line in the message body, and has the form:

From: Patch Author <author@example.com>

The from line specifies who will be credited as the author of the patch in the permanent changelog. If the from line is missing, then the From: line from the email header will be used to determine the patch author in the changelog.

The explanation body will be committed to the permanent source changelog, so should make sense to a competent reader who has long since forgotten the immediate details of the discussion that might have led to this patch. Including symptoms of the failure which the patch addresses (kernel log messages, oops messages, etc.) are especially useful for people who might be searching the commit logs looking for the applicable patch. The text should be written in such detail so that when read weeks, months or even years later, it can give the reader the needed details to grasp the reasoning for **why** the patch was created.

If a patch fixes a compile failure, it may not be necessary to include `_all_` of the compile failures; just enough that it is likely that someone searching for the patch can find it. As in the summary phrase, it is important to be both succinct as well as descriptive.

The `---` marker line serves the essential purpose of marking for patch handling tools where the changelog message ends.

One good use for the additional comments after the `---` marker is for a `diffstat`, to show what files have changed, and the number of inserted and deleted lines per file. A `diffstat` is especially useful on bigger patches. If you are going to include a `diffstat` after the `---` marker, please use `diffstat` options `-p 1 -w 70` so that filenames are listed from the top of the kernel source tree and don't use too much horizontal space (easily fit in 80 columns, maybe with some indentation). (`git` generates appropriate `diffstats` by default.)

Other comments relevant only to the moment or the maintainer, not suitable for the permanent changelog, should also go here. A good example of such comments might be `patch changelogs` which describe what has changed between the v1 and v2 version of the patch.

Please put this information **after** the `---` line which separates the changelog from the rest of the patch. The version information is not part of the changelog which gets committed to the git tree. It is additional information for the reviewers. If it's placed above the commit tags, it needs manual interaction to remove it. If it is below the separator line, it gets automatically stripped off when applying the patch:

```
<commit message>
...
Signed-off-by: Author <author@mail>
---
V2 -> V3: Removed redundant helper function
V1 -> V2: Cleaned up coding style and addressed review comments

path/to/file | 5+++--
...
```

See more details on the proper patch format in the following references.

Backtraces in commit messages

Backtraces help document the call chain leading to a problem. However, not all backtraces are helpful. For example, early boot call chains are unique and obvious. Copying the full dmesg output verbatim, however, adds distracting information like timestamps, module lists, register and stack dumps.

Therefore, the most useful backtraces should distill the relevant information from the dump, which makes it easier to focus on the real issue. Here is an example of a well-trimmed backtrace:

```
unchecked MSR access error: WRMSR to 0xd51 (tried to write 0x0000000000000064)
at rIP: 0xfffffffffae059994 (native_write_msr+0x4/0x20)
Call Trace:
mba_wrmsr
update_domains
rdtgroup_mkdir
```

* Explicit In-Reply-To headers

It can be helpful to manually add In-Reply-To: headers to a patch (e.g., when using git send-email) to associate the patch with previous relevant discussion, e.g. to link a bug fix to the email with the bug report. However, for a multi-patch series, it is generally best to avoid using In-Reply-To: to link to older versions of the series. This way multiple versions of the patch don't become an unmanageable forest of references in email clients. If a link is helpful, you can use the <https://lore.kernel.org/> redirector (e.g., in the cover email text) to link to an earlier version of the patch series.

* Providing base tree information

When other developers receive your patches and start the review process, it is absolutely necessary for them to know what is the base commit/branch your work applies on, considering the sheer amount of maintainer trees present nowadays. Note again the **T:** entry in the MAINTAINERS file explained above.

This is even more important for automated CI processes that attempt to run a series of tests in order to establish the quality of your submission before the maintainer starts the review.

If you are using `git format-patch` to generate your patches, you can automatically include the base tree information in your submission by using the `--base` flag. The easiest and most convenient way to use this option is with topical branches:

```
$ git checkout -t -b my-topical-branch master
Branch 'my-topical-branch' set up to track local branch 'master'.
Switched to a new branch 'my-topical-branch'

[perform your edits and commits]

$ git format-patch --base=auto --cover-letter -o outgoing/ master
outgoing/0000-cover-letter.patch
outgoing/0001-First-Commit.patch
outgoing/...
```

When you open `outgoing/0000-cover-letter.patch` for editing, you will notice that it will have the `base-commit: trailer` at the very bottom, which provides the reviewer and the CI tools enough information to properly perform `git am` without worrying about conflicts:

```
$ git checkout -b patch-review [base-commit-id]
Switched to a new branch 'patch-review'
$ git am patches.mbox
Applying: First Commit
Applying: ...
```

Please see `man git-format-patch` for more information about this option.

Note: The `--base` feature was introduced in git version 2.9.0.

If you are not using `git` to format your patches, you can still include the same `base-commit trailer` to indicate the commit hash of the tree on which your work is based. You should add it either in the cover letter or in the first patch of the series and it should be placed either below the `---` line or at the very bottom of all other content, right before your email signature.

Make sure that base commit is in an official maintainer/mainline tree and not in some internal, accessible only to you tree - otherwise it would be worthless.

* References

Andrew Morton, "The perfect patch" (tpp).

<<https://www.ozlabs.org/~akpm/stuff/tpp.txt>>

Jeff Garzik, "Linux kernel patch submission format".

<<https://web.archive.org/web/20180829112450/http://linux.yyz.us/patch-format.html>>

Greg Kroah-Hartman, "How to piss off a kernel subsystem maintainer".

<<http://www.kroah.com/log/linux/maintainer.html>>

<<http://www.kroah.com/log/linux/maintainer-02.html>>

<<http://www.kroah.com/log/linux/maintainer-03.html>>

<<http://www.kroah.com/log/linux/maintainer-04.html>>

<<http://www.kroah.com/log/linux/maintainer-05.html>>

<<http://www.kroah.com/log/linux/maintainer-06.html>>

NO!!!! No more huge patch bombs to linux-kernel@vger.kernel.org people!

<<https://lore.kernel.org/r/20050711.125305.08322243.davem@davemloft.net>>

Kernel *Linux kernel coding style*

Linus Torvalds's mail on the canonical patch format:

<<https://lore.kernel.org/r/Pine.LNX.4.58.0504071023190.28951@ppc970.osdl.org>>

Andi Kleen, "On submitting kernel patches"

Some strategies to get difficult or controversial changes in.

<http://halobates.de/on-submitting-patches.pdf>

* Linux Kernel patch submission checklist

Here are some basic things that developers should do if they want to see their kernel patch submissions accepted more quickly.

These are all above and beyond the documentation that is provided in *Documentation/process/submitting-patches.rst* and elsewhere regarding submitting Linux kernel patches.

- 1) If you use a facility then `#include` the file that defines/declares that facility. Don't depend on other header files pulling in ones that you use.
- 2) Builds cleanly:
 - a) with applicable or modified CONFIG options `=y`, `=m`, and `=n`. No gcc warnings/errors, no linker warnings/errors.
 - b) Passes `allnoconfig`, `allmodconfig`
 - c) Builds successfully when using `O=builddir`
 - d) Any Documentation/ changes build successfully without new warnings/errors. Use `make htmldocs` or `make pdfdocs` to check the build and fix any issues.
- 3) Builds on multiple CPU architectures by using local cross-compile tools or some other build farm.
- 4) `ppc64` is a good architecture for cross-compilation checking because it tends to use unsigned `long` for 64-bit quantities.
- 5) Check your patch for general style as detailed in *Documentation/process/coding-style.rst*. Check for trivial violations with the patch style checker prior to submission (`scripts/checkpatch.pl`). You should be able to justify all violations that remain in your patch.
- 6) Any new or modified CONFIG options do not muck up the config menu and default to off unless they meet the exception criteria documented in *Documentation/kbuild/kconfig-language.rst* Menu attributes: default value.
- 7) All new Kconfig options have help text.
- 8) Has been carefully reviewed with respect to relevant Kconfig combinations. This is very hard to get right with testing -- brainpower pays off here.

- 9) Check cleanly with sparse.
- 10) Use `make checkstack` and fix any problems that it finds.

Note: `checkstack` does not point out problems explicitly, but any one function that uses more than 512 bytes on the stack is a candidate for change.

- 11) Include `kernel-doc` to document global kernel APIs. (Not required for static functions, but OK there also.) Use `make htmldocs` or `make pdfdocs` to check the `kernel-doc` and fix any issues.
- 12) Has been tested with `CONFIG_PREEMPT`, `CONFIG_DEBUG_PREEMPT`, `CONFIG_DEBUG_SLAB`, `CONFIG_DEBUG_PAGEALLOC`, `CONFIG_DEBUG_MUTEXES`, `CONFIG_DEBUG_SPINLOCK`, `CONFIG_DEBUG_ATOMIC_SLEEP`, `CONFIG_PROVE_RCU` and `CONFIG_DEBUG_OBJECTS_RCU_HEAD` all simultaneously enabled.
- 13) Has been build- and runtime tested with and without `CONFIG_SMP` and `CONFIG_PREEMPT`.
- 14) All codepaths have been exercised with all lockdep features enabled.
- 15) All new `/proc` entries are documented under `Documentation/`
- 16) All new kernel boot parameters are documented in `Documentation/admin-guide/kernel-parameters.rst`.
- 17) All new module parameters are documented with `MODULE_PARM_DESC()`
- 18) All new userspace interfaces are documented in `Documentation/ABI/`. See `Documentation/ABI/README` for more information. Patches that change userspace interfaces should be CCed to linux-api@vger.kernel.org.
- 19) Has been checked with injection of at least slab and page-allocation failures. See `Documentation/fault-injection/`.

If the new code is substantial, addition of subsystem-specific fault injection might be appropriate.

- 20) Newly-added code has been compiled with `gcc -W` (use `make KCFLAGS=-W`). This will generate lots of noise, but is good for finding bugs like "warning: comparison between signed and unsigned".
- 21) Tested after it has been merged into the `-mm` patchset to make sure that it still works with all of the other queued patches and various changes in the VM, VFS, and other subsystems.
- 22) All memory barriers {e.g., `barrier()`, `rmb()`, `wmb()`} need a comment in the source code that explains the logic of what they are doing and why.
- 23) If any `ioctl`'s are added by the patch, then also update `Documentation/userspace-api/ioctl/ioctl-number.rst`.
- 24) If your modified source code depends on or uses any of the kernel APIs or features that are related to the following Kconfig symbols, then test multiple builds with the related Kconfig symbols disabled and/or `=m` (if that option is available) [not all of these at the same time, just various/random combinations of them]:

`CONFIG_SMP`, `CONFIG_SYSFS`, `CONFIG_PROC_FS`, `CONFIG_INPUT`, `CONFIG_PCI`, `CONFIG_BLOCK`, `CONFIG_PM`, `CONFIG_MAGIC_SYSRQ`, `CONFIG_NET`, `CONFIG_INET=n` (but latter with `CONFIG_NET=y`).

TOOLS AND TECHNICAL GUIDES FOR KERNEL DEVELOPERS

This is a collection of material that kernel developers should be familiar with.

*** Minimal requirements to compile the Kernel**

*** Intro**

This document is designed to provide a list of the minimum levels of software necessary to run the current kernel version.

This document is originally based on my "Changes" file for 2.0.x kernels and therefore owes credit to the same people as that file (Jared Mauch, Axel Boldt, Alessandro Sigala, and countless other users all over the 'net).

Current Minimal Requirements

Upgrade to at **least** these software revisions before thinking you've encountered a bug! If you're unsure what version you're currently running, the suggested command should tell you.

Again, keep in mind that this list assumes you are already functionally running a Linux kernel. Also, not all tools are necessary on all systems; obviously, if you don't have any PC Card hardware, for example, you probably needn't concern yourself with pcmciautils.

Program	Minimal version	Command to check the version
GNU C	5.1	gcc --version
Clang/LLVM (optional)	11.0.0	clang --version
Rust (optional)	1.74.1	rustc --version
bindgen (optional)	0.65.1	bindgen --version
GNU make	3.82	make --version
bash	4.2	bash --version
binutils	2.25	ld -v
flex	2.5.35	flex --version
bison	2.0	bison --version
pahole	1.16	pahole --version
util-linux	2.10o	mount --version
kmod	13	depmod -V

continues on next page

Table 1 – continued from previous page

Program	Minimal version	Command to check the version
e2fsprogs	1.41.4	e2fsck -V
jfsutils	1.1.3	fsck.jfs -V
reiserfsprogs	3.6.3	reiserfsck -V
xfsprogs	2.6.0	xfs_db -V
squashfs-tools	4.0	mksquashfs -version
btrfs-progs	0.18	btrfsck
pcmciautils	004	pccardctl -V
quota-tools	3.09	quota -V
PPP	2.4.0	pppd --version
nfs-utils	1.0.5	showmount --version
procps	3.2.0	ps --version
udev	081	udev --version
grub	0.93	grub --version grub-install -version
mcelog	0.6	mcelog --version
iptables	1.4.2	iptables -V
openssl & libcrypto	1.0.0	openssl version
bc	1.06.95	bc --version
Sphinx ¹	2.4.4	sphinx-build --version
cpio	any	cpio --version
GNU tar	1.28	tar --version
gtags (optional)	6.6.5	gtags --version

Kernel compilation

GCC

The gcc version requirements may vary depending on the type of CPU in your computer.

¹ Sphinx is needed only to build the Kernel documentation

Clang/LLVM (optional)

The latest formal release of clang and LLVM utils (according to releases.llvm.org) are supported for building kernels. Older releases aren't guaranteed to work, and we may drop workarounds from the kernel that were used to support older versions. Please see additional docs on Building Linux with Clang/LLVM.

Rust (optional)

A particular version of the Rust toolchain is required. Newer versions may or may not work because the kernel depends on some unstable Rust features, for the moment.

Each Rust toolchain comes with several "components", some of which are required (like rustc) and some that are optional. The rust-src component (which is optional) needs to be installed to build the kernel. Other components are useful for developing.

Please see Documentation/rust/quick-start.rst for instructions on how to satisfy the build requirements of Rust support. In particular, the Makefile target rustavailable is useful to check why the Rust toolchain may not be detected.

bindgen (optional)

bindgen is used to generate the Rust bindings to the C side of the kernel. It depends on libclang.

Make

You will need GNU make 3.82 or later to build the kernel.

Bash

Some bash scripts are used for the kernel build. Bash 4.2 or newer is needed.

Binutils

Binutils 2.25 or newer is needed to build the kernel.

pkg-config

The build system, as of 4.18, requires pkg-config to check for installed kconfig tools and to determine flags settings for use in 'make {g,x}config'. Previously pkg-config was being used but not verified or documented.

Flex

Since Linux 4.16, the build system generates lexical analyzers during build. This requires flex 2.5.35 or later.

Bison

Since Linux 4.16, the build system generates parsers during build. This requires bison 2.0 or later.

pahole:

Since Linux 5.2, if CONFIG_DEBUG_INFO_BTFFormat is selected, the build system generates BTF (BPF Type Format) from DWARF in vmlinux, a bit later from kernel modules as well. This requires pahole v1.16 or later.

It is found in the 'dwarves' or 'pahole' distro packages or from <https://fedorapeople.org/~acme/dwarves/>.

Perl

You will need perl 5 and the following modules: Getopt::Long, Getopt::Std, File::Basename, and File::Find to build the kernel.

BC

You will need bc to build kernels 3.10 and higher

OpenSSL

Module signing and external certificate handling use the OpenSSL program and crypto library to do key creation and signature generation.

You will need openssl to build kernels 3.7 and higher if module signing is enabled. You will also need openssl development packages to build kernels 4.3 and higher.

Tar

GNU tar is needed if you want to enable access to the kernel headers via sysfs (CONFIG_IKHEADERS).

gtags / GNU GLOBAL (optional)

The kernel build requires GNU GLOBAL version 6.6.5 or later to generate tag files through make gtags. This is due to its use of the gtags -C (--directory) flag.

System utilities

Architectural changes

DevFS has been obsoleted in favour of udev (<https://www.kernel.org/pub/linux/utls/kernel/hotplug/>)

32-bit UID support is now in place. Have fun!

Linux documentation for functions is transitioning to inline documentation via specially-formatted comments near their definitions in the source. These comments can be combined with ReST files the Documentation/ directory to make enriched documentation, which can then be converted to PostScript, HTML, LaTeX, ePUB and PDF files. In order to convert from ReST format to a format of your choice, you'll need Sphinx.

Util-linux

New versions of util-linux provide fdisk support for larger disks, support new options to mount, recognize more supported partition types, and similar goodies. You'll probably want to upgrade.

Ksymoops

If the unthinkable happens and your kernel oopses, you may need the ksymoops tool to decode it, but in most cases you don't. It is generally preferred to build the kernel with CONFIG_KALLSYMS so that it produces readable dumps that can be used as-is (this also produces better output than ksymoops). If for some reason your kernel is not build with CONFIG_KALLSYMS and you have no way to rebuild and reproduce the Oops with that option, then you can still decode that Oops with ksymoops.

Mkinitrd

These changes to the `/lib/modules` file tree layout also require that `mkinitrd` be upgraded.

E2fsprogs

The latest version of `e2fsprogs` fixes several bugs in `fsck` and `debugfs`. Obviously, it's a good idea to upgrade.

JFSutils

The `jfsutils` package contains the utilities for the file system. The following utilities are available:

- `fsck.jfs` - initiate replay of the transaction log, and check and repair a JFS formatted partition.
- `mkfs.jfs` - create a JFS formatted partition.
- other file system utilities are also available in this package.

Reiserfsprogs

The `reiserfsprogs` package should be used for `reiserfs-3.6.x` (Linux kernels 2.4.x). It is a combined package and contains working versions of `mkreiserfs`, `resize_reiserfs`, `debugreiserfs` and `reiserfsck`. These utils work on both i386 and alpha platforms.

Xfsprogs

The latest version of `xfsprogs` contains `mkfs.xfs`, `xfs_db`, and the `xfs_repair` utilities, among others, for the XFS filesystem. It is architecture independent and any version from 2.0.0 onward should work correctly with this version of the XFS kernel code (2.6.0 or later is recommended, due to some significant improvements).

PCMCIAutils

`PCMCIAutils` replaces `pcmcia-cs`. It properly sets up PCMCIA sockets at system startup and loads the appropriate modules for 16-bit PCMCIA devices if the kernel is modularized and the hotplug subsystem is used.

Quota-tools

Support for 32 bit uid's and gid's is required if you want to use the newer version 2 quota format. Quota-tools version 3.07 and newer has this support. Use the recommended version or newer from the table above.

Intel IA32 microcode

A driver has been added to allow updating of Intel IA32 microcode, accessible as a normal (misc) character device. If you are not using udev you may need to:

```
mkdir /dev/cpu
mknod /dev/cpu/microcode c 10 184
chmod 0644 /dev/cpu/microcode
```

as root before you can use this. You'll probably also want to get the user-space microcode_ctl utility to use with this.

udev

udev is a userspace application for populating /dev dynamically with only entries for devices actually present. udev replaces the basic functionality of devfs, while allowing persistent device naming for devices.

FUSE

Needs libfuse 2.4.0 or later. Absolute minimum is 2.3.0 but mount options direct_io and kernel_cache won't work.

Networking

General changes

If you have advanced network configuration needs, you should probably consider using the network tools from ip-route2.

Packet Filter / NAT

The packet filtering and NAT code uses the same tools like the previous 2.4.x kernel series (iptables). It still includes backwards-compatibility modules for 2.2.x-style ipchains and 2.0.x-style ipfwadm.

PPP

The PPP driver has been restructured to support multilink and to enable it to operate over diverse media layers. If you use PPP, upgrade `pppd` to at least 2.4.0.

If you are not using `udev`, you must have the device file `/dev/ppp` which can be made by:

```
mknod /dev/ppp c 108 0
```

as root.

NFS-utils

In ancient (2.4 and earlier) kernels, the `nfs` server needed to know about any client that expected to be able to access files via NFS. This information would be given to the kernel by `mountd` when the client mounted the filesystem, or by `exportfs` at system startup. `exportfs` would take information about active clients from `/var/lib/nfs/rmtab`.

This approach is quite fragile as it depends on `rmtab` being correct which is not always easy, particularly when trying to implement fail-over. Even when the system is working well, `rmtab` suffers from getting lots of old entries that never get removed.

With modern kernels we have the option of having the kernel tell `mountd` when it gets a request from an unknown host, and `mountd` can give appropriate export information to the kernel. This removes the dependency on `rmtab` and means that the kernel only needs to know about currently active clients.

To enable this new functionality, you need to:

```
mount -t nfsd nfsd /proc/fs/nfsd
```

before running `exportfs` or `mountd`. It is recommended that all NFS services be protected from the internet-at-large by a firewall where that is possible.

mcelog

On x86 kernels the `mcelog` utility is needed to process and log machine check events when `CONFIG_X86_MCE` is enabled. Machine check events are errors reported by the CPU. Processing them is strongly encouraged.

Kernel documentation

Sphinx

Please see `sphinx_install` in `Documentation/doc-guide/sphinx.rst` for details about Sphinx requirements.

rustdoc

rustdoc is used to generate the documentation for Rust code. Please see Documentation/rust/general-information.rst for more information.

*** Getting updated software**

Kernel compilation

gcc

- [<ftp://ftp.gnu.org/gnu/gcc/>](ftp://ftp.gnu.org/gnu/gcc/)

Clang/LLVM

- Getting LLVM.

Rust

- Documentation/rust/quick-start.rst.

bindgen

- Documentation/rust/quick-start.rst.

Make

- [<ftp://ftp.gnu.org/gnu/make/>](ftp://ftp.gnu.org/gnu/make/)

Bash

- [<ftp://ftp.gnu.org/gnu/bash/>](ftp://ftp.gnu.org/gnu/bash/)

Binutils

- [<https://www.kernel.org/pub/linux/devel/binutils/>](https://www.kernel.org/pub/linux/devel/binutils/)

Flex

- [<https://github.com/westes/flex/releases>](https://github.com/westes/flex/releases)

Bison

- [<ftp://ftp.gnu.org/gnu/bison/>](ftp://ftp.gnu.org/gnu/bison/)

OpenSSL

- [<https://www.openssl.org/>](https://www.openssl.org/)

System utilities

Util-linux

- [<https://www.kernel.org/pub/linux/utils/util-linux/>](https://www.kernel.org/pub/linux/utils/util-linux/)

Kmod

- [<https://www.kernel.org/pub/linux/utils/kernel/kmod/>](https://www.kernel.org/pub/linux/utils/kernel/kmod/)
- [<https://git.kernel.org/pub/scm/utils/kernel/kmod/kmod.git>](https://git.kernel.org/pub/scm/utils/kernel/kmod/kmod.git)

Ksymoops

- [<https://www.kernel.org/pub/linux/utils/kernel/ksymoops/v2.4/>](https://www.kernel.org/pub/linux/utils/kernel/ksymoops/v2.4/)

Mkinitrd

- [<https://code.launchpad.net/initrd-tools/main>](https://code.launchpad.net/initrd-tools/main)

E2fsprogs

- [<https://www.kernel.org/pub/linux/kernel/people/tytso/e2fsprogs/>](https://www.kernel.org/pub/linux/kernel/people/tytso/e2fsprogs/)
- [<https://git.kernel.org/pub/scm/fs/ext2/e2fsprogs.git/>](https://git.kernel.org/pub/scm/fs/ext2/e2fsprogs.git)

JFSutils

- [<https://jfs.sourceforge.net/>](https://jfs.sourceforge.net/)

Reiserfsprogs

- [<https://git.kernel.org/pub/scm/linux/kernel/git/jeffm/reiserfsprogs.git/>](https://git.kernel.org/pub/scm/linux/kernel/git/jeffm/reiserfsprogs.git/)

Xfsprogs

- [<https://git.kernel.org/pub/scm/fs/xfs/xfsprogs-dev.git>](https://git.kernel.org/pub/scm/fs/xfs/xfsprogs-dev.git)
- [<https://www.kernel.org/pub/linux/utils/fs/xfs/xfsprogs/>](https://www.kernel.org/pub/linux/utils/fs/xfs/xfsprogs/)

Pcmciautils

- [<https://www.kernel.org/pub/linux/utils/kernel/pcmcia/>](https://www.kernel.org/pub/linux/utils/kernel/pcmcia/)

Quota-tools

- [<https://sourceforge.net/projects/linuxquota/>](https://sourceforge.net/projects/linuxquota/)

Intel P6 microcode

- [<https://downloadcenter.intel.com/>](https://downloadcenter.intel.com/)

udev

- [<https://www.freedesktop.org/software/systemd/man/udev.html>](https://www.freedesktop.org/software/systemd/man/udev.html)

FUSE

- [<https://github.com/libfuse/libfuse/releases>](https://github.com/libfuse/libfuse/releases)

mcelog

- [<https://www.mcelog.org/>](https://www.mcelog.org/)

cpio

- [<https://www.gnu.org/software/cpio/>](https://www.gnu.org/software/cpio/)

Networking

PPP

- [<https://download.samba.org/pub/ppp/>](https://download.samba.org/pub/ppp/)
- [<https://git.ozlabs.org/?p=ppp.git>](https://git.ozlabs.org/?p=ppp.git)
- [<https://github.com/paulusmack/ppp/>](https://github.com/paulusmack/ppp/)

NFS-utils

- [<https://sourceforge.net/project/showfiles.php?group_id=14>](https://sourceforge.net/project/showfiles.php?group_id=14)
- [<https://nfs.sourceforge.net/>](https://nfs.sourceforge.net/)

Iptables

- [<https://netfilter.org/projects/iptables/index.html>](https://netfilter.org/projects/iptables/index.html)

Ip-route2

- [<https://www.kernel.org/pub/linux/utils/net/iproute2/>](https://www.kernel.org/pub/linux/utils/net/iproute2/)

OProfile

- [<https://oprofile.sf.net/download/>](https://oprofile.sf.net/download/)

Kernel documentation

Sphinx

- [<https://www.sphinx-doc.org/>](https://www.sphinx-doc.org/)

* Programming Language

The kernel is written in the C programming language [[c-language](#)]. More precisely, the kernel is typically compiled with gcc [[gcc](#)] under `-std=gnu11` [[gcc-c-dialect-options](#)]: the GNU dialect of ISO C11. clang [[clang](#)] is also supported, see docs on Building Linux with Clang/LLVM.

This dialect contains many extensions to the language [[gnu-extensions](#)], and many of them are used within the kernel as a matter of course.

* Attributes

One of the common extensions used throughout the kernel are attributes [[gcc-attribute-syntax](#)]. Attributes allow to introduce implementation-defined semantics to language entities (like variables, functions or types) without having to make significant syntactic changes to the language (e.g. adding a new keyword) [[n2049](#)].

In some cases, attributes are optional (i.e. a compiler not supporting them should still produce proper code, even if it is slower or does not perform as many compile-time checks/diagnostics).

The kernel defines pseudo-keywords (e.g. `__pure`) instead of using directly the GNU attribute syntax (e.g. `__attribute__((__pure__))`) in order to feature detect which ones can be used and/or to shorten the code.

Please refer to `include/linux/compiler_attributes.h` for more information.

* Rust

The kernel has experimental support for the Rust programming language [[rust-language](#)] under `CONFIG_RUST`. It is compiled with rustc [[rustc](#)] under `--edition=2021` [[rust-editions](#)]. Editions are a way to introduce small changes to the language that are not backwards compatible.

On top of that, some unstable features [[rust-unstable-features](#)] are used in the kernel. Unstable features may change in the future, thus it is an important goal to reach a point where only stable features are used.

Please refer to `Documentation/rust/index.rst` for more information.

* Linux kernel coding style

This is a short document describing the preferred coding style for the linux kernel. Coding style is very personal, and I won't **force** my views on anybody, but this is what goes for anything that I have to be able to maintain, and I'd prefer it for most other things too. Please at least consider the points made here.

First off, I'd suggest printing out a copy of the GNU coding standards, and NOT read it. Burn them, it's a great symbolic gesture.

Anyway, here goes:

*** 1) Indentation**

Tabs are 8 characters, and thus indentations are also 8 characters. There are heretic movements that try to make indentations 4 (or even 2!) characters deep, and that is akin to trying to define the value of PI to be 3.

Rationale: The whole idea behind indentation is to clearly define where a block of control starts and ends. Especially when you've been looking at your screen for 20 straight hours, you'll find it a lot easier to see how the indentation works if you have large indentations.

Now, some people will claim that having 8-character indentations makes the code move too far to the right, and makes it hard to read on a 80-character terminal screen. The answer to that is that if you need more than 3 levels of indentation, you're screwed anyway, and should fix your program.

In short, 8-char indents make things easier to read, and have the added benefit of warning you when you're nesting your functions too deep. Heed that warning.

The preferred way to ease multiple indentation levels in a switch statement is to align the switch and its subordinate case labels in the same column instead of double-indenting the case labels. E.g.:

```
switch (suffix) {
case 'G':
case 'g':
    mem <=& 30;
    break;
case 'M':
case 'm':
    mem <=& 20;
    break;
case 'K':
case 'k':
    mem <=& 10;
    fallthrough;
default:
    break;
}
```

Don't put multiple statements on a single line unless you have something to hide:

```
if (condition) do_this;
    do_something_everytime;
```

Don't use commas to avoid using braces:

```
if (condition)
    do_this(), do_that();
```

Always uses braces for multiple statements:

```
if (condition) {
    do_this();
}
```

```
do_that();
}
```

Don't put multiple assignments on a single line either. Kernel coding style is super simple. Avoid tricky expressions.

Outside of comments, documentation and except in Kconfig, spaces are never used for indentation, and the above example is deliberately broken.

Get a decent editor and don't leave whitespace at the end of lines.

* 2) Breaking long lines and strings

Coding style is all about readability and maintainability using commonly available tools.

The preferred limit on the length of a single line is 80 columns.

Statements longer than 80 columns should be broken into sensible chunks, unless exceeding 80 columns significantly increases readability and does not hide information.

Descendants are always substantially shorter than the parent and are placed substantially to the right. A very commonly used style is to align descendants to a function open parenthesis.

These same rules are applied to function headers with a long argument list.

However, never break user-visible strings such as printk messages because that breaks the ability to grep for them.

* 3) Placing Braces and Spaces

The other issue that always comes up in C styling is the placement of braces. Unlike the indent size, there are few technical reasons to choose one placement strategy over the other, but the preferred way, as shown to us by the prophets Kernighan and Ritchie, is to put the opening brace last on the line, and put the closing brace first, thusly:

```
if (x is true) {
    we do y
}
```

This applies to all non-function statement blocks (if, switch, for, while, do). E.g.:

```
switch (action) {
case KOBJ_ADD:
    return "add";
case KOBJ_REMOVE:
    return "remove";
case KOBJ_CHANGE:
    return "change";
default:
    return NULL;
}
```

However, there is one special case, namely functions: they have the opening brace at the beginning of the next line, thus:

```
int function(int x)
{
    body of function
}
```

Heretic people all over the world have claimed that this inconsistency is ... well ... inconsistent, but all right-thinking people know that (a) K&R are **right** and (b) K&R are right. Besides, functions are special anyway (you can't nest them in C).

Note that the closing brace is empty on a line of its own, **except** in the cases where it is followed by a continuation of the same statement, ie a while in a do-statement or an else in an if-statement, like this:

```
do {
    body of do-loop
} while (condition);
```

and

```
if (x == y) {
    ..
} else if (x > y) {
    ...
} else {
    ....
}
```

Rationale: K&R.

Also, note that this brace-placement also minimizes the number of empty (or almost empty) lines, without any loss of readability. Thus, as the supply of new-lines on your screen is not a renewable resource (think 25-line terminal screens here), you have more empty lines to put comments on.

Do not unnecessarily use braces where a single statement will do.

```
if (condition)
    action();
```

and

```
if (condition)
    do_this();
else
    do_that();
```

This does not apply if only one branch of a conditional statement is a single statement; in the latter case use braces in both branches:

```
if (condition) {
    do_this();
}
```

```

        do_that();
} else {
    otherwise();
}

```

Also, use braces when a loop contains more than a single simple statement:

```

while (condition) {
    if (test)
        do_something();
}

```

3.1) Spaces

Linux kernel style for use of spaces depends (mostly) on function-versus-keyword usage. Use a space after (most) keywords. The notable exceptions are `sizeof`, `typeof`, `alignof`, and `__attribute__`, which look somewhat like functions (and are usually used with parentheses in Linux, although they are not required in the language, as in: `sizeof info` after `struct fileinfo info;` is declared).

So use a space after these keywords:

```
if, switch, case, for, do, while
```

but not with `sizeof`, `typeof`, `alignof`, or `__attribute__`. E.g.,

```
s = sizeof(struct file);
```

Do not add spaces around (inside) parenthesized expressions. This example is **bad**:

```
s = sizeof( struct file );
```

When declaring pointer data or a function that returns a pointer type, the preferred use of `*` is adjacent to the data name or function name and not adjacent to the type name. Examples:

```

char *linux_banner;
unsigned long long memparse(char *ptr, char **retptr);
char *match_strdup(substring_t *s);

```

Use one space around (on each side of) most binary and ternary operators, such as any of these:

```
= + - < > * / % | & ^ <= >= == != ? :
```

but no space after unary operators:

```
& * + - ~ ! sizeof typeof alignof __attribute__ defined
```

no space before the postfix increment & decrement unary operators:

```
++ --
```

no space after the prefix increment & decrement unary operators:

++ --

and no space around the `.` and `->` structure member operators.

Do not leave trailing whitespace at the ends of lines. Some editors with smart indentation will insert whitespace at the beginning of new lines as appropriate, so you can start typing the next line of code right away. However, some such editors do not remove the whitespace if you end up not putting a line of code there, such as if you leave a blank line. As a result, you end up with lines containing trailing whitespace.

Git will warn you about patches that introduce trailing whitespace, and can optionally strip the trailing whitespace for you; however, if applying a series of patches, this may make later patches in the series fail by changing their context lines.

* 4) Naming

C is a Spartan language, and your naming conventions should follow suit. Unlike Modula-2 and Pascal programmers, C programmers do not use cute names like `ThisVariableIsATemporaryCounter`. A C programmer would call that variable `tmp`, which is much easier to write, and not the least more difficult to understand.

HOWEVER, while mixed-case names are frowned upon, descriptive names for global variables are a must. To call a global function `foo` is a shooting offense.

GLOBAL variables (to be used only if you **really** need them) need to have descriptive names, as do global functions. If you have a function that counts the number of active users, you should call that `count_active_users()` or similar; you should **not** call it `cntusr()`.

Encoding the type of a function into the name (so-called Hungarian notation) is asinine - the compiler knows the types anyway and can check those, and it only confuses the programmer.

LOCAL variable names should be short, and to the point. If you have some random integer loop counter, it should probably be called `i`. Calling it `loop_counter` is non-productive, if there is no chance of it being mis-understood. Similarly, `tmp` can be just about any type of variable that is used to hold a temporary value.

If you are afraid to mix up your local variable names, you have another problem, which is called the function-growth-hormone-imbalance syndrome. See chapter 6 (Functions).

For symbol names and documentation, avoid introducing new usage of 'master / slave' (or 'slave' independent of 'master') and 'blacklist / whitelist'.

Recommended replacements for 'master / slave' are:

'{primary,main}' / '{secondary,replica,subordinate}' '{initiator,requester}' / '{target,responder}' '{controller,host}' / '{device,worker,proxy}' 'leader / follower' 'director / performer'

Recommended replacements for 'blacklist/whitelist' are:

'denylist / allowlist' 'blocklist / passlist'

Exceptions for introducing new usage is to maintain a userspace ABI/API, or when updating code for an existing (as of 2020) hardware or protocol specification that mandates those terms. For new specifications translate specification usage of the terminology to the kernel coding standard where possible.

* 5) Typedefs

Please don't use things like `vps_t`. It's a **mistake** to use typedef for structures and pointers. When you see a

```
vps_t a;
```

in the source, what does it mean? In contrast, if it says

```
struct virtual_container *a;
```

you can actually tell what `a` is.

Lots of people think that typedefs help readability. Not so. They are useful only for:

- (a) totally opaque objects (where the typedef is actively used to **hide** what the object is).

Example: `pte_t` etc. opaque objects that you can only access using the proper accessor functions.

Note: Opaqueness and accessor functions are not good in themselves. The reason we have them for things like `pte_t` etc. is that there really is absolutely **zero** portably accessible information there.

- (b) Clear integer types, where the abstraction **helps** avoid confusion whether it is `int` or `long`. `u8/u16/u32` are perfectly fine typedefs, although they fit into category (d) better than here.

Note: Again - there needs to be a **reason** for this. If something is unsigned `long`, then there's no reason to do

```
typedef unsigned long myflags_t;
```

but if there is a clear reason for why it under certain circumstances might be an unsigned `int` and under other configurations might be unsigned `long`, then by all means go ahead and use a typedef.

- (c) when you use sparse to literally create a **new** type for type-checking.
- (d) New types which are identical to standard C99 types, in certain exceptional circumstances.

Although it would only take a short amount of time for the eyes and brain to become accustomed to the standard types like `uint32_t`, some people object to their use anyway.

Therefore, the Linux-specific `u8/u16/u32/u64` types and their signed equivalents which are identical to standard types are permitted -- although they are not mandatory in new code of your own.

When editing existing code which already uses one or the other set of types, you should conform to the existing choices in that code.

- (e) Types safe for use in userspace.

In certain structures which are visible to userspace, we cannot require C99 types and cannot use the `u32` form above. Thus, we use `__u32` and similar types in all structures which are shared with userspace.

Maybe there are other cases too, but the rule should basically be to NEVER EVER use a typedef unless you can clearly match one of those rules.

In general, a pointer, or a struct that has elements that can reasonably be directly accessed should **never** be a typedef.

* 6) Functions

Functions should be short and sweet, and do just one thing. They should fit on one or two screenfuls of text (the ISO/ANSI screen size is 80x24, as we all know), and do one thing and do that well.

The maximum length of a function is inversely proportional to the complexity and indentation level of that function. So, if you have a conceptually simple function that is just one long (but simple) case-statement, where you have to do lots of small things for a lot of different cases, it's OK to have a longer function.

However, if you have a complex function, and you suspect that a less-than-gifted first-year high-school student might not even understand what the function is all about, you should adhere to the maximum limits all the more closely. Use helper functions with descriptive names (you can ask the compiler to in-line them if you think it's performance-critical, and it will probably do a better job of it than you would have done).

Another measure of the function is the number of local variables. They shouldn't exceed 5-10, or you're doing something wrong. Re-think the function, and split it into smaller pieces. A human brain can generally easily keep track of about 7 different things, anything more and it gets confused. You know you're brilliant, but maybe you'd like to understand what you did 2 weeks from now.

In source files, separate functions with one blank line. If the function is exported, the **EXPORT** macro for it should follow immediately after the closing function brace line. E.g.:

```
int system_is_up(void)
{
    return system_state == SYSTEM_RUNNING;
}
EXPORT_SYMBOL(system_is_up);
```

6.1) Function prototypes

In function prototypes, include parameter names with their data types. Although this is not required by the C language, it is preferred in Linux because it is a simple way to add valuable information for the reader.

Do not use the extern keyword with function declarations as this makes lines longer and isn't strictly necessary.

When writing function prototypes, please keep the **order of elements regular**. For example, using this function declaration example:

```
__init void * __must_check action(enum magic value, size_t size, u8 count,
                                   char *fmt, ...) __printf(4, 5) __malloc;
```

The preferred order of elements for a function prototype is:

- storage class (below, `static __always_inline`, noting that `__always_inline` is technically an attribute but is treated like `inline`)
- storage class attributes (here, `__init` -- i.e. section declarations, but also things like `__cold`)
- return type (here, `void *`)
- return type attributes (here, `__must_check`)
- function name (here, `action`)
- function parameters (here, `(enum magic value, size_t size, u8 count, char *fmt, ...)`, noting that parameter names should always be included)
- function parameter attributes (here, `__printf(4, 5)`)
- function behavior attributes (here, `__malloc`)

Note that for a function **definition** (i.e. the actual function body), the compiler does not allow function parameter attributes after the function parameters. In these cases, they should go after the storage class attributes (e.g. note the changed position of `__printf(4, 5)` below, compared to the **declaration** example above):

```
static __always_inline __init __printf(4, 5) void * __must_check action(enum
↪magic value,
                                size_t size, u8 count, char *fmt, ...) __malloc
{
    ...
}
```

* 7) Centralized exiting of functions

Albeit deprecated by some people, the equivalent of the `goto` statement is used frequently by compilers in form of the unconditional jump instruction.

The `goto` statement comes in handy when a function exits from multiple locations and some common work such as cleanup has to be done. If there is no cleanup needed then just return directly.

Choose label names which say what the `goto` does or why the `goto` exists. An example of a good name could be `out_free_buffer`: if the `goto` frees buffer. Avoid using GW-BASIC names like `err1`: and `err2`:, as you would have to renumber them if you ever add or remove exit paths, and they make correctness difficult to verify anyway.

The rationale for using `gotos` is:

- unconditional statements are easier to understand and follow
- nesting is reduced
- errors by not updating individual exit points when making modifications are prevented
- saves the compiler work to optimize redundant code away ;)

```
int fun(int a)
{
    int result = 0;
    char *buffer;

    buffer = kmalloc(SIZE, GFP_KERNEL);
    if (!buffer)
        return -ENOMEM;

    if (condition1) {
        while (loop1) {
            ...
        }
        result = 1;
        goto out_free_buffer;
    }
    ...
out_free_buffer:
    kfree(buffer);
    return result;
}
```

A common type of bug to be aware of is one err bugs which look like this:

```
err:
    kfree(foo->bar);
    kfree(foo);
    return ret;
```

The bug in this code is that on some exit paths foo is NULL. Normally the fix for this is to split it up into two error labels err_free_bar: and err_free_foo::

```
err_free_bar:
    kfree(foo->bar);
err_free_foo:
    kfree(foo);
    return ret;
```

Ideally you should simulate errors to test all exit paths.

* 8) Commenting

Comments are good, but there is also a danger of over-commenting. NEVER try to explain HOW your code works in a comment: it's much better to write the code so that the **working** is obvious, and it's a waste of time to explain badly written code.

Generally, you want your comments to tell WHAT your code does, not HOW. Also, try to avoid putting comments inside a function body: if the function is so complex that you need to separately comment parts of it, you should probably go back to chapter 6 for a while. You can make small comments to note or warn about something particularly clever (or ugly), but try to avoid

excess. Instead, put the comments at the head of the function, telling people what it does, and possibly WHY it does it.

When commenting the kernel API functions, please use the kernel-doc format. See the files at Documentation/doc-guide/ and scripts/kernel-doc for details.

The preferred style for long (multi-line) comments is:

```
/*
 * This is the preferred style for multi-line
 * comments in the Linux kernel source code.
 * Please use it consistently.
 *
 * Description: A column of asterisks on the left side,
 * with beginning and ending almost-blank lines.
 */
```

For files in net/ and drivers/net/ the preferred style for long (multi-line) comments is a little different.

```
/* The preferred comment style for files in net/ and drivers/net
 * looks like this.
 *
 * It is nearly the same as the generally preferred comment style,
 * but there is no initial almost-blank line.
 */
```

It's also important to comment data, whether they are basic types or derived types. To this end, use just one data declaration per line (no commas for multiple data declarations). This leaves you room for a small comment on each item, explaining its use.

* 9) You've made a mess of it

That's OK, we all do. You've probably been told by your long-time Unix user helper that GNU emacs automatically formats the C sources for you, and you've noticed that yes, it does do that, but the defaults it uses are less than desirable (in fact, they are worse than random typing - an infinite number of monkeys typing into GNU emacs would never make a good program).

So, you can either get rid of GNU emacs, or change it to use saner values. To do the latter, you can stick the following in your .emacs file:

```
(defun c-lineup-arglist-tabs-only (ignored)
  "Line up argument lists by tabs, not spaces"
  (let* ((anchor (c-langelem-pos c-syntactic-element))
        (column (c-langelem-2nd-pos c-syntactic-element))
        (offset (- (1+ column) anchor))
        (steps (floor offset c-basic-offset)))
    (* (max steps 1)
       c-basic-offset)))

(dir-locals-set-class-variables
 'linux-kernel
 '((c-mode . (
```

```
(c-basic-offset . 8)
(c-label-minimum-indentation . 0)
(c-offsets-alist . (
  (arglist-close . c-lineup-arglist-tabs-only)
  (arglist-cont-nonempty .
    (c-lineup-gcc-asm-reg c-lineup-arglist-tabs-only))
  (arglist-intro . +)
  (brace-list-intro . +)
  (c . c-lineup-C-comments)
  (case-label . 0)
  (comment-intro . c-lineup-comment)
  (cpp-define-intro . +)
  (cpp-macro . -1000)
  (cpp-macro-cont . +)
  (defun-block-intro . +)
  (else-clause . 0)
  (func-decl-cont . +)
  (inclass . +)
  (inher-cont . c-lineup-multi-inher)
  (knr-argdecl-intro . 0)
  (label . -1000)
  (statement . 0)
  (statement-block-intro . +)
  (statement-case-intro . +)
  (statement-cont . +)
  (substatement . +)
))
(indent-tabs-mode . t)
(show-trailing-whitespace . t)
))))

(dir-locals-set-directory-class
 (expand-file-name "~/src/linux-trees")
 'linux-kernel)
```

This will make emacs go better with the kernel coding style for C files below `~/src/linux-trees`.

But even if you fail in getting emacs to do sane formatting, not everything is lost: use `indent`.

Now, again, GNU `indent` has the same brain-dead settings that GNU emacs has, which is why you need to give it a few command line options. However, that's not too bad, because even the makers of GNU `indent` recognize the authority of K&R (the GNU people aren't evil, they are just severely misguided in this matter), so you just give `indent` the options `-kr -i8` (stands for K&R, 8 character indents), or use `scripts/Lindent`, which indents in the latest style.

`indent` has a lot of options, and especially when it comes to comment re-formatting you may want to take a look at the man page. But remember: `indent` is not a fix for bad programming.

Note that you can also use the `clang-format` tool to help you with these rules, to quickly re-format parts of your code automatically, and to review full files in order to spot coding style mistakes, typos and possible improvements. It is also handy for sorting `#includes`, for aligning variables/macros, for reflowing text and other similar tasks. See the file

Documentation/process/clang-format.rst for more details.

Some basic editor settings, such as indentation and line endings, will be set automatically if you are using an editor that is compatible with EditorConfig. See the official EditorConfig website for more information: <https://editorconfig.org/>

* 10) Kconfig configuration files

For all of the Kconfig* configuration files throughout the source tree, the indentation is somewhat different. Lines under a config definition are indented with one tab, while help text is indented an additional two spaces. Example:

```
config AUDIT
    bool "Auditing support"
    depends on NET
    help
        Enable auditing infrastructure that can be used with another
        kernel subsystem, such as SELinux (which requires this for
        logging of avc messages output). Does not do system-call
        auditing without CONFIG_AUDITSYSCALL.
```

Seriously dangerous features (such as write support for certain filesystems) should advertise this prominently in their prompt string:

```
config ADFS_FS_RW
    bool "ADFS write support (DANGEROUS)"
    depends on ADFS_FS
    ...
```

For full documentation on the configuration files, see the file *Documentation/kbuild/kconfig-language.rst*.

* 11) Data structures

Data structures that have visibility outside the single-threaded environment they are created and destroyed in should always have reference counts. In the kernel, garbage collection doesn't exist (and outside the kernel garbage collection is slow and inefficient), which means that you absolutely **have** to reference count all your uses.

Reference counting means that you can avoid locking, and allows multiple users to have access to the data structure in parallel - and not having to worry about the structure suddenly going away from under them just because they slept or did something else for a while.

Note that locking is **not** a replacement for reference counting. Locking is used to keep data structures coherent, while reference counting is a memory management technique. Usually both are needed, and they are not to be confused with each other.

Many data structures can indeed have two levels of reference counting, when there are users of different classes. The subclass count counts the number of subclass users, and decrements the global count just once when the subclass count goes to zero.

Examples of this kind of multi-level-reference-counting can be found in memory management (struct mm_struct: mm_users and mm_count), and in filesystem code (struct super_block: s_count and s_active).

Remember: if another thread can find your data structure, and you don't have a reference count on it, you almost certainly have a bug.

* 12) Macros, Enums and RTL

Names of macros defining constants and labels in enums are capitalized.

```
#define CONSTANT 0x12345
```

Enums are preferred when defining several related constants.

CAPITALIZED macro names are appreciated but macros resembling functions may be named in lower case.

Generally, inline functions are preferable to macros resembling functions.

Macros with multiple statements should be enclosed in a do - while block:

```
#define macrofun(a, b, c)      |\n    do {                      |\n        if (a == 5)           |\n            do_this(b, c);    |\n    } while (0)
```

Things to avoid when using macros:

1) macros that affect control flow:

```
#define F00(x)                |\n    do {                      |\n        if (blah(x) < 0)      |\n            return -EBUGGERED;|\n    } while (0)
```

is a **very** bad idea. It looks like a function call but exits the calling function; don't break the internal parsers of those who will read the code.

2) macros that depend on having a local variable with a magic name:

```
#define F00(val) bar(index, val)
```

might look like a good thing, but it's confusing as hell when one reads the code and it's prone to breakage from seemingly innocent changes.

3) macros with arguments that are used as l-values: FOO(x) = y; will bite you if somebody e.g. turns FOO into an inline function.

4) forgetting about precedence: macros defining constants using expressions must enclose the expression in parentheses. Beware of similar issues with macros using parameters.

```
#define CONSTANT 0x4000\n#define CONSTEXP (CONSTANT | 3)
```


5) namespace collisions when defining local variables in macros resembling functions:

```
#define F00(x)      \
({                \
    typeof(x) ret; \
    ret = calc_ret(x); \
    (ret);         \
})
```

`ret` is a common name for a local variable - `__foo_ret` is less likely to collide with an existing variable.

The `cpp` manual deals with macros exhaustively. The `gcc` internals manual also covers RTL which is used frequently with assembly language in the kernel.

* 13) Printing kernel messages

Kernel developers like to be seen as literate. Do mind the spelling of kernel messages to make a good impression. Do not use incorrect contractions like `dont`; use `do not` or `don't` instead. Make the messages concise, clear, and unambiguous.

Kernel messages do not have to be terminated with a period.

Printing numbers in parentheses (`%d`) adds no value and should be avoided.

There are a number of driver model diagnostic macros in `<linux/dev_printk.h>` which you should use to make sure messages are matched to the right device and driver, and are tagged with the right level: `dev_err()`, `dev_warn()`, `dev_info()`, and so forth. For messages that aren't associated with a particular device, `<linux/printk.h>` defines `pr_notice()`, `pr_info()`, `pr_warn()`, `pr_err()`, etc.

Coming up with good debugging messages can be quite a challenge; and once you have them, they can be a huge help for remote troubleshooting. However debug message printing is handled differently than printing other non-debug messages. While the other `pr_XXX()` functions print unconditionally, `pr_debug()` does not; it is compiled out by default, unless either `DEBUG` is defined or `CONFIG_DYNAMIC_DEBUG` is set. That is true for `dev_dbg()` also, and a related convention uses `VERBOSE_DEBUG` to add `dev_vdbg()` messages to the ones already enabled by `DEBUG`.

Many subsystems have Kconfig debug options to turn on `-DDEBUG` in the corresponding Makefile; in other cases specific files `#define DEBUG`. And when a debug message should be unconditionally printed, such as if it is already inside a debug-related `#ifdef` section, `printk(KERN_DEBUG ...)` can be used.

*** 14) Allocating memory**

The kernel provides the following general purpose memory allocators: `kmalloc()`, `kzalloc()`, `kmalloc_array()`, `kcalloc()`, `vmalloc()`, and `vzalloc()`. Please refer to the API documentation for further information about them. [Documentation/core-api/memory-allocation.rst](#)

The preferred form for passing a size of a struct is the following:

```
p = kmalloc(sizeof(*p), ...);
```

The alternative form where struct name is spelled out hurts readability and introduces an opportunity for a bug when the pointer variable type is changed but the corresponding `sizeof` that is passed to a memory allocator is not.

Casting the return value which is a void pointer is redundant. The conversion from void pointer to any other pointer type is guaranteed by the C programming language.

The preferred form for allocating an array is the following:

```
p = kmalloc_array(n, sizeof(...), ...);
```

The preferred form for allocating a zeroed array is the following:

```
p = kcalloc(n, sizeof(...), ...);
```

Both forms check for overflow on the allocation size `n * sizeof(...)`, and return `NULL` if that occurred.

These generic allocation functions all emit a stack dump on failure when used without `__GFP_NOWARN` so there is no use in emitting an additional failure message when `NULL` is returned.

*** 15) The inline disease**

There appears to be a common misperception that gcc has a magic "make me faster" speedup option called `inline`. While the use of inlines can be appropriate (for example as a means of replacing macros, see Chapter 12), it very often is not. Abundant use of the `inline` keyword leads to a much bigger kernel, which in turn slows the system as a whole down, due to a bigger icache footprint for the CPU and simply because there is less memory available for the pagecache. Just think about it; a pagecache miss causes a disk seek, which easily takes 5 milliseconds. There are a LOT of cpu cycles that can go into these 5 milliseconds.

A reasonable rule of thumb is to not put `inline` at functions that have more than 3 lines of code in them. An exception to this rule are the cases where a parameter is known to be a compiletime constant, and as a result of this constantness you *know* the compiler will be able to optimize most of your function away at compile time. For a good example of this later case, see the `kmalloc()` inline function.

Often people argue that adding `inline` to functions that are static and used only once is always a win since there is no space tradeoff. While this is technically correct, gcc is capable of inlining these automatically without help, and the maintenance issue of removing the `inline` when a second user appears outweighs the potential value of the hint that tells gcc to do something it would have done anyway.

* 16) Function return values and names

Functions can return values of many different kinds, and one of the most common is a value indicating whether the function succeeded or failed. Such a value can be represented as an error-code integer (-Exxx = failure, 0 = success) or a succeeded boolean (0 = failure, non-zero = success).

Mixing up these two sorts of representations is a fertile source of difficult-to-find bugs. If the C language included a strong distinction between integers and booleans then the compiler would find these mistakes for us... but it doesn't. To help prevent such bugs, always follow this convention:

If the name of a function is an action or an imperative command, the function should return an error-code integer. If the name is a predicate, the function should return a "succeeded" boolean.

For example, `add_work` is a command, and the `add_work()` function returns 0 for success or `-EBUSY` for failure. In the same way, `PCI device present` is a predicate, and the `pci_dev_present()` function returns 1 if it succeeds in finding a matching device or 0 if it doesn't.

All EXPORTed functions must respect this convention, and so should all public functions. Private (static) functions need not, but it is recommended that they do.

Functions whose return value is the actual result of a computation, rather than an indication of whether the computation succeeded, are not subject to this rule. Generally they indicate failure by returning some out-of-range result. Typical examples would be functions that return pointers; they use NULL or the ERR_PTR mechanism to report failure.

* 17) Using bool

The Linux kernel `bool` type is an alias for the C99 `_Bool` type. `bool` values can only evaluate to 0 or 1, and implicit or explicit conversion to `bool` automatically converts the value to true or false. When using `bool` types the `!!` construction is not needed, which eliminates a class of bugs.

When working with `bool` values the `true` and `false` definitions should be used instead of 1 and 0.

`bool` function return types and stack variables are always fine to use whenever appropriate. Use of `bool` is encouraged to improve readability and is often a better option than `'int'` for storing boolean values.

Do not use `bool` if cache line layout or size of the value matters, as its size and alignment varies based on the compiled architecture. Structures that are optimized for alignment and size should not use `bool`.

If a structure has many true/false values, consider consolidating them into a bitfield with 1 bit members, or using an appropriate fixed width type, such as `u8`.

Similarly for function arguments, many true/false values can be consolidated into a single bit-wise 'flags' argument and 'flags' can often be a more readable alternative if the call-sites have naked true/false constants.

Otherwise limited use of `bool` in structures and arguments can improve readability.

* 18) Don't re-invent the kernel macros

The header file `include/linux/kernel.h` contains a number of macros that you should use, rather than explicitly coding some variant of them yourself. For example, if you need to calculate the length of an array, take advantage of the macro

```
#define ARRAY_SIZE(x) (sizeof(x) / sizeof((x)[0]))
```

Similarly, if you need to calculate the size of some structure member, use

```
#define sizeof_field(t, f) (sizeof(((t*)0)->f))
```

There are also `min()` and `max()` macros that do strict type checking if you need them. Feel free to peruse that header file to see what else is already defined that you shouldn't reproduce in your code.

* 19) Editor modelines and other cruft

Some editors can interpret configuration information embedded in source files, indicated with special markers. For example, emacs interprets lines marked like this:

```
-*- mode: c -*-
```

Or like this:

```
/*  
Local Variables:  
compile-command: "gcc -DMAGIC_DEBUG_FLAG foo.c"  
End:  
*/
```

Vim interprets markers that look like this:

```
/* vim:set sw=8 noet */
```

Do not include any of these in source files. People have their own personal editor configurations, and your source files should not override them. This includes markers for indentation and mode configuration. People may use their own custom mode, or may have some other magic method for making indentation work correctly.

* 20) Inline assembly

In architecture-specific code, you may need to use inline assembly to interface with CPU or platform functionality. Don't hesitate to do so when necessary. However, don't use inline assembly gratuitously when C can do the job. You can and should poke hardware from C when possible.

Consider writing simple helper functions that wrap common bits of inline assembly, rather than repeatedly writing them with slight variations. Remember that inline assembly can use C parameters.

Large, non-trivial assembly functions should go in .S files, with corresponding C prototypes defined in C header files. The C prototypes for assembly functions should use `asm` linkage.

You may need to mark your `asm` statement as volatile, to prevent GCC from removing it if GCC doesn't notice any side effects. You don't always need to do so, though, and doing so unnecessarily can limit optimization.

When writing a single inline assembly statement containing multiple instructions, put each instruction on a separate line in a separate quoted string, and end each string except the last with `\n\t` to properly indent the next instruction in the assembly output:

```
asm ("magic %reg1, #42\n\t"
    "more_magic %reg2, %reg3"
    : /* outputs */ : /* inputs */ : /* clobbers */);
```

* 21) Conditional Compilation

Wherever possible, don't use preprocessor conditionals (`#if`, `#ifdef`) in .c files; doing so makes code harder to read and logic harder to follow. Instead, use such conditionals in a header file defining functions for use in those .c files, providing no-op stub versions in the `#else` case, and then call those functions unconditionally from .c files. The compiler will avoid generating any code for the stub calls, producing identical results, but the logic will remain easy to follow.

Prefer to compile out entire functions, rather than portions of functions or portions of expressions. Rather than putting an `ifdef` in an expression, factor out part or all of the expression into a separate helper function and apply the conditional to that function.

If you have a function or variable which may potentially go unused in a particular configuration, and the compiler would warn about its definition going unused, mark the definition as `__maybe_unused` rather than wrapping it in a preprocessor conditional. (However, if a function or variable *always* goes unused, delete it.)

Within code, where possible, use the `IS_ENABLED` macro to convert a Kconfig symbol into a C boolean expression, and use it in a normal C conditional:

```
if (IS_ENABLED(CONFIG_SOMETHING)) {
    ...
}
```

The compiler will constant-fold the conditional away, and include or exclude the block of code just as with an `#ifdef`, so this will not add any runtime overhead. However, this approach still allows the C compiler to see the code inside the block, and check it for correctness (syntax, types, symbol references, etc). Thus, you still have to use an `#ifdef` if the code inside the block references symbols that will not exist if the condition is not met.

At the end of any non-trivial `#if` or `#ifdef` block (more than a few lines), place a comment after the `#endif` on the same line, noting the conditional expression used. For instance:

```
#ifdef CONFIG_SOMETHING
...
#endif /* CONFIG_SOMETHING */
```

* 22) Do not crash the kernel

In general, the decision to crash the kernel belongs to the user, rather than to the kernel developer.

Avoid panic()

panic() should be used with care and primarily only during system boot. panic() is, for example, acceptable when running out of memory during boot and not being able to continue.

Use WARN() rather than BUG()

Do not add new code that uses any of the BUG() variants, such as BUG(), BUG_ON(), or VM_BUG_ON(). Instead, use a WARN*() variant, preferably WARN_ON_ONCE(), and possibly with recovery code. Recovery code is not required if there is no reasonable way to at least partially recover.

"I'm too lazy to do error handling" is not an excuse for using BUG(). Major internal corruptions with no way of continuing may still use BUG(), but need good justification.

Use WARN_ON_ONCE() rather than WARN() or WARN_ON()

WARN_ON_ONCE() is generally preferred over WARN() or WARN_ON(), because it is common for a given warning condition, if it occurs at all, to occur multiple times. This can fill up and wrap the kernel log, and can even slow the system enough that the excessive logging turns into its own, additional problem.

Do not WARN lightly

WARN*() is intended for unexpected, this-should-never-happen situations. WARN*() macros are not to be used for anything that is expected to happen during normal operation. These are not pre- or post-condition asserts, for example. Again: WARN*() must not be used for a condition that is expected to trigger easily, for example, by user space actions. pr_warn_once() is a possible alternative, if you need to notify the user of a problem.

Do not worry about panic_on_warn users

A few more words about panic_on_warn: Remember that panic_on_warn is an available kernel option, and that many users set this option. This is why there is a "Do not WARN lightly" writeup, above. However, the existence of panic_on_warn users is not a valid reason to avoid the judicious use WARN*(). That is because, whoever enables panic_on_warn has explicitly asked the kernel to crash if a WARN*() fires, and such users must be prepared to deal with the consequences of a system that is somewhat more likely to crash.

Use BUILD_BUG_ON() for compile-time assertions

The use of BUILD_BUG_ON() is acceptable and encouraged, because it is a compile-time assertion that has no effect at runtime.

* Appendix I) References

The C Programming Language, Second Edition by Brian W. Kernighan and Dennis M. Ritchie. Prentice Hall, Inc., 1988. ISBN 0-13-110362-8 (paperback), 0-13-110370-9 (hardback).

The Practice of Programming by Brian W. Kernighan and Rob Pike. Addison-Wesley, Inc., 1999. ISBN 0-201-61586-X.

GNU manuals - where in compliance with K&R and this text - for cpp, gcc, gcc internals and indent, all available from <https://www.gnu.org/manual/>

WG14 is the international standardization working group for the programming language C, URL: <http://www.open-std.org/JTC1/SC22/WG14/>

Kernel CodingStyle, by greg@kroah.com at OLS 2002: http://www.kroah.com/linux/talks/ols_2002_kernel_codingstyle_talk/html/

* Kernel Maintainer PGP guide

Author

Konstantin Ryabitsev <konstantin@linuxfoundation.org>

This document is aimed at Linux kernel developers, and especially at subsystem maintainers. It contains a subset of information discussed in the more general "Protecting Code Integrity" guide published by the Linux Foundation. Please read that document for more in-depth discussion on some of the topics mentioned in this guide.

* The role of PGP in Linux Kernel development

PGP helps ensure the integrity of the code that is produced by the Linux kernel development community and, to a lesser degree, establish trusted communication channels between developers via PGP-signed email exchange.

The Linux kernel source code is available in two main formats:

- Distributed source repositories (git)
- Periodic release snapshots (tarballs)

Both git repositories and tarballs carry PGP signatures of the kernel developers who create official kernel releases. These signatures offer a cryptographic guarantee that downloadable versions made available via kernel.org or any other mirrors are identical to what these developers have on their workstations. To this end:

- git repositories provide PGP signatures on all tags
- tarballs provide detached PGP signatures with all downloads

Trusting the developers, not infrastructure

Ever since the 2011 compromise of core kernel.org systems, the main operating principle of the Kernel Archives project has been to assume that any part of the infrastructure can be compromised at any time. For this reason, the administrators have taken deliberate steps to emphasize that trust must always be placed with developers and never with the code hosting infrastructure, regardless of how good the security practices for the latter may be.

The above guiding principle is the reason why this guide is needed. We want to make sure that by placing trust into developers we do not simply shift the blame for potential future security incidents to someone else. The goal is to provide a set of guidelines developers can use to create a secure working environment and safeguard the PGP keys used to establish the integrity of the Linux kernel itself.

* PGP tools

Use GnuPG 2.2 or later

Your distro should already have GnuPG installed by default, you just need to verify that you are using a reasonably recent version of it. To check, run:

```
$ gpg --version | head -n1
```

If you have version 2.2 or above, then you are good to go. If you have a version that is prior than 2.2, then some commands from this guide may not work.

Configure gpg-agent options

The GnuPG agent is a helper tool that will start automatically whenever you use the `gpg` command and run in the background with the purpose of caching the private key passphrase. There are two options you should know in order to tweak when the passphrase should be expired from cache:

- `default-cache-ttl` (seconds): If you use the same key again before the time-to-live expires, the countdown will reset for another period. The default is 600 (10 minutes).
- `max-cache-ttl` (seconds): Regardless of how recently you've used the key since initial passphrase entry, if the maximum time-to-live countdown expires, you'll have to enter the passphrase again. The default is 30 minutes.

If you find either of these defaults too short (or too long), you can edit your `~/.gnupg/gpg-agent.conf` file to set your own values:

```
# set to 30 minutes for regular ttl, and 2 hours for max ttl
default-cache-ttl 1800
max-cache-ttl 7200
```

Note: It is no longer necessary to start `gpg-agent` manually at the beginning of your shell session. You may want to check your rc files to remove anything you had in place for older versions of GnuPG, as it may not be doing the right thing any more.

* Protect your PGP key

This guide assumes that you already have a PGP key that you use for Linux kernel development purposes. If you do not yet have one, please see the ["Protecting Code Integrity"](#) document mentioned earlier for guidance on how to create a new one.

You should also make a new key if your current one is weaker than 2048 bits (RSA).

Understanding PGP Subkeys

A PGP key rarely consists of a single keypair -- usually it is a collection of independent subkeys that can be used for different purposes based on their capabilities, assigned at their creation time. PGP defines four capabilities that a key can have:

- **[S]** keys can be used for signing
- **[E]** keys can be used for encryption
- **[A]** keys can be used for authentication
- **[C]** keys can be used for certifying other keys

The key with the **[C]** capability is often called the "master" key, but this terminology is misleading because it implies that the Certify key can be used in place of any of other subkey on the same chain (like a physical "master key" can be used to open locks made for other keys). Since this is not the case, this guide will refer to it as "the Certify key" to avoid any ambiguity.

It is critical to fully understand the following:

1. All subkeys are fully independent from each other. If you lose a private subkey, it cannot be restored or recreated from any other private key on your chain.
2. With the exception of the Certify key, there can be multiple subkeys with identical capabilities (e.g. you can have 2 valid encryption subkeys, 3 valid signing subkeys, but only one valid certification subkey). All subkeys are fully independent -- a message encrypted to one **[E]** subkey cannot be decrypted with any other **[E]** subkey you may also have.
3. A single subkey may have multiple capabilities (e.g. your **[C]** key can also be your **[S]** key).

The key carrying the **[C]** (certify) capability is the only key that can be used to indicate relationship with other keys. Only the **[C]** key can be used to:

- add or revoke other keys (subkeys) with S/E/A capabilities
- add, change or revoke identities (uids) associated with the key
- add or change the expiration date on itself or any subkey
- sign other people's keys for web of trust purposes

By default, GnuPG creates the following when generating new keys:

- One subkey carrying both Certify and Sign capabilities (**[SC]**)
- A separate subkey with the Encryption capability (**[E]**)

If you used the default parameters when generating your key, then that is what you will have. You can verify by running `gpg --list-secret-keys`, for example:

```
sec    ed25519 2022-12-20 [SC] [expires: 2024-12-19]
       00000000000000000000000000000000AAAABBBBCCCCDDDD
uid          [ultimate] Alice Dev <adev@kernel.org>
ssb    cv25519 2022-12-20 [E] [expires: 2024-12-19]
```

The long line under the sec entry is your key fingerprint -- whenever you see [fpr] in the examples below, that 40-character string is what it refers to.

Ensure your passphrase is strong

GnuPG uses passphrases to encrypt your private keys before storing them on disk. This way, even if your .gnupg directory is leaked or stolen in its entirety, the attackers cannot use your private keys without first obtaining the passphrase to decrypt them.

It is absolutely essential that your private keys are protected by a strong passphrase. To set it or change it, use:

```
$ gpg --change-passphrase [fpr]
```

Create a separate Signing subkey

Our goal is to protect your Certify key by moving it to offline media, so if you only have a combined **[SC]** key, then you should create a separate signing subkey:

```
$ gpg --quick-addkey [fpr] ed25519 sign
```

Note: ECC support in GnuPG

Note, that if you intend to use a hardware token that does not support ED25519 ECC keys, you should choose "nistp256" instead or "ed25519." See the section below on recommended hardware devices.

Back up your Certify key for disaster recovery

The more signatures you have on your PGP key from other developers, the more reasons you have to create a backup version that lives on something other than digital media, for disaster recovery reasons.

The best way to create a printable hardcopy of your private key is by using the paperkey software written for this very purpose. See `man paperkey` for more details on the output format and its benefits over other solutions. Paperkey should already be packaged for most distributions.

Run the following command to create a hardcopy backup of your private key:

```
$ gpg --export-secret-key [fpr] | paperkey -o /tmp/key-backup.txt
```

Print out that file (or pipe the output straight to `lpr`), then take a pen and write your passphrase on the margin of the paper. **This is strongly recommended** because the key printout is still

encrypted with that passphrase, and if you ever change it you will not remember what it used to be when you had created the backup -- *guaranteed*.

Put the resulting printout and the hand-written passphrase into an envelope and store in a secure and well-protected place, preferably away from your home, such as your bank vault.

Note: Your printer is probably no longer a simple dumb device connected to your parallel port, but since the output is still encrypted with your passphrase, printing out even to “cloud-integrated” modern printers should remain a relatively safe operation.

Back up your whole GnuPG directory

Warning: !!!Do not skip this step!!!

It is important to have a readily available backup of your PGP keys should you need to recover them. This is different from the disaster-level preparedness we did with `paperkey`. You will also rely on these external copies whenever you need to use your Certify key -- such as when making changes to your own key or signing other people's keys after conferences and summits.

Start by getting a small USB “thumb” drive (preferably two!) that you will use for backup purposes. You will need to encrypt them using LUKS -- refer to your distro's documentation on how to accomplish this.

For the encryption passphrase, you can use the same one as on your PGP key.

Once the encryption process is over, re-insert the USB drive and make sure it gets properly mounted. Copy your entire `.gnupg` directory over to the encrypted storage:

```
$ cp -a ~/.gnupg /media/disk/foo/gnupg-backup
```

You should now test to make sure everything still works:

```
$ gpg --homedir=/media/disk/foo/gnupg-backup --list-key [fpr]
```

If you don't get any errors, then you should be good to go. Unmount the USB drive, distinctly label it so you don't blow it away next time you need to use a random USB drive, and put in a safe place -- but not too far away, because you'll need to use it every now and again for things like editing identities, adding or revoking subkeys, or signing other people's keys.

Remove the Certify key from your homedir

The files in our home directory are not as well protected as we like to think. They can be leaked or stolen via many different means:

- by accident when making quick homedir copies to set up a new workstation
- by systems administrator negligence or malice
- via poorly secured backups
- via malware in desktop apps (browsers, pdf viewers, etc)

- via coercion when crossing international borders

Protecting your key with a good passphrase greatly helps reduce the risk of any of the above, but passphrases can be discovered via keyloggers, shoulder-surfing, or any number of other means. For this reason, the recommended setup is to remove your Certify key from your home directory and store it on offline storage.

Warning: Please see the previous section and make sure you have backed up your GnuPG directory in its entirety. What we are about to do will render your key useless if you do not have a usable backup!

First, identify the keygrip of your Certify key:

```
$ gpg --with-keygrip --list-key [fpr]
```

The output will be something like this:

```
pub    ed25519 2022-12-20 [SC] [expires: 2022-12-19]
       00000000000000000000000000000000AAAABBBBCCCCDDDD
       Keygrip = 11110000000000000000000000000000000000000000
uid    [ultimate] Alice Dev <adev@kernel.org>
sub    cv25519 2022-12-20 [E] [expires: 2022-12-19]
       Keygrip = 22220000000000000000000000000000000000000000
sub    ed25519 2022-12-20 [S]
       Keygrip = 33330000000000000000000000000000000000000000
```

Find the keygrip entry that is beneath the pub line (right under the Certify key fingerprint). This will correspond directly to a file in your `~/ .gnupg` directory:

```
$ cd ~/.gnupg/private-keys-v1.d  
$ ls  
111100000000000000000000000000000000000000000000000000000.key  
222200000000000000000000000000000000000000000000000000000.key  
333300000000000000000000000000000000000000000000000000000.key
```

All you have to do is simply remove the .key file that corresponds to the Certify key keygrip:

```
$ cd ~/.gnupg/private-keys-v1.d
$ rm 1111000000000000000000000000000000000000.key
```

Now, if you issue the `--list-secret-keys` command, it will show that the Certify key is missing (the `#` indicates it is not available):

```
$ gpg --list-secret-keys
sec#  ed25519 2022-12-20 [SC] [expires: 2024-12-19]
      00000000000000000000000000000000AAAABBBBCCCCDDDD
uid      [ultimate] Alice Dev <adev@kernel.org>
ssb      cv25519 2022-12-20 [E] [expires: 2024-12-19]
ssb      ed25519 2022-12-20 [S]
```

You should also remove any `secring.gpg` files in the `~/.gnupg` directory, which may be left over from previous versions of GnuPG.

If you don't have the "private-keys-v1.d" directory

If you do not have a `~/.gnupg/private-keys-v1.d` directory, then your secret keys are still stored in the legacy `secring.gpg` file used by GnuPG v1. Making any changes to your key, such as changing the passphrase or adding a subkey, should automatically convert the old `secring.gpg` format to use `private-keys-v1.d` instead.

Once you get that done, make sure to delete the obsolete `secring.gpg` file, which still contains your private keys.

* Move the subkeys to a dedicated crypto device

Even though the Certify key is now safe from being leaked or stolen, the subkeys are still in your home directory. Anyone who manages to get their hands on those will be able to decrypt your communication or fake your signatures (if they know the passphrase). Furthermore, each time a GnuPG operation is performed, the keys are loaded into system memory and can be stolen from there by sufficiently advanced malware (think Meltdown and Spectre).

The best way to completely protect your keys is to move them to a specialized hardware device that is capable of smartcard operations.

The benefits of smartcards

A smartcard contains a cryptographic chip that is capable of storing private keys and performing crypto operations directly on the card itself. Because the key contents never leave the smartcard, the operating system of the computer into which you plug in the hardware device is not able to retrieve the private keys themselves. This is very different from the encrypted USB storage device we used earlier for backup purposes -- while that USB device is plugged in and mounted, the operating system is able to access the private key contents.

Using external encrypted USB media is not a substitute to having a smartcard-capable device.

Available smartcard devices

Unless all your laptops and workstations have smartcard readers, the easiest is to get a specialized USB device that implements smartcard functionality. There are several options available:

- **Nitrokey Start**: Open hardware and Free Software, based on FSI Japan's **Gnuk**. One of the few available commercial devices that support ED25519 ECC keys, but offer fewest security features (such as resistance to tampering or some side-channel attacks).
- **Nitrokey Pro 2**: Similar to the Nitrokey Start, but more tamper-resistant and offers more security features. Pro 2 supports ECC cryptography (NISTP).
- **Yubikey 5**: proprietary hardware and software, but cheaper than Nitrokey Pro and comes available in the USB-C form that is more useful with newer laptops. Offers additional security features such as FIDO U2F, among others, and now finally supports NISTP and ED25519 ECC keys.

Your choice will depend on cost, shipping availability in your geographical region, and open/proprietary hardware considerations.

Note: If you are listed in MAINTAINERS or have an account at kernel.org, you [qualify for a free Nitrokey Start](#) courtesy of The Linux Foundation.

Configure your smartcard device

Your smartcard device should Just Work (TM) the moment you plug it into any modern Linux workstation. You can verify it by running:

```
$ gpg --card-status
```

If you see full smartcard details, then you are good to go. Unfortunately, troubleshooting all possible reasons why things may not be working for you is way beyond the scope of this guide. If you are having trouble getting the card to work with GnuPG, please seek help via usual support channels.

To configure your smartcard, you will need to use the GnuPG menu system, as there are no convenient command-line switches:

```
$ gpg --card-edit
[...omitted...]
gpg/card> admin
Admin commands are allowed
gpg/card> passwd
```

You should set the user PIN (1), Admin PIN (3), and the Reset Code (4). Please make sure to record and store these in a safe place -- especially the Admin PIN and the Reset Code (which allows you to completely wipe the smartcard). You so rarely need to use the Admin PIN, that you will inevitably forget what it is if you do not record it.

Getting back to the main card menu, you can also set other values (such as name, sex, login data, etc), but it's not necessary and will additionally leak information about your smartcard should you lose it.

Note: Despite having the name "PIN", neither the user PIN nor the admin PIN on the card need to be numbers.

Warning: Some devices may require that you move the subkeys onto the device before you can change the passphrase. Please check the documentation provided by the device manufacturer.

Move the subkeys to your smartcard

Exit the card menu (using "q") and save all changes. Next, let's move your subkeys onto the smartcard. You will need both your PGP key passphrase and the admin PIN of the card for most operations:

```
$ gpg --edit-key [fpr]

Secret subkeys are available.

pub  ed25519/AAAABBBBCCCCDDDD
    created: 2022-12-20  expires: 2024-12-19  usage: SC
    trust: ultimate      validity: ultimate
ssb  cv25519/1111222233334444
    created: 2022-12-20  expires: never       usage: E
ssb  ed25519/5555666677778888
    created: 2017-12-07  expires: never       usage: S
[ultimate] (1). Alice Dev <adev@kernel.org>

gpg>
```

Using `--edit-key` puts us into the menu mode again, and you will notice that the key listing is a little different. From here on, all commands are done from inside this menu mode, as indicated by `gpg>`.

First, let's select the key we'll be putting onto the card -- you do this by typing `key 1` (it's the first one in the listing, the **[E]** subkey):

```
gpg> key 1
```

In the output, you should now see `ssb*` on the **[E]** key. The `*` indicates which key is currently "selected." It works as a *toggle*, meaning that if you type `key 1` again, the `*` will disappear and the key will not be selected any more.

Now, let's move that key onto the smartcard:

```
gpg> keytocard
Please select where to store the key:
  (2) Encryption key
Your selection? 2
```

Since it's our **[E]** key, it makes sense to put it into the Encryption slot. When you submit your selection, you will be prompted first for your PGP key passphrase, and then for the admin PIN. If the command returns without an error, your key has been moved.

Important: Now type `key 1` again to unselect the first key, and `key 2` to select the **[S]** key:

```
gpg> key 1
gpg> key 2
gpg> keytocard
Please select where to store the key:
  (1) Signature key
  (3) Authentication key
Your selection? 1
```


You can use the **[S]** key both for Signature and Authentication, but we want to make sure it's in the Signature slot, so choose (1). Once again, if your command returns without an error, then the operation was successful:

```
gpg> q
Save changes? (y/N) y
```

Saving the changes will delete the keys you moved to the card from your home directory (but it's okay, because we have them in our backups should we need to do this again for a replacement smartcard).

Verifying that the keys were moved

If you perform `--list-secret-keys` now, you will see a subtle difference in the output:

```
$ gpg --list-secret-keys
sec#  ed25519 2022-12-20 [SC] [expires: 2024-12-19]
      00000000000000000000000000000000AAAABBBBCCCCDDDD
uid      [ultimate] Alice Dev <adev@kernel.org>
ssb>  cv25519 2022-12-20 [E] [expires: 2024-12-19]
ssb>  ed25519 2022-12-20 [S]
```

The `>` in the `ssb>` output indicates that the subkey is only available on the smartcard. If you go back into your secret keys directory and look at the contents there, you will notice that the `.key` files there have been replaced with stubs:

```
$ cd ~/.gnupg/private-keys-v1.d
$ strings *.key | grep 'private-key'
```

The output should contain `shadowed-private-key` to indicate that these files are only stubs and the actual content is on the smartcard.

Verifying that the smartcard is functioning

To verify that the smartcard is working as intended, you can create a signature:

```
$ echo "Hello world" | gpg --clearsign > /tmp/test.asc
$ gpg --verify /tmp/test.asc
```

This should ask for your smartcard PIN on your first command, and then show "Good signature" after you run `gpg --verify`.

Congratulations, you have successfully made it extremely difficult to steal your digital developer identity!

Other common GnuPG operations

Here is a quick reference for some common operations you'll need to do with your PGP key.

Mounting your safe offline storage

You will need your Certify key for any of the operations below, so you will first need to mount your backup offline storage and tell GnuPG to use it:

```
$ export GNUPGHOME=/media/disk/foo/gnupg-backup
$ gpg --list-secret-keys
```

You want to make sure that you see `sec` and not `sec#` in the output (the `#` means the key is not available and you're still using your regular home directory location).

Extending key expiration date

The Certify key has the default expiration date of 2 years from the date of creation. This is done both for security reasons and to make obsolete keys eventually disappear from keyserver.

To extend the expiration on your key by a year from current date, just run:

```
$ gpg --quick-set-expire [fpr] 1y
```

You can also use a specific date if that is easier to remember (e.g. your birthday, January 1st, or Canada Day):

```
$ gpg --quick-set-expire [fpr] 2025-07-01
```

Remember to send the updated key back to keyserver:

```
$ gpg --send-key [fpr]
```

Updating your work directory after any changes

After you make any changes to your key using the offline storage, you will want to import these changes back into your regular working directory:

```
$ gpg --export | gpg --homedir ~/.gnupg --import
$ unset GNUPGHOME
```

Using gpg-agent over ssh

You can forward your gpg-agent over ssh if you need to sign tags or commits on a remote system. Please refer to the instructions provided on the GnuPG wiki:

- [Agent Forwarding over SSH](#)

It works more smoothly if you can modify the sshd server settings on the remote end.

* Using PGP with Git

One of the core features of Git is its decentralized nature -- once a repository is cloned to your system, you have full history of the project, including all of its tags, commits and branches. However, with hundreds of cloned repositories floating around, how does anyone verify that their copy of linux.git has not been tampered with by a malicious third party?

Or what happens if a backdoor is discovered in the code and the "Author" line in the commit says it was done by you, while you're pretty sure you had [nothing to do with it](#)?

To address both of these issues, Git introduced PGP integration. Signed tags prove the repository integrity by assuring that its contents are exactly the same as on the workstation of the developer who created the tag, while signed commits make it nearly impossible for someone to impersonate you without having access to your PGP keys.

Configure git to use your PGP key

If you only have one secret key in your keyring, then you don't really need to do anything extra, as it becomes your default key. However, if you happen to have multiple secret keys, you can tell git which key should be used ([fpr] is the fingerprint of your key):

```
$ git config --global user.signingKey [fpr]
```

How to work with signed tags

To create a signed tag, simply pass the -s switch to the tag command:

```
$ git tag -s [tagname]
```

Our recommendation is to always sign git tags, as this allows other developers to ensure that the git repository they are pulling from has not been maliciously altered.

How to verify signed tags

To verify a signed tag, simply use the verify-tag command:

```
$ git verify-tag [tagname]
```

If you are pulling a tag from another fork of the project repository, git should automatically verify the signature at the tip you're pulling and show you the results during the merge operation:

```
$ git pull [url] tags/sometag
```

The merge message will contain something like this:

```
Merge tag 'sometag' of [url]

[Tag message]

# gpg: Signature made [...]
# gpg: Good signature from [...]
```

If you are verifying someone else's git tag, then you will need to import their PGP key. Please refer to the *"How to work with signed patches"* section below.

Configure git to always sign annotated tags

Chances are, if you're creating an annotated tag, you'll want to sign it. To force git to always sign annotated tags, you can set a global configuration option:

```
$ git config --global tag.forceSignAnnotated true
```

How to work with signed commits

It is easy to create signed commits, but it is much more difficult to use them in Linux kernel development, since it relies on patches sent to the mailing list, and this workflow does not preserve PGP commit signatures. Furthermore, when rebasing your repository to match upstream, even your own PGP commit signatures will end up discarded. For this reason, most kernel developers don't bother signing their commits and will ignore signed commits in any external repositories that they rely upon in their work.

However, if you have your working git tree publicly available at some git hosting service (kernel.org, infradead.org, ozlabs.org, or others), then the recommendation is that you sign all your git commits even if upstream developers do not directly benefit from this practice.

We recommend this for the following reasons:

1. Should there ever be a need to perform code forensics or track code provenance, even externally maintained trees carrying PGP commit signatures will be valuable for such purposes.
2. If you ever need to re-clone your local repository (for example, after a disk failure), this lets you easily verify the repository integrity before resuming your work.
3. If someone needs to cherry-pick your commits, this allows them to quickly verify their integrity before applying them.

Creating signed commits

To create a signed commit, you just need to pass the `-S` flag to the `git commit` command (it's capital `-S` due to collision with another flag):

```
$ git commit -S
```

Configure git to always sign commits

You can tell git to always sign commits:

```
git config --global commit.gpgSign true
```

Note: Make sure you configure `gpg-agent` before you turn this on.

How to work with signed patches

It is possible to use your PGP key to sign patches sent to kernel developer mailing lists. Since existing email signature mechanisms (PGP-Mime or PGP-inline) tend to cause problems with regular code review tasks, you should use the tool `kernel.org` created for this purpose that puts cryptographic attestation signatures into message headers (a-la DKIM):

- [Patatt Patch Attestation](#)

Installing and configuring patatt

Patatt is packaged for many distributions already, so please check there first. You can also install it from pypi using `"pip install patatt"`.

If you already have your PGP key configured with git (via the `user.signingKey` configuration parameter), then patatt requires no further configuration. You can start signing your patches by installing the `git-send-email` hook in the repository you want:

```
patatt install-hook
```

Now any patches you send with `git send-email` will be automatically signed with your cryptographic signature.

Checking patatt signatures

If you are using b4 to retrieve and apply patches, then it will automatically attempt to verify all DKIM and patatt signatures it encounters, for example:

```
$ b4 am 20220720205013.890942-1-broonie@kernel.org
[...]
Checking attestation on all messages, may take a moment...
---
✓ [PATCH v1 1/3] kselftest/arm64: Correct buffer allocation for SVE Zu
→ registers
✓ [PATCH v1 2/3] arm64/sve: Document our actual ABI for clearing registersu
→ on syscall
✓ [PATCH v1 3/3] kselftest/arm64: Enforce actual ABI for SVE syscalls
---
✓ Signed: openpgp/broonie@kernel.org
✓ Signed: DKIM/kernel.org
```

Note: Patatt and b4 are still in active development and you should check the latest documentation for these projects for any new or updated features.

* How to verify kernel developer identities

Signing tags and commits is easy, but how does one go about verifying that the key used to sign something belongs to the actual kernel developer and not to a malicious imposter?

Configure auto-key-retrieval using WKD and DANE

If you are not already someone with an extensive collection of other developers' public keys, then you can jumpstart your keyring by relying on key auto-discovery and auto-retrieval. GnuPG can piggyback on other delegated trust technologies, namely DNSSEC and TLS, to get you going if the prospect of starting your own Web of Trust from scratch is too daunting.

Add the following to your `~/.gnupg/gpg.conf`:

```
auto-key-locate wkd,dane,local
auto-key-retrieve
```

DNS-Based Authentication of Named Entities ("DANE") is a method for publishing public keys in DNS and securing them using DNSSEC signed zones. Web Key Directory ("WKD") is the alternative method that uses https lookups for the same purpose. When using either DANE or WKD for looking up public keys, GnuPG will validate DNSSEC or TLS certificates, respectively, before adding auto-retrieved public keys to your local keyring.

Kernel.org publishes the WKD for all developers who have kernel.org accounts. Once you have the above changes in your `gpg.conf`, you can auto-retrieve the keys for Linus Torvalds and Greg Kroah-Hartman (if you don't already have them):

```
$ gpg --locate-keys torvalds@kernel.org gregkh@kernel.org
```

If you have a kernel.org account, then you should [add the kernel.org UID to your key](#) to make WKD more useful to other kernel developers.

Web of Trust (WOT) vs. Trust on First Use (TOFU)

PGP incorporates a trust delegation mechanism known as the “Web of Trust.” At its core, this is an attempt to replace the need for centralized Certification Authorities of the HTTPS/TLS world. Instead of various software makers dictating who should be your trusted certifying entity, PGP leaves this responsibility to each user.

Unfortunately, very few people understand how the Web of Trust works. While it remains an important aspect of the OpenPGP specification, recent versions of GnuPG (2.2 and above) have implemented an alternative mechanism called “Trust on First Use” (TOFU). You can think of TOFU as “the SSH-like approach to trust.” With SSH, the first time you connect to a remote system, its key fingerprint is recorded and remembered. If the key changes in the future, the SSH client will alert you and refuse to connect, forcing you to make a decision on whether you choose to trust the changed key or not. Similarly, the first time you import someone's PGP key, it is assumed to be valid. If at any point in the future GnuPG comes across another key with the same identity, both the previously imported key and the new key will be marked as invalid and you will need to manually figure out which one to keep.

We recommend that you use the combined TOFU+PGP trust model (which is the new default in GnuPG v2). To set it, add (or modify) the `trust-model` setting in `~/.gnupg/gpg.conf`:

```
trust-model tofu+pgp
```

Using the kernel.org web of trust repository

Kernel.org maintains a git repository with developers' public keys as a replacement for replicating keyserver networks that have gone mostly dark in the past few years. The full documentation for how to set up that repository as your source of public keys can be found [here](#):

- [Kernel developer PGP Keyring](#)

If you are a kernel developer, please consider submitting your key for inclusion into that keyring.

* Email clients info for Linux

* Git

These days most developers use `git send-email` instead of regular email clients. The man page for this is quite good. On the receiving end, maintainers use `git am` to apply the patches.

If you are new to git then send your first patch to yourself. Save it as raw text including all the headers. Run `git am raw_email.txt` and then review the changelog with `git log`. When that works then send the patch to the appropriate mailing list(s).

* General Preferences

Patches for the Linux kernel are submitted via email, preferably as inline text in the body of the email. Some maintainers accept attachments, but then the attachments should have content-type text/plain. However, attachments are generally frowned upon because it makes quoting portions of the patch more difficult in the patch review process.

It's also strongly recommended that you use plain text in your email body, for patches and other emails alike. <https://useplaintext.email> may be useful for information on how to configure your preferred email client, as well as listing recommended email clients should you not already have a preference.

Email clients that are used for Linux kernel patches should send the patch text untouched. For example, they should not modify or delete tabs or spaces, even at the beginning or end of lines.

Don't send patches with format=flowed. This can cause unexpected and unwanted line breaks.

Don't let your email client do automatic word wrapping for you. This can also corrupt your patch.

Email clients should not modify the character set encoding of the text. Emailed patches should be in ASCII or UTF-8 encoding only. If you configure your email client to send emails with UTF-8 encoding, you avoid some possible charset problems.

Email clients should generate and maintain "References:" or "In-Reply-To:" headers so that mail threading is not broken.

Copy-and-paste (or cut-and-paste) usually does not work for patches because tabs are converted to spaces. Using xclipboard, xclip, and/or xcutsel may work, but it's best to test this for yourself or just avoid copy-and-paste.

Don't use PGP/GPG signatures in mail that contains patches. This breaks many scripts that read and apply the patches. (This should be fixable.)

It's a good idea to send a patch to yourself, save the received message, and successfully apply it with 'patch' before sending patches to Linux mailing lists.

* Some email client (MUA) hints

Here are some specific MUA configuration hints for editing and sending patches for the Linux kernel. These are not meant to be complete software package configuration summaries.

Legend:

- TUI = text-based user interface
- GUI = graphical user interface

Alpine (TUI)

Config options:

In the *Sending Preferences* section:

- *Do Not Send Flowed Text* must be enabled
- *Strip Whitespace Before Sending* must be disabled

When composing the message, the cursor should be placed where the patch should appear, and then pressing CTRL-R let you specify the patch file to insert into the message.

Claws Mail (GUI)

Works. Some people use this successfully for patches.

To insert a patch use *Message*→*Insert File* (CTRL-I) or an external editor.

If the inserted patch has to be edited in the Claws composition window "Auto wrapping" in *Configuration*→*Preferences*→*Compose*→*Wrapping* should be disabled.

Evolution (GUI)

Some people use this successfully for patches.

When composing mail select: Preformat

from *Format*→*Paragraph Style*→*Preformatted* (CTRL-7) or the toolbar

Then use: *Insert*→*Text File...* (ALT-N x) to insert the patch.

You can also diff -Nru old.c new.c | xclip, select *Preformat*, then paste with the middle button.

Kmail (GUI)

Some people use Kmail successfully for patches.

The default setting of not composing in HTML is appropriate; do not enable it.

When composing an email, under options, uncheck "word wrap". The only disadvantage is any text you type in the email will not be word-wrapped so you will have to manually word wrap text before the patch. The easiest way around this is to compose your email with word wrap enabled, then save it as a draft. Once you pull it up again from your drafts it is now hard word-wrapped and you can uncheck "word wrap" without losing the existing wrapping.

At the bottom of your email, put the commonly-used patch delimiter before inserting your patch: three hyphens (- - -).

Then from the *Message* menu item, select *insert file* and choose your patch. As an added bonus you can customise the message creation toolbar menu and put the *insert file* icon there.

Make the composer window wide enough so that no lines wrap. As of KMail 1.13.5 (KDE 4.5.4), KMail will apply word wrapping when sending the email if the lines wrap in the composer window. Having word wrapping disabled in the Options menu isn't enough. Thus, if your patch

has very long lines, you must make the composer window very wide before sending the email. See: https://bugs.kde.org/show_bug.cgi?id=174034

You can safely GPG sign attachments, but inlined text is preferred for patches so do not GPG sign them. Signing patches that have been inserted as inlined text will make them tricky to extract from their 7-bit encoding.

If you absolutely must send patches as attachments instead of inlining them as text, right click on the attachment and select *properties*, and highlight *Suggest automatic display* to make the attachment inlined to make it more viewable.

When saving patches that are sent as inlined text, select the email that contains the patch from the message list pane, right click and select *save as*. You can use the whole email unmodified as a patch if it was properly composed. Emails are saved as read-write for user only so you will have to `chmod` them to make them group and world readable if you copy them elsewhere.

Lotus Notes (GUI)

Run away from it.

IBM Verse (Web GUI)

See Lotus Notes.

Mutt (TUI)

Plenty of Linux developers use mutt, so it must work pretty well.

Mutt doesn't come with an editor, so whatever editor you use should be used in a way that there are no automatic linebreaks. Most editors have an *insert file* option that inserts the contents of a file unaltered.

To use vim with mutt:

```
set editor="vi"
```

If using xclip, type the command:

```
:set paste
```

before middle button or shift-insert or use:

```
:r filename
```

if you want to include the patch inline. (a)ttach works fine without `set paste`.

You can also generate patches with `git format-patch` and then use Mutt to send them:

```
$ mutt -H 0001-some-bug-fix.patch
```

Config options:

It should work with default settings. However, it's a good idea to set the `send_charset` to:

```
set send_charset="us-ascii:utf-8"
```

Mutt is highly customizable. Here is a minimum configuration to start using Mutt to send patches through Gmail:

```
# .muttrc
# ===== IMAP =====
set imap_user = 'yourusername@gmail.com'
set imap_pass = 'yourpassword'
set spoolfile = imaps://imap.gmail.com/INBOX
set folder = imaps://imap.gmail.com/
set record="imaps://imap.gmail.com/[Gmail]/Sent Mail"
set postponed="imaps://imap.gmail.com/[Gmail]/Drafts"
set mbox="imaps://imap.gmail.com/[Gmail]/All Mail"

# ===== SMTP =====
set smtp_url = "smtp://username@smtp.gmail.com:587/"
set smtp_pass = $imap_pass
set ssl_force_tls = yes # Require encrypted connection

# ===== Composition =====
set editor = `echo \${EDITOR}`
set edit_headers = yes # See the headers when editing
set charset = UTF-8 # value of $LANG; also fallback for send_charset
# Sender, email address, and sign-off line must match
unset use_domain # because joe@localhost is just embarrassing
set realname = "YOUR NAME"
set from = "username@gmail.com"
set use_from = yes
```

The Mutt docs have lots more information:

<https://gitlab.com/muttmua/mutt/-/wikis/UseCases/Gmail>

<http://www.mutt.org/doc/manual/>

Pine (TUI)

Pine has had some whitespace truncation issues in the past, but these should all be fixed now.

Use alpine (pine's successor) if you can.

Config options:

- `quell-flowed-text` is needed for recent versions
- the `no-strip-whitespace-before-send` option is needed

Sylpheed (GUI)

- Works well for inlining text (or using attachments).
- Allows use of an external editor.
- Is slow on large folders.
- Won't do TLS SMTP auth over a non-SSL connection.
- Has a helpful ruler bar in the compose window.
- Adding addresses to address book doesn't understand the display name properly.

Thunderbird (GUI)

Thunderbird is an Outlook clone that likes to mangle text, but there are ways to coerce it into behaving.

After doing the modifications, this includes installing the extensions, you need to restart Thunderbird.

- Allow use of an external editor:

The easiest thing to do with Thunderbird and patches is to use extensions which open your favorite external editor.

Here are some example extensions which are capable of doing this.

- "External Editor Revived"

<https://github.com/Frederick888/external-editor-revived>

<https://addons.thunderbird.net/en-GB/thunderbird/addon/external-editor-revived/>

It requires installing a "native messaging host". Please read the wiki which can be found here: <https://github.com/Frederick888/external-editor-revived/wiki>

- "External Editor"

<https://github.com/exteditor/exteditor>

To do this, download and install the extension, then open the *compose* window, add a button for it using *View→Toolbars→Customize...* then just click on the new button when you wish to use the external editor.

Please note that "External Editor" requires that your editor must not fork, or in other words, the editor must not return before closing. You may have to pass additional flags or change the settings of your editor. Most notably if you are using *gvim* then you must pass the *-f* option to *gvim* by putting */usr/bin/gvim -f -nofork* (if the binary is in */usr/bin*) to the text editor field in *external editor* settings. If you are using some other editor then please read its manual to find out how to do this.

To beat some sense out of the internal editor, do this:

- Edit your Thunderbird config settings so that it won't use *format=flowed*! Go to your main window and find the button for your main dropdown menu. *Main Menu→Preferences→General→Config Editor...* to bring up the thunderbird's registry editor.
 - Set *mailnews.send_plaintext_flowed* to false

- Set `mailnews.wraplength` from 72 to 0
- Don't write HTML messages! Go to the main window *Main Menu*→*Account Settings*→*youracc@server.something*→*Composition & Addressing*! There you can disable the option "Compose messages in HTML format".
- Open messages only as plain text! Go to the main window *Main Menu*→*View*→*Message Body As*→*Plain Text*!

TkRat (GUI)

Works. Use "Insert file..." or external editor.

Gmail (Web GUI)

Does not work for sending patches.

Gmail web client converts tabs to spaces automatically.

At the same time it wraps lines every 78 chars with CRLF style line breaks although `tab2space` problem can be solved with external editor.

Another problem is that Gmail will base64-encode any message that has a non-ASCII character. That includes things like European names.

Proton Mail

Proton Mail has a "feature" where it looks up keys using Web Key Directory (WKD) and encrypts mail to any recipients for which it finds a key. Kernel.org publishes the WKD for all developers who have kernel.org accounts. As a result, emails sent using Proton Mail to kernel.org addresses will be encrypted. Unfortunately, Proton Mail does not provide a mechanism to disable the automatic encryption, viewing it as a privacy feature. The automatic encryption feature is also enabled for mail sent via the Proton Mail Bridge, so this affects all outgoing messages, including patches sent with `git send-email`. Encrypted mail adds unnecessary friction, as other developers may not have mail clients, or tooling, configured for use with encrypted mail and some mail clients may encrypt responses to encrypted mail for all recipients, including the mailing lists. Unless a way to disable this "feature" is introduced, Proton Mail is unsuited to kernel development.

* Applying Patches To The Linux Kernel

Original by:

Jesper Juhl, August 2005

Note: This document is obsolete. In most cases, rather than using `patch` manually, you'll almost certainly want to look at using Git instead.

A frequently asked question on the Linux Kernel Mailing List is how to apply a patch to the kernel or, more specifically, what base kernel a patch for one of the many trees/branches should be applied to. Hopefully this document will explain this to you.

In addition to explaining how to apply and revert patches, a brief description of the different kernel trees (and examples of how to apply their specific patches) is also provided.

*** What is a patch?**

A patch is a small text document containing a delta of changes between two different versions of a source tree. Patches are created with the `diff` program.

To correctly apply a patch you need to know what base it was generated from and what new version the patch will change the source tree into. These should both be present in the patch file metadata or be possible to deduce from the filename.

*** How do I apply or revert a patch?**

You apply a patch with the `patch` program. The `patch` program reads a diff (or patch) file and makes the changes to the source tree described in it.

Patches for the Linux kernel are generated relative to the parent directory holding the kernel source dir.

This means that paths to files inside the patch file contain the name of the kernel source directories it was generated against (or some other directory names like "a/" and "b/").

Since this is unlikely to match the name of the kernel source dir on your local machine (but is often useful info to see what version an otherwise unlabeled patch was generated against) you should change into your kernel source directory and then strip the first element of the path from filenames in the patch file when applying it (the `-p1` argument to `patch` does this).

To revert a previously applied patch, use the `-R` argument to `patch`. So, if you applied a patch like this:

```
patch -p1 < ../patch-x.y.z
```

You can revert (undo) it like this:

```
patch -R -p1 < ../patch-x.y.z
```

*** How do I feed a patch/diff file to patch?**

This (as usual with Linux and other UNIX like operating systems) can be done in several different ways.

In all the examples below I feed the file (in uncompressed form) to `patch` via `stdin` using the following syntax:

```
patch -p1 < path/to/patch-x.y.z
```

If you just want to be able to follow the examples below and don't want to know of more than one way to use `patch`, then you can stop reading this section here.

Patch can also get the name of the file to use via the `-i` argument, like this:

```
patch -p1 -i path/to/patch-x.y.z
```

If your patch file is compressed with `gzip` or `xz` and you don't want to uncompress it before applying it, then you can feed it to `patch` like this instead:

```
xzcat path/to/patch-x.y.z.xz | patch -p1  
bzip2cat path/to/patch-x.y.z.gz | patch -p1
```

If you wish to uncompress the patch file by hand first before applying it (what I assume you've done in the examples below), then you simply run `gunzip` or `xz` on the file -- like this:

```
gunzip patch-x.y.z.gz  
xz -d patch-x.y.z.xz
```

Which will leave you with a plain text `patch-x.y.z` file that you can feed to `patch` via `stdin` or the `-i` argument, as you prefer.

A few other nice arguments for `patch` are `-s` which causes `patch` to be silent except for errors which is nice to prevent errors from scrolling out of the screen too fast, and `--dry-run` which causes `patch` to just print a listing of what would happen, but doesn't actually make any changes. Finally `--verbose` tells `patch` to print more information about the work being done.

* Common errors when patching

When `patch` applies a patch file it attempts to verify the sanity of the file in different ways.

Checking that the file looks like a valid patch file and checking the code around the bits being modified matches the context provided in the patch are just two of the basic sanity checks `patch` does.

If `patch` encounters something that doesn't look quite right it has two options. It can either refuse to apply the changes and abort or it can try to find a way to make the patch apply with a few minor changes.

One example of something that's not 'quite right' that `patch` will attempt to fix up is if all the context matches, the lines being changed match, but the line numbers are different. This can happen, for example, if the patch makes a change in the middle of the file but for some reasons a few lines have been added or removed near the beginning of the file. In that case everything looks good it has just moved up or down a bit, and `patch` will usually adjust the line numbers and apply the patch.

Whenever `patch` applies a patch that it had to modify a bit to make it fit it'll tell you about it by saying the patch applied with **fuzz**. You should be wary of such changes since even though `patch` probably got it right it doesn't /always/ get it right, and the result will sometimes be wrong.

When `patch` encounters a change that it can't fix up with `fuzz` it rejects it outright and leaves a file with a `.rej` extension (a reject file). You can read this file to see exactly what change couldn't be applied, so you can go fix it up by hand if you wish.

If you don't have any third-party patches applied to your kernel source, but only patches from `kernel.org` and you apply the patches in the correct order, and have made no modifications yourself to the source files, then you should never see a `fuzz` or `reject` message from `patch`. If

you do see such messages anyway, then there's a high risk that either your local source tree or the patch file is corrupted in some way. In that case you should probably try re-downloading the patch and if things are still not OK then you'd be advised to start with a fresh tree downloaded in full from kernel.org.

Let's look a bit more at some of the messages patch can produce.

If patch stops and presents a `File to patch:` prompt, then patch could not find a file to be patched. Most likely you forgot to specify `-p1` or you are in the wrong directory. Less often, you'll find patches that need to be applied with `-p0` instead of `-p1` (reading the patch file should reveal if this is the case -- if so, then this is an error by the person who created the patch but is not fatal).

If you get `Hunk #2 succeeded at 1887 with fuzz 2 (offset 7 lines)`, or a message similar to that, then it means that patch had to adjust the location of the change (in this example it needed to move 7 lines from where it expected to make the change to make it fit).

The resulting file may or may not be OK, depending on the reason the file was different than expected.

This often happens if you try to apply a patch that was generated against a different kernel version than the one you are trying to patch.

If you get a message like `Hunk #3 FAILED at 2387.`, then it means that the patch could not be applied correctly and the patch program was unable to fuzz its way through. This will generate a `.rej` file with the change that caused the patch to fail and also a `.orig` file showing you the original content that couldn't be changed.

If you get `Reversed (or previously applied) patch detected!` Assume `-R? [n]` then patch detected that the change contained in the patch seems to have already been made.

If you actually did apply this patch previously and you just re-applied it in error, then just say `[n]o` and abort this patch. If you applied this patch previously and actually intended to revert it, but forgot to specify `-R`, then you can say `[y]es` here to make patch revert it for you.

This can also happen if the creator of the patch reversed the source and destination directories when creating the patch, and in that case reverting the patch will in fact apply it.

A message similar to `patch: **** unexpected end of file in patch` or `patch unexpectedly ends in middle of line` means that patch could make no sense of the file you fed to it. Either your download is broken, you tried to feed patch a compressed patch file without uncompressing it first, or the patch file that you are using has been mangled by a mail client or mail transfer agent along the way somewhere, e.g., by splitting a long line into two lines. Often these warnings can easily be fixed by joining (concatenating) the two lines that had been split.

As I already mentioned above, these errors should never happen if you apply a patch from kernel.org to the correct version of an unmodified source tree. So if you get these errors with kernel.org patches then you should probably assume that either your patch file or your tree is broken and I'd advise you to start over with a fresh download of a full kernel tree and the patch you wish to apply.

* Are there any alternatives to patch?

Yes there are alternatives.

You can use the `interdiff` program (<http://cyberelk.net/tim/patchutils/>) to generate a patch representing the differences between two patches and then apply the result.

This will let you move from something like 5.7.2 to 5.7.3 in a single step. The `-z` flag to `interdiff` will even let you feed it patches in `gzip` or `bzip2` compressed form directly without the use of `zcat` or `bzcat` or manual decompression.

Here's how you'd go from 5.7.2 to 5.7.3 in a single step:

```
interdiff -z ../patch-5.7.2.gz ../patch-5.7.3.gz | patch -p1
```

Although `interdiff` may save you a step or two you are generally advised to do the additional steps since `interdiff` can get things wrong in some cases.

Another alternative is `ketchup`, which is a python script for automatic downloading and applying of patches (<https://www.selenic.com/ketchup/>).

Other nice tools are `diffstat`, which shows a summary of changes made by a patch; `lsdiff`, which displays a short listing of affected files in a patch file, along with (optionally) the line numbers of the start of each patch; and `grepdiff`, which displays a list of the files modified by a patch where the patch contains a given regular expression.

* Where can I download the patches?

The patches are available at <https://kernel.org/> Most recent patches are linked from the front page, but they also have specific homes.

The 5.x.y (-stable) and 5.x patches live at

<https://www.kernel.org/pub/linux/kernel/v5.x/>

The 5.x.y incremental patches live at

<https://www.kernel.org/pub/linux/kernel/v5.x/incr/>

The -rc patches are not stored on the webserver but are generated on demand from git tags such as

<https://git.kernel.org/torvalds/p/v5.1-rc1/v5.0>

The stable -rc patches live at

<https://www.kernel.org/pub/linux/kernel/v5.x/stable-review/>

* The 5.x kernels

These are the base stable releases released by Linus. The highest numbered release is the most recent.

If regressions or other serious flaws are found, then a -stable fix patch will be released (see below) on top of this base. Once a new 5.x base kernel is released, a patch is made available that is a delta between the previous 5.x kernel and the new one.

To apply a patch moving from 5.6 to 5.7, you'd do the following (note that such patches do **NOT** apply on top of 5.x.y kernels but on top of the base 5.x kernel -- if you need to move from 5.x.y to 5.x+1 you need to first revert the 5.x.y patch).

Here are some examples:

```
# moving from 5.6 to 5.7

$ cd ~/linux-5.6           # change to kernel source dir
$ patch -p1 < ../patch-5.7 # apply the 5.7 patch
$ cd ..
$ mv linux-5.6 linux-5.7   # rename source dir

# moving from 5.6.1 to 5.7

$ cd ~/linux-5.6.1         # change to kernel source dir
$ patch -p1 -R < ../patch-5.6.1 # revert the 5.6.1 patch
                                # source dir is now 5.6
$ patch -p1 < ../patch-5.7   # apply new 5.7 patch
$ cd ..
$ mv linux-5.6.1 linux-5.7   # rename source dir
```

* The 5.x.y kernels

Kernels with 3-digit versions are -stable kernels. They contain small(ish) critical fixes for security problems or significant regressions discovered in a given 5.x kernel.

This is the recommended branch for users who want the most recent stable kernel and are not interested in helping test development/experimental versions.

If no 5.x.y kernel is available, then the highest numbered 5.x kernel is the current stable kernel.

The -stable team provides normal as well as incremental patches. Below is how to apply these patches.

Normal patches

These patches are not incremental, meaning that for example the 5.7.3 patch does not apply on top of the 5.7.2 kernel source, but rather on top of the base 5.7 kernel source.

So, in order to apply the 5.7.3 patch to your existing 5.7.2 kernel source you have to first back out the 5.7.2 patch (so you are left with a base 5.7 kernel source) and then apply the new 5.7.3 patch.

Here's a small example:

```
$ cd ~/linux-5.7.2           # change to the kernel source dir
$ patch -p1 -R < ../patch-5.7.2 # revert the 5.7.2 patch
$ patch -p1 < ../patch-5.7.3   # apply the new 5.7.3 patch
$ cd ..
$ mv linux-5.7.2 linux-5.7.3   # rename the kernel source dir
```

Incremental patches

Incremental patches are different: instead of being applied on top of base 5.x kernel, they are applied on top of previous stable kernel (5.x.y-1).

Here's the example to apply these:

```
$ cd ~/linux-5.7.2           # change to the kernel source dir
$ patch -p1 < ../patch-5.7.2-3 # apply the new 5.7.3 patch
$ cd ..
$ mv linux-5.7.2 linux-5.7.3   # rename the kernel source dir
```

* The -rc kernels

These are release-candidate kernels. These are development kernels released by Linus whenever he deems the current git (the kernel's source management tool) tree to be in a reasonably sane state adequate for testing.

These kernels are not stable and you should expect occasional breakage if you intend to run them. This is however the most stable of the main development branches and is also what will eventually turn into the next stable kernel, so it is important that it be tested by as many people as possible.

This is a good branch to run for people who want to help out testing development kernels but do not want to run some of the really experimental stuff (such people should see the sections about -next and -mm kernels below).

The -rc patches are not incremental, they apply to a base 5.x kernel, just like the 5.x.y patches described above. The kernel version before the -rcN suffix denotes the version of the kernel that this -rc kernel will eventually turn into.

So, 5.8-rc5 means that this is the fifth release candidate for the 5.8 kernel and the patch should be applied on top of the 5.7 kernel source.

Here are 3 examples of how to apply these patches:

```
# first an example of moving from 5.7 to 5.8-rc3

$ cd ~/linux-5.7                # change to the 5.7 source dir
$ patch -p1 < ../patch-5.8-rc3  # apply the 5.8-rc3 patch
$ cd ..
$ mv linux-5.7 linux-5.8-rc3    # rename the source dir

# now let's move from 5.8-rc3 to 5.8-rc5

$ cd ~/linux-5.8-rc3            # change to the 5.8-rc3 dir
$ patch -p1 -R < ../patch-5.8-rc3 # revert the 5.8-rc3 patch
$ patch -p1 < ../patch-5.8-rc5    # apply the new 5.8-rc5 patch
$ cd ..
$ mv linux-5.8-rc3 linux-5.8-rc5 # rename the source dir

# finally let's try and move from 5.7.3 to 5.8-rc5

$ cd ~/linux-5.7.3              # change to the kernel source dir
$ patch -p1 -R < ../patch-5.7.3  # revert the 5.7.3 patch
$ patch -p1 < ../patch-5.8-rc5    # apply new 5.8-rc5 patch
$ cd ..
$ mv linux-5.7.3 linux-5.8-rc5    # rename the kernel source dir
```

* The -mm patches and the linux-next tree

The -mm patches are experimental patches released by Andrew Morton.

In the past, -mm tree were used to also test subsystem patches, but this function is now done via the *linux-next* (<https://www.kernel.org/doc/man-pages/linux-next.html>) tree. The Subsystem maintainers push their patches first to linux-next, and, during the merge window, sends them directly to Linus.

The -mm patches serve as a sort of proving ground for new features and other experimental patches that aren't merged via a subsystem tree. Once such patches has proved its worth in -mm for a while Andrew pushes it on to Linus for inclusion in mainline.

The linux-next tree is daily updated, and includes the -mm patches. Both are in constant flux and contains many experimental features, a lot of debugging patches not appropriate for mainline etc., and is the most experimental of the branches described in this document.

These patches are not appropriate for use on systems that are supposed to be stable and they are more risky to run than any of the other branches (make sure you have up-to-date backups -- that goes for any experimental kernel but even more so for -mm patches or using a Kernel from the linux-next tree).

Testing of -mm patches and linux-next is greatly appreciated since the whole point of those are to weed out regressions, crashes, data corruption bugs, build breakage (and any other bug in general) before changes are merged into the more stable mainline Linus tree.

But testers of -mm and linux-next should be aware that breakages are more common than in any other tree.

This concludes this list of explanations of the various kernel trees. I hope you are now clear on how to apply the various patches and help testing the kernel.

Thank you's to Randy Dunlap, Rolf Eike Beer, Linus Torvalds, Bodo Eggert, Johannes Stezenbach, Grant Coady, Pavel Machek and others that I may have forgotten for their reviews and contributions to this document.

* Backporting and conflict resolution

Author

Vegard Nossum <vegard.nossum@oracle.com>

- *Introduction*
- *Applying the patch to a tree*
- *Resolving conflicts*
 - *Prerequisite patches*
 - * *git log*
 - * *git blame*
 - * *Prerequisite vs. incidental patches*
 - *Understanding conflict markers*
 - * *Combined diffs*
 - * *Better diffs*
 - * *Merge styles and diff3*
 - *Iterating on conflict resolutions*
 - * *Resolution process*
 - * *Dealing with file renames*
 - *Gotchas*
 - * *Function arguments*
 - * *Error handling*
 - * *Refactored code*
- *Verifying the result*
 - *colordiff*
 - *Build testing*
 - *Runtime testing*
- *Submitting backports to stable*
- *A few final words of advice*
- *Examples*

* Introduction

Some developers may never really have to deal with backporting patches, merging branches, or resolving conflicts in their day-to-day work, so when a merge conflict does pop up, it can be daunting. Luckily, resolving conflicts is a skill like any other, and there are many useful techniques you can use to make the process smoother and increase your confidence in the result.

This document aims to be a comprehensive, step-by-step guide to backporting and conflict resolution.

* Applying the patch to a tree

Sometimes the patch you are backporting already exists as a git commit, in which case you just cherry-pick it directly using `git cherry-pick`. However, if the patch comes from an email, as it often does for the Linux kernel, you will need to apply it to a tree using `git am`.

If you've ever used `git am`, you probably already know that it is quite picky about the patch applying perfectly to your source tree. In fact, you've probably had nightmares about `.rej` files and trying to edit the patch to make it apply.

It is strongly recommended to instead find an appropriate base version where the patch applies cleanly and *then* cherry-pick it over to your destination tree, as this will make git output conflict markers and let you resolve conflicts with the help of git and any other conflict resolution tools you might prefer to use. For example, if you want to apply a patch that just arrived on LKML to an older stable kernel, you can apply it to the most recent mainline kernel and then cherry-pick it to your older stable branch.

It's generally better to use the exact same base as the one the patch was generated from, but it doesn't really matter that much as long as it applies cleanly and isn't too far from the original base. The only problem with applying the patch to the "wrong" base is that it may pull in more unrelated changes in the context of the diff when cherry-picking it to the older branch.

A good reason to prefer `git cherry-pick` over `git am` is that git knows the precise history of an existing commit, so it will know when code has moved around and changed the line numbers; this in turn makes it less likely to apply the patch to the wrong place (which can result in silent mistakes or messy conflicts).

If you are using [b4](#), and you are applying the patch directly from an email, you can use `b4 am` with the options `-g/- -guess-base` and `-3/- -prep-3way` to do some of this automatically (see the [b4 presentation](#) for more information). However, the rest of this article will assume that you are doing a plain `git cherry-pick`.

Once you have the patch in git, you can go ahead and cherry-pick it into your source tree. Don't forget to cherry-pick with `-x` if you want a written record of where the patch came from!

Note that if you are submitting a patch for stable, the format is slightly different; the first line after the subject line needs to be either:

```
commit <upstream commit> upstream
```

or:

```
[ Upstream commit <upstream commit> ]
```

* Resolving conflicts

Uh-oh; the cherry-pick failed with a vaguely threatening message:

```
CONFLICT (content): Merge conflict
```

What to do now?

In general, conflicts appear when the context of the patch (i.e., the lines being changed and/or the lines surrounding the changes) doesn't match what's in the tree you are trying to apply the patch *to*.

For backports, what likely happened was that the branch you are backporting from contains patches not in the branch you are backporting to. However, the reverse is also possible. In any case, the result is a conflict that needs to be resolved.

If your attempted cherry-pick fails with a conflict, git automatically edits the files to include so-called conflict markers showing you where the conflict is and how the two branches have diverged. Resolving the conflict typically means editing the end result in such a way that it takes into account these other commits.

Resolving the conflict can be done either by hand in a regular text editor or using a dedicated conflict resolution tool.

Many people prefer to use their regular text editor and edit the conflict directly, as it may be easier to understand what you're doing and to control the final result. There are definitely pros and cons to each method, and sometimes there's value in using both.

We will not cover using dedicated merge tools here beyond providing some pointers to various tools that you could use:

- [Emacs Ediff mode](#)
- [vimdiff/gvimdiff](#)
- [KDiff3](#)
- [TortoiseMerge](#)
- [Meld](#)
- [P4Merge](#)
- [Beyond Compare](#)
- [IntelliJ](#)
- [VSCode](#)

To configure git to work with these, see `git mergetool --help` or the official [git-mergetool documentation](#).

Prerequisite patches

Most conflicts happen because the branch you are backporting to is missing some patches compared to the branch you are backporting *from*. In the more general case (such as merging two independent branches), development could have happened on either branch, or the branches have simply diverged -- perhaps your older branch had some other backports applied to it that themselves needed conflict resolutions, causing a divergence.

It's important to always identify the commit or commits that caused the conflict, as otherwise you cannot be confident in the correctness of your resolution. As an added bonus, especially if the patch is in an area you're not that familiar with, the changelogs of these commits will often give you the context to understand the code and potential problems or pitfalls with your conflict resolution.

git log

A good first step is to look at `git log` for the file that has the conflict -- this is usually sufficient when there aren't a lot of patches to the file, but may get confusing if the file is big and frequently patched. You should run `git log` on the range of commits between your currently checked-out branch (HEAD) and the parent of the patch you are picking (<commit>), i.e.:

```
git log HEAD..<commit>^ -- <path>
```

Even better, if you want to restrict this output to a single function (because that's where the conflict appears), you can use the following syntax:

```
git log -L:'\<function\>':<path> HEAD..<commit>^
```

Note: The `\<` and `\>` around the function name ensure that the matches are anchored on a word boundary. This is important, as this part is actually a regex and git only follows the first match, so if you use `-L:thread_stack:kernel/fork.c` it may only give you results for the function `try_release_thread_stack_to_cache` even though there are many other functions in that file containing the string `thread_stack` in their names.

Another useful option for `git log` is `-G`, which allows you to filter on certain strings appearing in the diffs of the commits you are listing:

```
git log -G'regex' HEAD..<commit>^ -- <path>
```

This can also be a handy way to quickly find when something (e.g. a function call or a variable) was changed, added, or removed. The search string is a regular expression, which means you can potentially search for more specific things like assignments to a specific struct member:

```
git log -G'\->index\>.*='
```


git blame

Another way to find prerequisite commits (albeit only the most recent one for a given conflict) is to run `git blame`. In this case, you need to run it against the parent commit of the patch you are cherry-picking and the file where the conflict appeared, i.e.:

```
git blame <commit>^ -- <path>
```

This command also accepts the `-L` argument (for restricting the output to a single function), but in this case you specify the filename at the end of the command as usual:

```
git blame -L:'\<function\>' <commit>^ -- <path>
```

Navigate to the place where the conflict occurred. The first column of the blame output is the commit ID of the patch that added a given line of code.

It might be a good idea to `git show` these commits and see if they look like they might be the source of the conflict. Sometimes there will be more than one of these commits, either because multiple commits changed different lines of the same conflict area *or* because multiple subsequent patches changed the same line (or lines) multiple times. In the latter case, you may have to run `git blame` again and specify the older version of the file to look at in order to dig further back in the history of the file.

Prerequisite vs. incidental patches

Having found the patch that caused the conflict, you need to determine whether it is a prerequisite for the patch you are backporting or whether it is just incidental and can be skipped. An incidental patch would be one that touches the same code as the patch you are backporting, but does not change the semantics of the code in any material way. For example, a whitespace cleanup patch is completely incidental -- likewise, a patch that simply renames a function or a variable would be incidental as well. On the other hand, if the function being changed does not even exist in your current branch then this would not be incidental at all and you need to carefully consider whether the patch adding the function should be cherry-picked first.

If you find that there is a necessary prerequisite patch, then you need to stop and cherry-pick that instead. If you've already resolved some conflicts in a different file and don't want to do it again, you can create a temporary copy of that file.

To abort the current cherry-pick, go ahead and run `git cherry-pick --abort`, then restart the cherry-picking process with the commit ID of the prerequisite patch instead.

Understanding conflict markers

Combined diffs

Let's say you've decided against picking (or reverting) additional patches and you just want to resolve the conflict. Git will have inserted conflict markers into your file. Out of the box, this will look something like:

```
<<<<<<< HEAD
this is what's in your current tree before cherry-picking
```

```
=====
this is what the patch wants it to be after cherry-picking
>>>>>>> <commit>... title
```

This is what you would see if you opened the file in your editor. However, if you were to run `git diff` without any arguments, the output would look something like this:

```
$ git diff
[...]
++<<<<<<< HEAD
+this is what's in your current tree before cherry-picking
++=====
+ this is what the patch wants it to be after cherry-picking
++>>>>>>> <commit>... title
```

When you are resolving a conflict, the behavior of `git diff` differs from its normal behavior. Notice the two columns of diff markers instead of the usual one; this is a so-called “**combined diff**”, here showing the 3-way diff (or diff-of-diffs) between

1. the current branch (before cherry-picking) and the current working directory, and
2. the current branch (before cherry-picking) and the file as it looks after the original patch has been applied.

Better diffs

3-way combined diffs include all the other changes that happened to the file between your current branch and the branch you are cherry-picking from. While this is useful for spotting other changes that you need to take into account, this also makes the output of `git diff` somewhat intimidating and difficult to read. You may instead prefer to run `git diff HEAD` (or `git diff --ours`) which shows only the diff between the current branch before cherry-picking and the current working directory. It looks like this:

```
$ git diff HEAD
[...]
+<<<<<<< HEAD
+this is what's in your current tree before cherry-picking
+=====
+this is what the patch wants it to be after cherry-picking
+>>>>>>> <commit>... title
```

As you can see, this reads just like any other diff and makes it clear which lines are in the current branch and which lines are being added because they are part of the merge conflict or the patch being cherry-picked.

Merge styles and diff3

The default conflict marker style shown above is known as the merge style. There is also another style available, known as the diff3 style, which looks like this:

```
<<<<<<< HEAD
this is what is in your current tree before cherry-picking
||||| parent of <commit> (title)
this is what the patch expected to find there
=====
this is what the patch wants it to be after being applied
>>>>>>> <commit> (title)
```

As you can see, this has 3 parts instead of 2, and includes what git expected to find there but didn't. It is *highly recommended* to use this conflict style as it makes it much clearer what the patch actually changed; i.e., it allows you to compare the before-and-after versions of the file for the commit you are cherry-picking. This allows you to make better decisions about how to resolve the conflict.

To change conflict marker styles, you can use the following command:

```
git config merge.conflictStyle diff3
```

There is a third option, `zdiff3`, introduced in [Git 2.35](#), which has the same 3 sections as `diff3`, but where common lines have been trimmed off, making the conflict area smaller in some cases.

Iterating on conflict resolutions

The first step in any conflict resolution process is to understand the patch you are backporting. For the Linux kernel this is especially important, since an incorrect change can lead to the whole system crashing -- or worse, an undetected security vulnerability.

Understanding the patch can be easy or difficult depending on the patch itself, the changelog, and your familiarity with the code being changed. However, a good question for every change (or every hunk of the patch) might be: "Why is this hunk in the patch?" The answers to these questions will inform your conflict resolution.

Resolution process

Sometimes the easiest thing to do is to just remove all but the first part of the conflict, leaving the file essentially unchanged, and apply the changes by hand. Perhaps the patch is changing a function call argument from 0 to 1 while a conflicting change added an entirely new (and insignificant) parameter to the end of the parameter list; in that case, it's easy enough to change the argument from 0 to 1 by hand and leave the rest of the arguments alone. This technique of manually applying changes is mostly useful if the conflict pulled in a lot of unrelated context that you don't really need to care about.

For particularly nasty conflicts with many conflict markers, you can use `git add` or `git add -i` to selectively stage your resolutions to get them out of the way; this also lets you use `git diff HEAD` to always see what remains to be resolved or `git diff --cached` to see what your patch looks like so far.

Dealing with file renames

One of the most annoying things that can happen while backporting a patch is discovering that one of the files being patched has been renamed, as that typically means git won't even put in conflict markers, but will just throw up its hands and say (paraphrased): "Unmerged path! You do the work..."

There are generally a few ways to deal with this. If the patch to the renamed file is small, like a one-line change, the easiest thing is to just go ahead and apply the change by hand and be done with it. On the other hand, if the change is big or complicated, you definitely don't want to do it by hand.

As a first pass, you can try something like this, which will lower the rename detection threshold to 30% (by default, git uses 50%, meaning that two files need to have at least 50% in common for it to consider an add-delete pair to be a potential rename):

```
git cherry-pick -strategy=recursive -Xrename-threshold=30
```

Sometimes the right thing to do will be to also backport the patch that did the rename, but that's definitely not the most common case. Instead, what you can do is to temporarily rename the file in the branch you're backporting to (using `git mv` and committing the result), restart the attempt to cherry-pick the patch, rename the file back (`git mv` and committing again), and finally squash the result using `git rebase -i` (see the [rebase tutorial](#)) so it appears as a single commit when you are done.

Gotchas

Function arguments

Pay attention to changing function arguments! It's easy to gloss over details and think that two lines are the same but actually they differ in some small detail like which variable was passed as an argument (especially if the two variables are both a single character that look the same, like `i` and `j`).

Error handling

If you cherry-pick a patch that includes a `goto` statement (typically for error handling), it is absolutely imperative to double check that the target label is still correct in the branch you are backporting to. The same goes for added `return`, `break`, and `continue` statements.

Error handling is typically located at the bottom of the function, so it may not be part of the conflict even though could have been changed by other patches.

A good way to ensure that you review the error paths is to always use `git diff -W` and `git show -W` (AKA `--function-context`) when inspecting your changes. For C code, this will show you the whole function that's being changed in a patch. One of the things that often go wrong during backports is that something else in the function changed on either of the branches that you're backporting from or to. By including the whole function in the diff you get more context and can more easily spot problems that might otherwise go unnoticed.

Refactored code

Something that happens quite often is that code gets refactored by "factoring out" a common code sequence or pattern into a helper function. When backporting patches to an area where such a refactoring has taken place, you effectively need to do the reverse when backporting: a patch to a single location may need to be applied to multiple locations in the backported version. (One giveaway for this scenario is that a function was renamed -- but that's not always the case.)

To avoid incomplete backports, it's worth trying to figure out if the patch fixes a bug that appears in more than one place. One way to do this would be to use `git grep`. (This is actually a good idea to do in general, not just for backports.) If you do find that the same kind of fix would apply to other places, it's also worth seeing if those places exist upstream -- if they don't, it's likely the patch may need to be adjusted. `git log` is your friend to figure out what happened to these areas as `git blame` won't show you code that has been removed.

If you do find other instances of the same pattern in the upstream tree and you're not sure whether it's also a bug, it may be worth asking the patch author. It's not uncommon to find new bugs during backporting!

* Verifying the result

colordiff

Having committed a conflict-free new patch, you can now compare your patch to the original patch. It is highly recommended that you use a tool such as `colordiff` that can show two files side by side and color them according to the changes between them:

```
colordiff -yw -W 200 <(git diff -W <upstream commit>^-) <(git diff -W HEAD^-)
↪| less -SR
```

Here, `-y` means to do a side-by-side comparison; `-w` ignores whitespace, and `-W 200` sets the width of the output (as otherwise it will use 130 by default, which is often a bit too little).

The `rev^-` syntax is a handy shorthand for `rev^..rev`, essentially giving you just the diff for that single commit; also see the official [git rev-parse documentation](#).

Again, note the inclusion of `-W` for `git diff`; this ensures that you will see the full function for any function that has changed.

One incredibly important thing that `colordiff` does is to highlight lines that are different. For example, if an error-handling `goto` has changed labels between the original and backported patch, `colordiff` will show these side-by-side but highlighted in a different color. Thus, it is easy to see that the two `goto` statements are jumping to different labels. Likewise, lines that were not modified by either patch but differ in the context will also be highlighted and thus stand out during a manual inspection.

Of course, this is just a visual inspection; the real test is building and running the patched kernel (or program).

Build testing

We won't cover runtime testing here, but it can be a good idea to build just the files touched by the patch as a quick sanity check. For the Linux kernel you can build single files like this, assuming you have the `.config` and build environment set up correctly:

```
make path/to/file.o
```

Note that this won't discover linker errors, so you should still do a full build after verifying that the single file compiles. By compiling the single file first you can avoid having to wait for a full build *in case* there are compiler errors in any of the files you've changed.

Runtime testing

Even a successful build or boot test is not necessarily enough to rule out a missing dependency somewhere. Even though the chances are small, there could be code changes where two independent changes to the same file result in no conflicts, no compile-time errors, and runtime errors only in exceptional cases.

One concrete example of this was a pair of patches to the system call entry code where the first patch saved/restored a register and a later patch made use of the same register somewhere in the middle of this sequence. Since there was no overlap between the changes, one could cherry-pick the second patch, have no conflicts, and believe that everything was fine, when in fact the code was now scribbling over an unsaved register.

Although the vast majority of errors will be caught during compilation or by superficially exercising the code, the only way to *really* verify a backport is to review the final patch with the same level of scrutiny as you would (or should) give to any other patch. Having unit tests and regression tests or other types of automatic testing can help increase the confidence in the correctness of a backport.

* Submitting backports to stable

As the stable maintainers try to cherry-pick mainline fixes onto their stable kernels, they may send out emails asking for backports when encountering conflicts, see e.g. <<https://lore.kernel.org/stable/2023101528-jawed-shelving-071a@gregkh/>>. These emails typically include the exact steps you need to cherry-pick the patch to the correct tree and submit the patch.

One thing to make sure is that your changelog conforms to the expected format:

```
<original patch title>

[ Upstream commit <mainline rev> ]

<rest of the original changelog>
[ <summary of the conflicts and their resolutions> ]
Signed-off-by: <your name and email>
```

The "Upstream commit" line is sometimes slightly different depending on the stable version. Older version used this format:

```
commit <mainline rev> upstream.
```

It is most common to indicate the kernel version the patch applies to in the email subject line (using e.g. `git send-email --subject-prefix='PATCH 6.1.y'`), but you can also put it in the Signed-off-by:-area or below the --- line.

The stable maintainers expect separate submissions for each active stable version, and each submission should also be tested separately.

* A few final words of advice

- 1) Approach the backporting process with humility.
- 2) Understand the patch you are backporting; this means reading both the changelog and the code.
- 3) Be honest about your confidence in the result when submitting the patch.
- 4) Ask relevant maintainers for explicit acks.

* Examples

The above shows roughly the idealized process of backporting a patch. For a more concrete example, see this video tutorial where two patches are backported from mainline to stable: [Backporting Linux Kernel Patches](#).

* Adding a New System Call

This document describes what's involved in adding a new system call to the Linux kernel, over and above the normal submission advice in [Documentation/process/submitting-patches.rst](#).

* System Call Alternatives

The first thing to consider when adding a new system call is whether one of the alternatives might be suitable instead. Although system calls are the most traditional and most obvious interaction points between userspace and the kernel, there are other possibilities -- choose what fits best for your interface.

- If the operations involved can be made to look like a filesystem-like object, it may make more sense to create a new filesystem or device. This also makes it easier to encapsulate the new functionality in a kernel module rather than requiring it to be built into the main kernel.
 - If the new functionality involves operations where the kernel notifies userspace that something has happened, then returning a new file descriptor for the relevant object allows userspace to use `poll/select/epoll` to receive that notification.
 - However, operations that don't map to `read(2)/write(2)`-like operations have to be implemented as `ioctl(2)` requests, which can lead to a somewhat opaque API.

- If you're just exposing runtime system information, a new node in sysfs (see Documentation/filesystems/sysfs.rst) or the /proc filesystem may be more appropriate. However, access to these mechanisms requires that the relevant filesystem is mounted, which might not always be the case (e.g. in a namespaced/sandboxed/chrooted environment). Avoid adding any API to debugfs, as this is not considered a 'production' interface to userspace.
- If the operation is specific to a particular file or file descriptor, then an additional *fcntl(2)* command option may be more appropriate. However, *fcntl(2)* is a multiplexing system call that hides a lot of complexity, so this option is best for when the new function is closely analogous to existing *fcntl(2)* functionality, or the new functionality is very simple (for example, getting/setting a simple flag related to a file descriptor).
- If the operation is specific to a particular task or process, then an additional *prctl(2)* command option may be more appropriate. As with *fcntl(2)*, this system call is a complicated multiplexor so is best reserved for near-analogs of existing *prctl()* commands or getting/setting a simple flag related to a process.

* Designing the API: Planning for Extension

A new system call forms part of the API of the kernel, and has to be supported indefinitely. As such, it's a very good idea to explicitly discuss the interface on the kernel mailing list, and it's important to plan for future extensions of the interface.

(The syscall table is littered with historical examples where this wasn't done, together with the corresponding follow-up system calls -- *eventfd/eventfd2*, *dup2/dup3*, *inotify_init/inotify_init1*, *pipe/pipe2*, *renameat/renameat2* -- so learn from the history of the kernel and plan for extensions from the start.)

For simpler system calls that only take a couple of arguments, the preferred way to allow for future extensibility is to include a flags argument to the system call. To make sure that userspace programs can safely use flags between kernel versions, check whether the flags value holds any unknown flags, and reject the system call (with *EINVAL*) if it does:

```
if (flags & ~(THING_FLAG1 | THING_FLAG2 | THING_FLAG3))
    return -EINVAL;
```

(If no flags values are used yet, check that the flags argument is zero.)

For more sophisticated system calls that involve a larger number of arguments, it's preferred to encapsulate the majority of the arguments into a structure that is passed in by pointer. Such a structure can cope with future extension by including a size argument in the structure:

```
struct xyzzy_params {
    u32 size; /* userspace sets p->size = sizeof(struct xyzzy_params) */
    u32 param_1;
    u64 param_2;
    u64 param_3;
};
```

As long as any subsequently added field, say *param_4*, is designed so that a zero value gives the previous behaviour, then this allows both directions of version mismatch:

- To cope with a later userspace program calling an older kernel, the kernel code should check that any memory beyond the size of the structure that it expects is zero (effectively checking that `param_4 == 0`).
- To cope with an older userspace program calling a newer kernel, the kernel code can zero-extend a smaller instance of the structure (effectively setting `param_4 = 0`).

See `perf_event_open(2)` and the `perf_copy_attr()` function (in `kernel/events/core.c`) for an example of this approach.

* Designing the API: Other Considerations

If your new system call allows userspace to refer to a kernel object, it should use a file descriptor as the handle for that object -- don't invent a new type of userspace object handle when the kernel already has mechanisms and well-defined semantics for using file descriptors.

If your new `xyzyy(2)` system call does return a new file descriptor, then the flags argument should include a value that is equivalent to setting `O_CLOEXEC` on the new FD. This makes it possible for userspace to close the timing window between `xyzyy()` and calling `fcntl(fd, F_SETFD, FD_CLOEXEC)`, where an unexpected `fork()` and `execve()` in another thread could leak a descriptor to the exec'ed program. (However, resist the temptation to re-use the actual value of the `O_CLOEXEC` constant, as it is architecture-specific and is part of a numbering space of `O_*` flags that is fairly full.)

If your system call returns a new file descriptor, you should also consider what it means to use the `poll(2)` family of system calls on that file descriptor. Making a file descriptor ready for reading or writing is the normal way for the kernel to indicate to userspace that an event has occurred on the corresponding kernel object.

If your new `xyzyy(2)` system call involves a filename argument:

```
int sys_xyzyy(const char __user *path, ..., unsigned int flags);
```

you should also consider whether an `xyzyyat(2)` version is more appropriate:

```
int sys_xyzyyat(int dfd, const char __user *path, ..., unsigned int flags);
```

This allows more flexibility for how userspace specifies the file in question; in particular it allows userspace to request the functionality for an already-opened file descriptor using the `AT_EMPTY_PATH` flag, effectively giving an `fxzyy(3)` operation for free:

```
- xyzyyat(AT_FDCWD, path, ..., 0) is equivalent to xyzyy(path,...)
- xyzyyat(fd, "", ..., AT_EMPTY_PATH) is equivalent to fxzyy(fd, ...)
```

(For more details on the rationale of the `*at()` calls, see the `openat(2)` man page; for an example of `AT_EMPTY_PATH`, see the `fstatat(2)` man page.)

If your new `xyzyy(2)` system call involves a parameter describing an offset within a file, make its type `loff_t` so that 64-bit offsets can be supported even on 32-bit architectures.

If your new `xyzyy(2)` system call involves privileged functionality, it needs to be governed by the appropriate Linux capability bit (checked with a call to `capable()`), as described in the `capabilities(7)` man page. Choose an existing capability bit that governs related functionality, but try to avoid combining lots of only vaguely related functions together under the same

bit, as this goes against capabilities' purpose of splitting the power of root. In particular, avoid adding new uses of the already overly-general `CAP_SYS_ADMIN` capability.

If your new `xyzzz(2)` system call manipulates a process other than the calling process, it should be restricted (using a call to `ptrace_may_access()`) so that only a calling process with the same permissions as the target process, or with the necessary capabilities, can manipulate the target process.

Finally, be aware that some non-x86 architectures have an easier time if system call parameters that are explicitly 64-bit fall on odd-numbered arguments (i.e. parameter 1, 3, 5), to allow use of contiguous pairs of 32-bit registers. (This concern does not apply if the arguments are part of a structure that's passed in by pointer.)

* Proposing the API

To make new system calls easy to review, it's best to divide up the patchset into separate chunks. These should include at least the following items as distinct commits (each of which is described further below):

- The core implementation of the system call, together with prototypes, generic numbering, Kconfig changes and fallback stub implementation.
- Wiring up of the new system call for one particular architecture, usually x86 (including all of `x86_64`, `x86_32` and `x32`).
- A demonstration of the use of the new system call in userspace via a selftest in `tools/testing/selftests/`.
- A draft man-page for the new system call, either as plain text in the cover letter, or as a patch to the (separate) man-pages repository.

New system call proposals, like any change to the kernel's API, should always be cc'ed to linux-api@vger.kernel.org.

* Generic System Call Implementation

The main entry point for your new `xyzzz(2)` system call will be called `sys_xyzzz()`, but you add this entry point with the appropriate `SYSCALL_DEFINE(n)` macro rather than explicitly. The 'n' indicates the number of arguments to the system call, and the macro takes the system call name followed by the (type, name) pairs for the parameters as arguments. Using this macro allows metadata about the new system call to be made available for other tools.

The new entry point also needs a corresponding function prototype, in `include/linux/syscalls.h`, marked as `asmlinkage` to match the way that system calls are invoked:

```
asmlinkage long sys_xyzzz(...);
```

Some architectures (e.g. x86) have their own architecture-specific syscall tables, but several other architectures share a generic syscall table. Add your new system call to the generic list by adding an entry to the list in `include/uapi/asm-generic/unistd.h`:

```
#define __NR_xyzzz 292
__SYSCALL(__NR_xyzzz, sys_xyzzz)
```

Also update the `__NR_syscalls` count to reflect the additional system call, and note that if multiple new system calls are added in the same merge window, your new syscall number may get adjusted to resolve conflicts.

The file `kernel/sys_ni.c` provides a fallback stub implementation of each system call, returning `-ENOSYS`. Add your new system call here too:

```
COND_SYSCALL(xyzyy);
```

Your new kernel functionality, and the system call that controls it, should normally be optional, so add a `CONFIG` option (typically to `init/Kconfig`) for it. As usual for new `CONFIG` options:

- Include a description of the new functionality and system call controlled by the option.
- Make the option depend on `EXPERT` if it should be hidden from normal users.
- Make any new source files implementing the function dependent on the `CONFIG` option in the Makefile (e.g. `obj - $(CONFIG_XYZZY_SYSCALL) += xyzyy.o`).
- Double check that the kernel still builds with the new `CONFIG` option turned off.

To summarize, you need a commit that includes:

- `CONFIG` option for the new function, normally in `init/Kconfig`
- `SYSCALL_DEFINE(xyzyy, ...)` for the entry point
- corresponding prototype in `include/linux/syscalls.h`
- generic table entry in `include/uapi/asm-generic/unistd.h`
- fallback stub in `kernel/sys_ni.c`

* x86 System Call Implementation

To wire up your new system call for x86 platforms, you need to update the master syscall tables. Assuming your new system call isn't special in some way (see below), this involves a "common" entry (for `x86_64` and `x32`) in `arch/x86/entry/syscalls/syscall_64.tbl`:

```
333    common    xyzyy    sys_xyzyy
```

and an "i386" entry in `arch/x86/entry/syscalls/syscall_32.tbl`:

```
380    i386      xyzyy    sys_xyzyy
```

Again, these numbers are liable to be changed if there are conflicts in the relevant merge window.

* Compatibility System Calls (Generic)

For most system calls the same 64-bit implementation can be invoked even when the userspace program is itself 32-bit; even if the system call's parameters include an explicit pointer, this is handled transparently.

However, there are a couple of situations where a compatibility layer is needed to cope with size differences between 32-bit and 64-bit.

The first is if the 64-bit kernel also supports 32-bit userspace programs, and so needs to parse areas of (`__user`) memory that could hold either 32-bit or 64-bit values. In particular, this is needed whenever a system call argument is:

- a pointer to a pointer
- a pointer to a struct containing a pointer (e.g. `struct iovec __user *`)
- a pointer to a varying sized integral type (`time_t`, `off_t`, `long`, ...)
- a pointer to a struct containing a varying sized integral type.

The second situation that requires a compatibility layer is if one of the system call's arguments has a type that is explicitly 64-bit even on a 32-bit architecture, for example `loff_t` or `__u64`. In this case, a value that arrives at a 64-bit kernel from a 32-bit application will be split into two 32-bit values, which then need to be re-assembled in the compatibility layer.

(Note that a system call argument that's a pointer to an explicit 64-bit type does **not** need a compatibility layer; for example, `splice(2)`'s arguments of type `loff_t __user *` do not trigger the need for a `compat_` system call.)

The compatibility version of the system call is called `compat_sys_xyzzy()`, and is added with the `COMPAT_SYSCALL_DEFINE()` macro, analogously to `SYSCALL_DEFINE`. This version of the implementation runs as part of a 64-bit kernel, but expects to receive 32-bit parameter values and does whatever is needed to deal with them. (Typically, the `compat_sys_` version converts the values to 64-bit versions and either calls on to the `sys_` version, or both of them call a common inner implementation function.)

The `compat` entry point also needs a corresponding function prototype, in `include/linux/compat.h`, marked as `asmlinkage` to match the way that system calls are invoked:

```
asmlinkage long compat_sys_xyzzy(...);
```

If the system call involves a structure that is laid out differently on 32-bit and 64-bit systems, say `struct xyzzy_args`, then the `include/linux/compat.h` header file should also include a `compat` version of the structure (`struct compat_xyzzy_args`) where each variable-size field has the appropriate `compat_` type that corresponds to the type in `struct xyzzy_args`. The `compat_sys_xyzzy()` routine can then use this `compat_` structure to parse the arguments from a 32-bit invocation.

For example, if there are fields:

```
struct xyzzy_args {
    const char __user *ptr;
    __kernel_long_t varying_val;
    u64 fixed_val;
    /* ... */
};
```

in struct `xyzzz_args`, then struct `compat_xyzzz_args` would have:

```
struct compat_xyzzz_args {
    compat_uptr_t ptr;
    compat_long_t varying_val;
    u64 fixed_val;
    /* ... */
};
```

The generic system call list also needs adjusting to allow for the compat version; the entry in `include/uapi/asm-generic/unistd.h` should use `__SC_COMP` rather than `__SYSCALL`:

```
#define __NR_xyzzz 292
__SC_COMP(__NR_xyzzz, sys_xyzzz, compat_sys_xyzzz)
```

To summarize, you need:

- a `COMPAT_SYSCALL_DEFINE(xyzzz, ...)` for the compat entry point
- corresponding prototype in `include/linux/compat.h`
- (if needed) 32-bit mapping struct in `include/linux/compat.h`
- instance of `__SC_COMP` not `__SYSCALL` in `include/uapi/asm-generic/unistd.h`

* Compatibility System Calls (x86)

To wire up the x86 architecture of a system call with a compatibility version, the entries in the syscall tables need to be adjusted.

First, the entry in `arch/x86/entry/syscalls/syscall_32.tbl` gets an extra column to indicate that a 32-bit userspace program running on a 64-bit kernel should hit the compat entry point:

380	i386	xyzzz	sys_xyzzz	__ia32_compat_sys_xyzzz
-----	------	-------	-----------	-------------------------

Second, you need to figure out what should happen for the x32 ABI version of the new system call. There's a choice here: the layout of the arguments should either match the 64-bit version or the 32-bit version.

If there's a pointer-to-a-pointer involved, the decision is easy: x32 is ILP32, so the layout should match the 32-bit version, and the entry in `arch/x86/entry/syscalls/syscall_64.tbl` is split so that x32 programs hit the compatibility wrapper:

333	64	xyzzz	sys_xyzzz
...			
555	x32	xyzzz	__x32_compat_sys_xyzzz

If no pointers are involved, then it is preferable to re-use the 64-bit system call for the x32 ABI (and consequently the entry in `arch/x86/entry/syscalls/syscall_64.tbl` is unchanged).

In either case, you should check that the types involved in your argument layout do indeed map exactly from x32 (-mx32) to either the 32-bit (-m32) or 64-bit (-m64) equivalents.

* System Calls Returning Elsewhere

For most system calls, once the system call is complete the user program continues exactly where it left off -- at the next instruction, with the stack the same and most of the registers the same as before the system call, and with the same virtual memory space.

However, a few system calls do things differently. They might return to a different location (`rt_sigreturn`) or change the memory space (`fork/vfork/clone`) or even architecture (`execve/execveat`) of the program.

To allow for this, the kernel implementation of the system call may need to save and restore additional registers to the kernel stack, allowing complete control of where and how execution continues after the system call.

This is arch-specific, but typically involves defining assembly entry points that save/restore additional registers and invoke the real system call entry point.

For `x86_64`, this is implemented as a `stub_xyzzy` entry point in `arch/x86/entry/entry_64.S`, and the entry in the syscall table (`arch/x86/entry/syscalls/syscall_64.tbl`) is adjusted to match:

333	common	xyzzy	stub_xyzzy
-----	--------	-------	------------

The equivalent for 32-bit programs running on a 64-bit kernel is normally called `stub32_xyzzy` and implemented in `arch/x86/entry/entry_64_compat.S`, with the corresponding syscall table adjustment in `arch/x86/entry/syscalls/syscall_32.tbl`:

380	i386	xyzzy	sys_xyzzy	stub32_xyzzy
-----	------	-------	-----------	--------------

If the system call needs a compatibility layer (as in the previous section) then the `stub32_` version needs to call on to the `compat_sys_` version of the system call rather than the native 64-bit version. Also, if the x32 ABI implementation is not common with the `x86_64` version, then its syscall table will also need to invoke a stub that calls on to the `compat_sys_` version.

For completeness, it's also nice to set up a mapping so that user-mode Linux still works -- its syscall table will reference `stub_xyzzy`, but the UML build doesn't include `arch/x86/entry/entry_64.S` implementation (because UML simulates registers etc). Fixing this is as simple as adding a `#define` to `arch/x86/um/sys_call_table_64.c`:

<code>#define stub_xyzzy sys_xyzzy</code>

* Other Details

Most of the kernel treats system calls in a generic way, but there is the occasional exception that may need updating for your particular system call.

The audit subsystem is one such special case; it includes (arch-specific) functions that classify some special types of system call -- specifically file open (`open/openat`), program execution (`execve/exeveat`) or socket multiplexor (`socketcall`) operations. If your new system call is analogous to one of these, then the audit system should be updated.

More generally, if there is an existing system call that is analogous to your new system call, it's worth doing a kernel-wide `grep` for the existing system call to check there are no other special cases.

* Testing

A new system call should obviously be tested; it is also useful to provide reviewers with a demonstration of how user space programs will use the system call. A good way to combine these aims is to include a simple self-test program in a new directory under `tools/testing/selftests/`.

For a new system call, there will obviously be no libc wrapper function and so the test will need to invoke it using `syscall()`; also, if the system call involves a new userspace-visible structure, the corresponding header will need to be installed to compile the test.

Make sure the selftest runs successfully on all supported architectures. For example, check that it works when compiled as an `x86_64` (`-m64`), `x86_32` (`-m32`) and `x32` (`-mx32`) ABI program.

For more extensive and thorough testing of new functionality, you should also consider adding tests to the Linux Test Project, or to the `xfstests` project for filesystem-related changes.

- <https://linux-test-project.github.io/>
- [git://git.kernel.org/pub/scm/fs/xfs/xfstests-dev.git](https://git.kernel.org/pub/scm/fs/xfs/xfstests-dev.git)

* Man Page

All new system calls should come with a complete man page, ideally using groff markup, but plain text will do. If groff is used, it's helpful to include a pre-rendered ASCII version of the man page in the cover email for the patchset, for the convenience of reviewers.

The man page should be cc'ed to linux-man@vger.kernel.org For more details, see <https://www.kernel.org/doc/man-pages/patches.html>

* Do not call System Calls in the Kernel

System calls are, as stated above, interaction points between userspace and the kernel. Therefore, system call functions such as `sys_xyzzy()` or `compat_sys_xyzzy()` should only be called from userspace via the syscall table, but not from elsewhere in the kernel. If the syscall functionality is useful to be used within the kernel, needs to be shared between an old and a new syscall, or needs to be shared between a syscall and its compatibility variant, it should be implemented by means of a "helper" function (such as `ksys_xyzzy()`). This kernel function may then be called within the syscall stub (`sys_xyzzy()`), the compatibility syscall stub (`compat_sys_xyzzy()`), and/or other kernel code.

At least on 64-bit x86, it will be a hard requirement from v4.17 onwards to not call system call functions in the kernel. It uses a different calling convention for system calls where `struct pt_regs` is decoded on-the-fly in a syscall wrapper which then hands processing over to the actual syscall function. This means that only those parameters which are actually needed for a specific syscall are passed on during syscall entry, instead of filling in six CPU registers with random user space content all the time (which may cause serious trouble down the call chain).

Moreover, rules on how data may be accessed may differ between kernel data and user data. This is another reason why calling `sys_xyzzy()` is generally a bad idea.

Exceptions to this rule are only allowed in architecture-specific overrides, architecture-specific compatibility wrappers, or other code in `arch/`.

* References and Sources

- LWN article from Michael Kerrisk on use of flags argument in system calls: <https://lwn.net/Articles/585415/>
- LWN article from Michael Kerrisk on how to handle unknown flags in a system call: <https://lwn.net/Articles/588444/>
- LWN article from Jake Edge describing constraints on 64-bit system call arguments: <https://lwn.net/Articles/311630/>
- Pair of LWN articles from David Drysdale that describe the system call implementation paths in detail for v3.14:
 - <https://lwn.net/Articles/604287/>
 - <https://lwn.net/Articles/604515/>
- Architecture-specific requirements for system calls are discussed in the `syscall(2)` man-page: <http://man7.org/linux/man-pages/man2/syscall.2.html#NOTES>
- Collated emails from Linus Torvalds discussing the problems with `ioctl()`: <https://yarchive.net/comp/linux/ioctl.html>
- "How to not invent kernel interfaces", Arnd Bergmann, <https://www.ukuug.org/events/linux2007/2007/papers/Bergmann.pdf>
- LWN article from Michael Kerrisk on avoiding new uses of `CAP_SYS_ADMIN`: <https://lwn.net/Articles/486306/>
- Recommendation from Andrew Morton that all related information for a new system call should come in the same email thread: <https://lore.kernel.org/r/20140724144747.3041b208832bbdf9fbce5d96@linux-foundation.org>
- Recommendation from Michael Kerrisk that a new system call should come with a man page: <https://lore.kernel.org/r/CAKgNAkgMA39AfoSoA5Pe1r9N+ZzfYQNvNPvcRN7tOvRb8+v06Q@mail.gmail.com>
- Suggestion from Thomas Gleixner that x86 wire-up should be in a separate commit: <https://lore.kernel.org/r/alpine.DEB.2.11.1411191249560.3909@nanos>
- Suggestion from Greg Kroah-Hartman that it's good for new system calls to come with a man-page & selftest: <https://lore.kernel.org/r/20140320025530.GA25469@kroah.com>
- Discussion from Michael Kerrisk of new system call vs. `prctl(2)` extension: <https://lore.kernel.org/r/CAHO5Pa3F2MjfTtfNxa8LbnkeeU8=YJ+9tDqxZpw7Gz59E-4AUg@mail.gmail.com>
- Suggestion from Ingo Molnar that system calls that involve multiple arguments should encapsulate those arguments in a struct, which includes a size field for future extensibility: <https://lore.kernel.org/r/20150730083831.GA22182@gmail.com>
- Numbering oddities arising from (re-)use of `O_*` numbering space flags:
 - commit 75069f2b5bfb ("vfs: renumber `FMODE_NONOTIFY` and add to uniqueness check")
 - commit 12ed2e36c98a ("fanotify: `FMODE_NONOTIFY` and `__O_SYNC` in sparc conflict")
 - commit bb458c644a59 ("Safer ABI for `O_TMPFILE`")

- Discussion from Matthew Wilcox about restrictions on 64-bit arguments: <https://lore.kernel.org/r/20081212152929.GM26095@parisc-linux.org>
- Recommendation from Greg Kroah-Hartman that unknown flags should be policed: <https://lore.kernel.org/r/20140717193330.GB4703@kroah.com>
- Recommendation from Linus Torvalds that x32 system calls should prefer compatibility with 64-bit versions rather than 32-bit versions: <https://lore.kernel.org/r/CA+55aFxfmwfB7jbbrXxa=K7VBYPfAvmu3XOkGrLbB1UFjX1+Ew@mail.gmail.com>

* Why the “volatile” type class should not be used

C programmers have often taken volatile to mean that the variable could be changed outside of the current thread of execution; as a result, they are sometimes tempted to use it in kernel code when shared data structures are being used. In other words, they have been known to treat volatile types as a sort of easy atomic variable, which they are not. The use of volatile in kernel code is almost never correct; this document describes why.

The key point to understand with regard to volatile is that its purpose is to suppress optimization, which is almost never what one really wants to do. In the kernel, one must protect shared data structures against unwanted concurrent access, which is very much a different task. The process of protecting against unwanted concurrency will also avoid almost all optimization-related problems in a more efficient way.

Like volatile, the kernel primitives which make concurrent access to data safe (spinlocks, mutexes, memory barriers, etc.) are designed to prevent unwanted optimization. If they are being used properly, there will be no need to use volatile as well. If volatile is still necessary, there is almost certainly a bug in the code somewhere. In properly-written kernel code, volatile can only serve to slow things down.

Consider a typical block of kernel code:

```
spin_lock(&the_lock);
do_something_on(&shared_data);
do_something_else_with(&shared_data);
spin_unlock(&the_lock);
```

If all the code follows the locking rules, the value of shared_data cannot change unexpectedly while the_lock is held. Any other code which might want to play with that data will be waiting on the lock. The spinlock primitives act as memory barriers - they are explicitly written to do so - meaning that data accesses will not be optimized across them. So the compiler might think it knows what will be in shared_data, but the spin_lock() call, since it acts as a memory barrier, will force it to forget anything it knows. There will be no optimization problems with accesses to that data.

If shared_data were declared volatile, the locking would still be necessary. But the compiler would also be prevented from optimizing access to shared_data within the critical section, when we know that nobody else can be working with it. While the lock is held, shared_data is not volatile. When dealing with shared data, proper locking makes volatile unnecessary - and potentially harmful.

The volatile storage class was originally meant for memory-mapped I/O registers. Within the kernel, register accesses, too, should be protected by locks, but one also does not want the compiler “optimizing” register accesses within a critical section. But, within the kernel, I/O

memory accesses are always done through accessor functions; accessing I/O memory directly through pointers is frowned upon and does not work on all architectures. Those accessors are written to prevent unwanted optimization, so, once again, `volatile` is unnecessary.

Another situation where one might be tempted to use `volatile` is when the processor is busy-waiting on the value of a variable. The right way to perform a busy wait is:

```
while (my_variable != what_i_want)
    cpu_relax();
```

The `cpu_relax()` call can lower CPU power consumption or yield to a hyperthreaded twin processor; it also happens to serve as a compiler barrier, so, once again, `volatile` is unnecessary. Of course, busy-waiting is generally an anti-social act to begin with.

There are still a few rare situations where `volatile` makes sense in the kernel:

- The above-mentioned accessor functions might use `volatile` on architectures where direct I/O memory access does work. Essentially, each accessor call becomes a little critical section on its own and ensures that the access happens as expected by the programmer.
- Inline assembly code which changes memory, but which has no other visible side effects, risks being deleted by GCC. Adding the `volatile` keyword to asm statements will prevent this removal.
- The `jiffies` variable is special in that it can have a different value every time it is referenced, but it can be read without any special locking. So `jiffies` can be `volatile`, but the addition of other variables of this type is strongly frowned upon. `Jiffies` is considered to be a “stupid legacy” issue (Linus's words) in this regard; fixing it would be more trouble than it is worth.
- Pointers to data structures in coherent memory which might be modified by I/O devices can, sometimes, legitimately be `volatile`. A ring buffer used by a network adapter, where that adapter changes pointers to indicate which descriptors have been processed, is an example of this type of situation.

For most code, none of the above justifications for `volatile` apply. As a result, the use of `volatile` is likely to be seen as a bug and will bring additional scrutiny to the code. Developers who are tempted to use `volatile` should take a step back and think about what they are truly trying to accomplish.

Patches to remove `volatile` variables are generally welcome - as long as they come with a justification which shows that the concurrency issues have been properly thought through.

* References

[1] <https://lwn.net/Articles/233481/>

[2] <https://lwn.net/Articles/233482/>

* Credits

Original impetus and research by Randy Dunlap

Written by Jonathan Corbet

Improvements via comments from Satyam Sharma, Johannes Stezenbach, Jesper Juhl, Heikki Orsila, H. Peter Anvin, Philipp Hahn, and Stefan Richter.

* (How to avoid) Botching up ioctls

From: <https://blog.ffwll.ch/2013/11/botching-up-ioctls.html>

By: Daniel Vetter, Copyright © 2013 Intel Corporation

One clear insight kernel graphics hackers gained in the past few years is that trying to come up with a unified interface to manage the execution units and memory on completely different GPUs is a futile effort. So nowadays every driver has its own set of ioctls to allocate memory and submit work to the GPU. Which is nice, since there's no more insanity in the form of fake-generic, but actually only used once interfaces. But the clear downside is that there's much more potential to screw things up.

To avoid repeating all the same mistakes again I've written up some of the lessons learned while botching the job for the drm/i915 driver. Most of these only cover technicalities and not the big-picture issues like what the command submission ioctl exactly should look like. Learning these lessons is probably something every GPU driver has to do on its own.

* Prerequisites

First the prerequisites. Without these you have already failed, because you will need to add a 32-bit compat layer:

- Only use fixed sized integers. To avoid conflicts with typedefs in userspace the kernel has special types like `__u32`, `__s64`. Use them.
- Align everything to the natural size and use explicit padding. 32-bit platforms don't necessarily align 64-bit values to 64-bit boundaries, but 64-bit platforms do. So we always need padding to the natural size to get this right.
- Pad the entire struct to a multiple of 64-bits if the structure contains 64-bit types - the structure size will otherwise differ on 32-bit versus 64-bit. Having a different structure size hurts when passing arrays of structures to the kernel, or if the kernel checks the structure size, which e.g. the drm core does.
- Pointers are `__u64`, cast from/to a `uintptr_t` on the userspace side and from/to a `void __user *` in the kernel. Try really hard not to delay this conversion or worse, fiddle the raw `__u64` through your code since that diminishes the checking tools like sparse can provide. The macro `u64_to_user_ptr` can be used in the kernel to avoid warnings about integers and pointers of different sizes.

* Basics

With the joys of writing a compat layer avoided we can take a look at the basic fumbles. Neglecting these will make backward and forward compatibility a real pain. And since getting things wrong on the first attempt is guaranteed you will have a second iteration or at least an extension for any given interface.

- Have a clear way for userspace to figure out whether your new ioctl or ioctl extension is supported on a given kernel. If you can't rely on old kernels rejecting the new flags/modes or ioctls (since doing that was botched in the past) then you need a driver feature flag or revision number somewhere.
- Have a plan for extending ioctls with new flags or new fields at the end of the structure. The drm core checks the passed-in size for each ioctl call and zero-extends any mismatches between kernel and userspace. That helps, but isn't a complete solution since newer userspace on older kernels won't notice that the newly added fields at the end get ignored. So this still needs a new driver feature flags.
- Check all unused fields and flags and all the padding for whether it's 0, and reject the ioctl if that's not the case. Otherwise your nice plan for future extensions is going right down the gutters since someone will submit an ioctl struct with random stack garbage in the yet unused parts. Which then bakes in the ABI that those fields can never be used for anything else but garbage. This is also the reason why you must explicitly pad all structures, even if you never use them in an array - the padding the compiler might insert could contain garbage.
- Have simple testcases for all of the above.

* Fun with Error Paths

Nowadays we don't have any excuse left any more for drm drivers being neat little root exploits. This means we both need full input validation and solid error handling paths - GPUs will die eventually in the oddmost corner cases anyway:

- The ioctl must check for array overflows. Also it needs to check for over/underflows and clamping issues of integer values in general. The usual example is sprite positioning values fed directly into the hardware with the hardware just having 12 bits or so. Works nicely until some odd display server doesn't bother with clamping itself and the cursor wraps around the screen.
- Have simple testcases for every input validation failure case in your ioctl. Check that the error code matches your expectations. And finally make sure that you only test for one single error path in each subtest by submitting otherwise perfectly valid data. Without this an earlier check might reject the ioctl already and shadow the codepath you actually want to test, hiding bugs and regressions.
- Make all your ioctls restartable. First X really loves signals and second this will allow you to test 90% of all error handling paths by just interrupting your main test suite constantly with signals. Thanks to X's love for signal you'll get an excellent base coverage of all your error paths pretty much for free for graphics drivers. Also, be consistent with how you handle ioctl restarting - e.g. drm has a tiny `drmIoctl` helper in its userspace library. The i915 driver botched this with the `set_tiling` ioctl, now we're stuck forever with some arcane semantics in both the kernel and userspace.

- If you can't make a given codepath restartable make a stuck task at least killable. GPUs just die and your users won't like you more if you hang their entire box (by means of an unkillable X process). If the state recovery is still too tricky have a timeout or hangcheck safety net as a last-ditch effort in case the hardware has gone bananas.
- Have testcases for the really tricky corner cases in your error recovery code - it's way too easy to create a deadlock between your hangcheck code and waiters.

* Time, Waiting and Missing it

GPUs do most everything asynchronously, so we have a need to time operations and wait for outstanding ones. This is really tricky business; at the moment none of the ioctls supported by the drm/i915 get this fully right, which means there's still tons more lessons to learn here.

- Use `CLOCK_MONOTONIC` as your reference time, always. It's what also, drm and v4l use by default nowadays. But let userspace know which timestamps are derived from different clock domains like your main system clock (provided by the kernel) or some independent hardware counter somewhere else. Clocks will mismatch if you look close enough, but if performance measuring tools have this information they can at least compensate. If your userspace can get at the raw values of some clocks (e.g. through in-command-stream performance counter sampling instructions) consider exposing those also.
- Use `__s64` seconds plus `__u64` nanoseconds to specify time. It's not the most convenient time specification, but it's mostly the standard.
- Check that input time values are normalized and reject them if not. Note that the kernel native struct `ktime` has a signed integer for both seconds and nanoseconds, so beware here.
- For timeouts, use absolute times. If you're a good fellow and made your ioctl restartable relative timeouts tend to be too coarse and can indefinitely extend your wait time due to rounding on each restart. Especially if your reference clock is something really slow like the display frame counter. With a spec lawyer hat on this isn't a bug since timeouts can always be extended - but users will surely hate you if their neat animations starts to stutter due to this.
- Consider ditching any synchronous wait ioctls with timeouts and just deliver an asynchronous event on a pollable file descriptor. It fits much better into event driven applications' main loop.
- Have testcases for corner-cases, especially whether the return values for already-completed events, successful waits and timed-out waits are all sane and suiting to your needs.

* Leaking Resources, Not

A full-blown drm driver essentially implements a little OS, but specialized to the given GPU platforms. This means a driver needs to expose tons of handles for different objects and other resources to userspace. Doing that right entails its own little set of pitfalls:

- Always attach the lifetime of your dynamically created resources to the lifetime of a file descriptor. Consider using a 1:1 mapping if your resource needs to be shared across processes - fd-passing over unix domain sockets also simplifies lifetime management for userspace.

- Always have `O_CLOEXEC` support.
- Ensure that you have sufficient insulation between different clients. By default pick a private per-fd namespace which forces any sharing to be done explicitly. Only go with a more global per-device namespace if the objects are truly device-unique. One counterexample in the drm modeset interfaces is that the per-device modeset objects like connectors share a namespace with framebuffer objects, which mostly are not shared at all. A separate namespace, private by default, for framebuffers would have been more suitable.
- Think about uniqueness requirements for userspace handles. E.g. for most drm drivers it's a userspace bug to submit the same object twice in the same command submission ioctl. But then if objects are shareable userspace needs to know whether it has seen an imported object from a different process already or not. I haven't tried this myself yet due to lack of a new class of objects, but consider using inode numbers on your shared file descriptors as unique identifiers - it's how real files are told apart, too. Unfortunately this requires a full-blown virtual filesystem in the kernel.

*** Last, but not Least**

Not every problem needs a new ioctl:

- Think hard whether you really want a driver-private interface. Of course it's much quicker to push a driver-private interface than engaging in lengthy discussions for a more generic solution. And occasionally doing a private interface to spearhead a new concept is what's required. But in the end, once the generic interface comes around you'll end up maintaining two interfaces. Indefinitely.
- Consider other interfaces than ioctls. A sysfs attribute is much better for per-device settings, or for child objects with fairly static lifetimes (like output connectors in drm with all the detection override attributes). Or maybe only your testsuite needs this interface, and then debugfs with its disclaimer of not having a stable ABI would be better.

Finally, the name of the game is to get it right on the first attempt, since if your driver proves popular and your hardware platforms long-lived then you'll be stuck with a given ioctl essentially forever. You can try to deprecate horrible ioctls on newer iterations of your hardware, but generally it takes years to accomplish this. And then again years until the last user able to complain about regressions disappears, too.

POLICY GUIDES AND DEVELOPER STATEMENTS

These are the rules that we try to live by in the kernel community (and beyond).

*** Linux kernel licensing rules**

The Linux Kernel is provided under the terms of the GNU General Public License version 2 only (GPL-2.0), as provided in `LICENSES/preferred/GPL-2.0`, with an explicit syscall exception described in `LICENSES/exceptions/Linux-syscall-note`, as described in the `COPYING` file.

This documentation file provides a description of how each source file should be annotated to make its license clear and unambiguous. It doesn't replace the Kernel's license.

The license described in the `COPYING` file applies to the kernel source as a whole, though individual source files can have a different license which is required to be compatible with the GPL-2.0:

GPL-1.0+	:	GNU General Public License v1.0 or later
GPL-2.0+	:	GNU General Public License v2.0 or later
LGPL-2.0	:	GNU Library General Public License v2 only
LGPL-2.0+	:	GNU Library General Public License v2 or later
LGPL-2.1	:	GNU Lesser General Public License v2.1 only
LGPL-2.1+	:	GNU Lesser General Public License v2.1 or later

Aside from that, individual files can be provided under a dual license, e.g. one of the compatible GPL variants and alternatively under a permissive license like BSD, MIT etc.

The User-space API (UAPI) header files, which describe the interface of user-space programs to the kernel are a special case. According to the note in the kernel `COPYING` file, the syscall interface is a clear boundary, which does not extend the GPL requirements to any software which uses it to communicate with the kernel. Because the UAPI headers must be includable into any source files which create an executable running on the Linux kernel, the exception must be documented by a special license expression.

The common way of expressing the license of a source file is to add the matching boilerplate text into the top comment of the file. Due to formatting, typos etc. these "boilerplates" are hard to validate for tools which are used in the context of license compliance.

An alternative to boilerplate text is the use of Software Package Data Exchange (SPDX) license identifiers in each source file. SPDX license identifiers are machine parsable and precise short-hands for the license under which the content of the file is contributed. SPDX license identifiers are managed by the SPDX Workgroup at the Linux Foundation and have been agreed on by

partners throughout the industry, tool vendors, and legal teams. For further information see <https://spdx.org/>

The Linux kernel requires the precise SPDX identifier in all source files. The valid identifiers used in the kernel are explained in the section *License identifiers* and have been retrieved from the official SPDX license list at <https://spdx.org/licenses/> along with the license texts.

* License identifier syntax

1. Placement:

The SPDX license identifier in kernel files shall be added at the first possible line in a file which can contain a comment. For the majority of files this is the first line, except for scripts which require the '#!PATH_TO_INTERPRETER' in the first line. For those scripts the SPDX identifier goes into the second line.

2. Style:

The SPDX license identifier is added in form of a comment. The comment style depends on the file type:

```
C source: // SPDX-License-Identifier: <SPDX License Expression>
C header: /* SPDX-License-Identifier: <SPDX License Expression> */
ASM:      /* SPDX-License-Identifier: <SPDX License Expression> */
scripts:  # SPDX-License-Identifier: <SPDX License Expression>
.rst:     .. SPDX-License-Identifier: <SPDX License Expression>
.dts{i}:  // SPDX-License-Identifier: <SPDX License Expression>
```

If a specific tool cannot handle the standard comment style, then the appropriate comment mechanism which the tool accepts shall be used. This is the reason for having the `"/* */"` style comment in C header files. There was build breakage observed with generated `.lds` files where `'ld'` failed to parse the C++ comment. This has been fixed by now, but there are still older assembler tools which cannot handle C++ style comments.

3. Syntax:

A `<SPDX License Expression>` is either an SPDX short form license identifier found on the SPDX License List, or the combination of two SPDX short form license identifiers separated by `"WITH"` when a license exception applies. When multiple licenses apply, an expression consists of keywords `"AND"`, `"OR"` separating sub-expressions and surrounded by `"(", ")"`.

License identifiers for licenses like [L]GPL with the 'or later' option are constructed by using a `"+"` for indicating the 'or later' option.:

```
// SPDX-License-Identifier: GPL-2.0+
// SPDX-License-Identifier: LGPL-2.1+
```

WITH should be used when there is a modifier to a license needed. For example, the linux kernel UAPI files use the expression:

```
// SPDX-License-Identifier: GPL-2.0 WITH Linux-syscall-note
// SPDX-License-Identifier: GPL-2.0+ WITH Linux-syscall-note
```

Other examples using WITH exceptions found in the kernel are:

```
// SPDX-License-Identifier: GPL-2.0 WITH mif-exception
// SPDX-License-Identifier: GPL-2.0+ WITH GCC-exception-2.0
```

Exceptions can only be used with particular License identifiers. The valid License identifiers are listed in the tags of the exception text file. For details see the point [Exceptions](#) in the chapter [License identifiers](#).

OR should be used if the file is dual licensed and only one license is to be selected. For example, some dtsti files are available under dual licenses:

```
// SPDX-License-Identifier: GPL-2.0 OR BSD-3-Clause
```

Examples from the kernel for license expressions in dual licensed files:

```
// SPDX-License-Identifier: GPL-2.0 OR MIT
// SPDX-License-Identifier: GPL-2.0 OR BSD-2-Clause
// SPDX-License-Identifier: GPL-2.0 OR Apache-2.0
// SPDX-License-Identifier: GPL-2.0 OR MPL-1.1
// SPDX-License-Identifier: (GPL-2.0 WITH Linux-syscall-note) OR MIT
// SPDX-License-Identifier: GPL-1.0+ OR BSD-3-Clause OR OpenSSL
```

AND should be used if the file has multiple licenses whose terms all apply to use the file. For example, if code is inherited from another project and permission has been given to put it in the kernel, but the original license terms need to remain in effect:

```
// SPDX-License-Identifier: (GPL-2.0 WITH Linux-syscall-note) AND MIT
```

Another other example where both sets of license terms need to be adhered to is:

```
// SPDX-License-Identifier: GPL-1.0+ AND LGPL-2.1+
```

* License identifiers

The licenses currently used, as well as the licenses for code added to the kernel, can be broken down into:

1. Preferred licenses:

Whenever possible these licenses should be used as they are known to be fully compatible and widely used. These licenses are available from the directory:

LICENSES/preferred/

in the kernel source tree.

The files in this directory contain the full license text and *Metatags*. The file names are identical to the SPDX license identifier which shall be used for the license in source files.

Examples:

LICENSES/preferred/GPL-2.0

Contains the GPL version 2 license text and the required metatags:

LICENSES/preferred/MIT

Contains the MIT license text and the required metatags

Metatags:

The following meta tags must be available in a license file:

- Valid-License-Identifier:

One or more lines which declare which License Identifiers are valid inside the project to reference this particular license text. Usually this is a single valid identifier, but e.g. for licenses with the 'or later' options two identifiers are valid.

- SPDX-URL:

The URL of the SPDX page which contains additional information related to the license.

- Usage-Guidance:

Freeform text for usage advice. The text must include correct examples for the SPDX license identifiers as they should be put into source files according to the *License identifier syntax* guidelines.

- License-Text:

All text after this tag is treated as the original license text

File format examples:

```
Valid-License-Identifier: GPL-2.0
Valid-License-Identifier: GPL-2.0+
SPDX-URL: https://spdx.org/licenses/GPL-2.0.html
Usage-Guide:
  To use this license in source code, put one of the following SPDX
  tag/value pairs into a comment according to the placement
  guidelines in the licensing rules documentation.
  For 'GNU General Public License (GPL) version 2 only' use:
    SPDX-License-Identifier: GPL-2.0
  For 'GNU General Public License (GPL) version 2 or any later version'
  ↪ use:
    SPDX-License-Identifier: GPL-2.0+
License-Text:
  Full license text
```

```
SPDX-License-Identifier: MIT
SPDX-URL: https://spdx.org/licenses/MIT.html
Usage-Guide:
    To use this license in source code, put the following SPDX
    tag/value pair into a comment according to the placement
    guidelines in the licensing rules documentation.
    SPDX-License-Identifier: MIT
License-Text:
    Full license text
```

2. Deprecated licenses:

These licenses should only be used for existing code or for importing code from a different project. These licenses are available from the directory:

```
LICENSES/deprecated/
```

in the kernel source tree.

The files in this directory contain the full license text and *Metatags*. The file names are identical to the SPDX license identifier which shall be used for the license in source files.

Examples:

```
LICENSES/deprecated/ISC
```

Contains the Internet Systems Consortium license text and the required metatags:

```
LICENSES/deprecated/GPL-1.0
```

Contains the GPL version 1 license text and the required metatags.

Metatags:

The metatag requirements for 'other' licenses are identical to the requirements of the *Preferred licenses*.

File format example:

```
Valid-License-Identifier: ISC
SPDX-URL: https://spdx.org/licenses/ISC.html
Usage-Guide:
    Usage of this license in the kernel for new code is discouraged
    and it should solely be used for importing code from an already
    existing project.
    To use this license in source code, put the following SPDX
    tag/value pair into a comment according to the placement
    guidelines in the licensing rules documentation.
    SPDX-License-Identifier: ISC
```

```
License-Text:
  Full license text
```

3. Dual Licensing Only

These licenses should only be used to dual license code with another license in addition to a preferred license. These licenses are available from the directory:

```
LICENSES/dual/
```

in the kernel source tree.

The files in this directory contain the full license text and *Metatags*. The file names are identical to the SPDX license identifier which shall be used for the license in source files.

Examples:

```
LICENSES/dual/MPL-1.1
```

Contains the Mozilla Public License version 1.1 license text and the required metatags:

```
LICENSES/dual/Apache-2.0
```

Contains the Apache License version 2.0 license text and the required metatags.

Metatags:

The metatag requirements for 'other' licenses are identical to the requirements of the *Preferred licenses*.

File format example:

```
Valid-License-Identifier: MPL-1.1
SPDX-URL: https://spdx.org/licenses/MPL-1.1.html
Usage-Guide:
  Do NOT use. The MPL-1.1 is not GPL2 compatible. It may only be used for
  dual-licensed files where the other license is GPL2 compatible.
  If you end up using this it MUST be used together with a GPL2 compatible
  license using "OR".
  To use the Mozilla Public License version 1.1 put the following SPDX
  tag/value pair into a comment according to the placement guidelines in
  the licensing rules documentation:
SPDX-License-Identifier: MPL-1.1
License-Text:
  Full license text
```

4. Exceptions:

Some licenses can be amended with exceptions which grant certain rights which the original license does not. These exceptions are available from the directory:

```
LICENSES/exceptions/
```

in the kernel source tree. The files in this directory contain the full exception text and the required *Exception Metatags*.

Examples:

```
LICENSES/exceptions/Linux-syscall-note
```

Contains the Linux syscall exception as documented in the COPYING file of the Linux kernel, which is used for UAPI header files. e.g. `/* SPDX-License-Identifier: GPL-2.0 WITH Linux-syscall-note */`:

```
LICENSES/exceptions/GCC-exception-2.0
```

Contains the GCC 'linking exception' which allows to link any binary independent of its license against the compiled version of a file marked with this exception. This is required for creating runnable executables from source code which is not compatible with the GPL.

Exception Metatags:

The following meta tags must be available in an exception file:

- **SPDX-Exception-Identifier:**
One exception identifier which can be used with SPDX license identifiers.
- **SPDX-URL:**
The URL of the SPDX page which contains additional information related to the exception.
- **SPDX-Licenses:**
A comma separated list of SPDX license identifiers for which the exception can be used.
- **Usage-Guidance:**
Freeform text for usage advice. The text must be followed by correct examples for the SPDX license identifiers as they should be put into source files according to the *License identifier syntax* guidelines.
- **Exception-Text:**
All text after this tag is treated as the original exception text

File format examples:

```
SPDX-Exception-Identifier: Linux-syscall-note
SPDX-URL: https://spdx.org/licenses/Linux-syscall-note.html
SPDX-Licenses: GPL-2.0, GPL-2.0+, GPL-1.0+, LGPL-2.0, LGPL-2.0+, LGPL-2.1, ↵
↳LGPL-2.1+
Usage-Guidance:
  This exception is used together with one of the above SPDX-Licenses
  to mark user-space API (uapi) header files so they can be included
```

```
into non GPL compliant user-space application code.  
To use this exception add it with the keyword WITH to one of the  
identifiers in the SPDX-Licenses tag:  
    SPDX-License-Identifier: <SPDX-License> WITH Linux-syscall-note  
Exception-Text:  
    Full exception text
```

```
SPDX-Exception-Identifier: GCC-exception-2.0  
SPDX-URL: https://spdx.org/licenses/GCC-exception-2.0.html  
SPDX-Licenses: GPL-2.0, GPL-2.0+  
Usage-Guidance:  
    The "GCC Runtime Library exception 2.0" is used together with one  
    of the above SPDX-Licenses for code imported from the GCC runtime  
    library.  
    To use this exception add it with the keyword WITH to one of the  
    identifiers in the SPDX-Licenses tag:  
        SPDX-License-Identifier: <SPDX-License> WITH GCC-exception-2.0  
Exception-Text:  
    Full exception text
```

All SPDX license identifiers and exceptions must have a corresponding file in the `LICENSES` subdirectories. This is required to allow tool verification (e.g. `checkpatch.pl`) and to have the licenses ready to read and extract right from the source, which is recommended by various FOSS organizations, e.g. the [FSFE REUSE initiative](#).

*** MODULE_LICENSE**

Loadable kernel modules also require a `MODULE_LICENSE()` tag. This tag is neither a replacement for proper source code license information (`SPDX-License-Identifier`) nor in any way relevant for expressing or determining the exact license under which the source code of the module is provided.

The sole purpose of this tag is to provide sufficient information whether the module is free software or proprietary for the kernel module loader and for user space tools.

The valid license strings for `MODULE_LICENSE()` are:

"GPL"	Module is licensed under GPL version 2. This does not express any distinction between GPL-2.0-only or GPL-2.0-or-later. The exact license information can only be determined via the license information in the corresponding source files.
"GPL v2"	Same as "GPL". It exists for historic reasons.
"GPL and additional rights"	Historical variant of expressing that the module source is dual licensed under a GPL v2 variant and MIT license. Please do not use in new code.
"Dual MIT/GPL"	The correct way of expressing that the module is dual licensed under a GPL v2 variant or MIT license choice.
"Dual BSD/GPL"	The module is dual licensed under a GPL v2 variant or BSD license choice. The exact variant of the BSD license can only be determined via the license information in the corresponding source files.
"Dual MPL/GPL"	The module is dual licensed under a GPL v2 variant or Mozilla Public License (MPL) choice. The exact variant of the MPL license can only be determined via the license information in the corresponding source files.
"Proprietary"	The module is under a proprietary license. This string is solely for proprietary third party modules and cannot be used for modules which have their source code in the kernel tree. Modules tagged that way are tainting the kernel with the 'P' flag when loaded and the kernel module loader refuses to link such modules against symbols which are exported with EXPORT_SYMBOL_GPL().

* Contributor Covenant Code of Conduct

* Our Pledge

In the interest of fostering an open and welcoming environment, we as contributors and maintainers pledge to making participation in our project and our community a harassment-free experience for everyone, regardless of age, body size, disability, ethnicity, sex characteristics, gender identity and expression, level of experience, education, socio-economic status, nationality, personal appearance, race, religion, or sexual identity and orientation.

* Our Standards

Examples of behavior that contributes to creating a positive environment include:

- Using welcoming and inclusive language
- Being respectful of differing viewpoints and experiences
- Gracefully accepting constructive criticism
- Focusing on what is best for the community
- Showing empathy towards other community members

Examples of unacceptable behavior by participants include:

- The use of sexualized language or imagery and unwelcome sexual attention or advances
- Trolling, insulting/derogatory comments, and personal or political attacks
- Public or private harassment
- Publishing others' private information, such as a physical or electronic address, without explicit permission
- Other conduct which could reasonably be considered inappropriate in a professional setting

* Our Responsibilities

Maintainers are responsible for clarifying the standards of acceptable behavior and are expected to take appropriate and fair corrective action in response to any instances of unacceptable behavior.

Maintainers have the right and responsibility to remove, edit, or reject comments, commits, code, wiki edits, issues, and other contributions that are not aligned to this Code of Conduct, or to ban temporarily or permanently any contributor for other behaviors that they deem inappropriate, threatening, offensive, or harmful.

* Scope

This Code of Conduct applies both within project spaces and in public spaces when an individual is representing the project or its community. Examples of representing a project or community include using an official project e-mail address, posting via an official social media account, or acting as an appointed representative at an online or offline event. Representation of a project may be further defined and clarified by project maintainers.

* Enforcement

Instances of abusive, harassing, or otherwise unacceptable behavior may be reported by contacting the Code of Conduct Committee at <conduct@kernel.org>. All complaints will be reviewed and investigated and will result in a response that is deemed necessary and appropriate to the circumstances. The Code of Conduct Committee is obligated to maintain confidentiality with regard to the reporter of an incident. Further details of specific enforcement policies may be posted separately.

* Attribution

This Code of Conduct is adapted from the Contributor Covenant, version 1.4, available at <https://www.contributor-covenant.org/version/1/4/code-of-conduct.html>

* Interpretation

See the *Linux Kernel Contributor Covenant Code of Conduct Interpretation* document for how the Linux kernel community will be interpreting this document.

* Linux Kernel Contributor Covenant Code of Conduct Interpretation

The *Contributor Covenant Code of Conduct* is a general document meant to provide a set of rules for almost any open source community. Every open-source community is unique and the Linux kernel is no exception. Because of this, this document describes how we in the Linux kernel community will interpret it. We also do not expect this interpretation to be static over time, and will adjust it as needed.

The Linux kernel development effort is a very personal process compared to “traditional” ways of developing software. Your contributions and ideas behind them will be carefully reviewed, often resulting in critique and criticism. The review will almost always require improvements before the material can be included in the kernel. Know that this happens because everyone involved wants to see the best possible solution for the overall success of Linux. This development process has been proven to create the most robust operating system kernel ever, and we do not want to do anything to cause the quality of submission and eventual result to ever decrease.

* Maintainers

The Code of Conduct uses the term “maintainers” numerous times. In the kernel community, a “maintainer” is anyone who is responsible for a subsystem, driver, or file, and is listed in the MAINTAINERS file in the kernel source tree.

* Responsibilities

The Code of Conduct mentions rights and responsibilities for maintainers, and this needs some further clarifications.

First and foremost, it is a reasonable expectation to have maintainers lead by example.

That being said, our community is vast and broad, and there is no new requirement for maintainers to unilaterally handle how other people behave in the parts of the community where they are active. That responsibility is upon all of us, and ultimately the Code of Conduct documents final escalation paths in case of unresolved concerns regarding conduct issues.

Maintainers should be willing to help when problems occur, and work with others in the community when needed. Do not be afraid to reach out to the Technical Advisory Board (TAB) or other maintainers if you're uncertain how to handle situations that come up. It will not be considered a violation report unless you want it to be. If you are uncertain about approaching the TAB or any other maintainers, please reach out to our conflict mediator, Joanna Lee <jlee@linuxfoundation.org>.

In the end, "be kind to each other" is really what the end goal is for everybody. We know everyone is human and we all fail at times, but the primary goal for all of us should be to work toward amicable resolutions of problems. Enforcement of the code of conduct will only be a last resort option.

Our goal of creating a robust and technically advanced operating system and the technical complexity involved naturally require expertise and decision-making.

The required expertise varies depending on the area of contribution. It is determined mainly by context and technical complexity and only secondary by the expectations of contributors and maintainers.

Both the expertise expectations and decision-making are subject to discussion, but at the very end there is a basic necessity to be able to make decisions in order to make progress. This prerogative is in the hands of maintainers and project's leadership and is expected to be used in good faith.

As a consequence, setting expertise expectations, making decisions and rejecting unsuitable contributions are not viewed as a violation of the Code of Conduct.

While maintainers are in general welcoming to newcomers, their capacity of helping contributors overcome the entry hurdles is limited, so they have to set priorities. This, also, is not to be seen as a violation of the Code of Conduct. The kernel community is aware of that and provides entry level programs in various forms like kernelnewbies.org.

* Scope

The Linux kernel community primarily interacts on a set of public email lists distributed around a number of different servers controlled by a number of different companies or individuals. All of these lists are defined in the MAINTAINERS file in the kernel source tree. Any emails sent to those mailing lists are considered covered by the Code of Conduct.

Developers who use the kernel.org bugzilla, and other subsystem bugzilla or bug tracking tools should follow the guidelines of the Code of Conduct. The Linux kernel community does not have an "official" project email address, or "official" social media address. Any activity performed using a kernel.org email account must follow the Code of Conduct as published for kernel.org,

just as any individual using a corporate email account must follow the specific rules of that corporation.

The Code of Conduct does not prohibit continuing to include names, email addresses, and associated comments in mailing list messages, kernel change log messages, or code comments.

Interaction in other forums is covered by whatever rules apply to said forums and is in general not covered by the Code of Conduct. Exceptions may be considered for extreme circumstances.

Contributions submitted for the kernel should use appropriate language. Content that already exists predating the Code of Conduct will not be addressed now as a violation. Inappropriate language can be seen as a bug, though; such bugs will be fixed more quickly if any interested parties submit patches to that effect. Expressions that are currently part of the user/kernel API, or reflect terminology used in published standards or specifications, are not considered bugs.

*** Enforcement**

The address listed in the Code of Conduct goes to the Code of Conduct Committee. The exact members receiving these emails at any given time are listed at <https://kernel.org/code-of-conduct.html>. Members can not access reports made before they joined or after they have left the committee.

The Code of Conduct Committee consists of volunteer community members appointed by the TAB, as well as a professional mediator acting as a neutral third party. The processes the Code of Conduct committee will use to address reports is varied and will depend on the individual circumstance, however, this file serves as documentation for the general process used.

Any member of the committee, including the mediator, can be contacted directly if a reporter does not wish to include the full committee in a complaint or concern.

The Code of Conduct Committee reviews the cases according to the processes (see above) and consults with the TAB as needed and appropriate, for instance to request and receive information about the kernel community.

Any decisions regarding enforcement recommendations will be brought to the TAB for implementation of enforcement with the relevant maintainers if needed. A decision by the Code of Conduct Committee can be overturned by the TAB by a two-thirds vote.

At quarterly intervals, the Code of Conduct Committee and TAB will provide a report summarizing the anonymised reports that the Code of Conduct committee has received and their status, as well details of any overridden decisions including complete and identifiable voting details.

Because how we interpret and enforce the Code of Conduct will evolve over time, this document will be updated when necessary to reflect any changes.

* Linux Kernel Contribution Maturity Model

* Background

As a part of the 2021 Linux Kernel Maintainers' Summit, there was a [discussion](#) about the challenges in recruiting kernel maintainers as well as maintainer succession. Some of the conclusions from that discussion included that companies which are a part of the Linux Kernel community need to allow engineers to be maintainers as part of their job, so they can grow into becoming respected leaders and eventually, kernel maintainers. To support a strong talent pipeline, developers should be allowed and encouraged to take on upstream contributions such as reviewing other people's patches, refactoring kernel infrastructure, and writing documentation.

To that end, the Linux Foundation Technical Advisory Board (TAB) proposes this Linux Kernel Contribution Maturity Model. These common expectations for upstream community engagement aim to increase the influence of individual developers, increase the collaboration of organizations, and improve the overall health of the Linux Kernel ecosystem.

The TAB urges organizations to continuously evaluate their Open Source maturity model and commit to improvements to align with this model. To be effective, this evaluation should incorporate feedback from across the organization, including management and developers at all seniority levels. In the spirit of Open Source, we encourage organizations to publish their evaluations and plans to improve their engagement with the upstream community.

* Level 0

- Software Engineers are not allowed to contribute patches to the Linux kernel.

* Level 1

- Software Engineers are allowed to contribute patches to the Linux kernel, either as part of their job responsibilities or on their own time.

* Level 2

- Software Engineers are expected to contribute to the Linux Kernel as part of their job responsibilities.
- Software Engineers will be supported to attend Linux-related conferences as a part of their job.
- A Software Engineer's upstream code contributions will be considered in promotion and performance reviews.

*** Level 3**

- Software Engineers are expected to review patches (including patches authored by engineers from other companies) as part of their job responsibilities
- Contributing presentations or papers to Linux-related or academic conferences (such those organized by the Linux Foundation, Usenix, ACM, etc.), are considered part of an engineer's work.
- A Software Engineer's community contributions will be considered in promotion and performance reviews.
- Organizations will regularly report metrics of their open source contributions and track these metrics over time. These metrics may be published only internally within the organization, or at the organization's discretion, some or all may be published externally. Metrics that are strongly suggested include:
 - The number of upstream kernel contributions by team or organization (e.g., all people reporting up to a manager, director, or VP).
 - The percentage of kernel developers who have made upstream contributions relative to the total kernel developers in the organization.
 - The time interval between kernels used in the organization's servers and/or products, and the publication date of the upstream kernel upon which the internal kernel is based.
 - The number of out-of-tree commits present in internal kernels.

*** Level 4**

- Software Engineers are encouraged to spend a portion of their work time focused on Upstream Work, which is defined as reviewing patches, serving on program committees, improving core project infrastructure such as writing or maintaining tests, upstream tech debt reduction, writing documentation, etc.
- Software Engineers are supported in helping to organize Linux-related conferences.
- Organizations will consider community member feedback in official performance reviews.

*** Level 5**

- Upstream kernel development is considered a formal job position, with at least a third of the engineer's time spent doing Upstream Work.
- Organizations will actively seek out community member feedback as a factor in official performance reviews.
- Organizations will regularly report internally on the ratio of Upstream Work to work focused on directly pursuing business goals.

* Linux Kernel Enforcement Statement

As developers of the Linux kernel, we have a keen interest in how our software is used and how the license for our software is enforced. Compliance with the reciprocal sharing obligations of GPL-2.0 is critical to the long-term sustainability of our software and community.

Although there is a right to enforce the separate copyright interests in the contributions made to our community, we share an interest in ensuring that individual enforcement actions are conducted in a manner that benefits our community and do not have an unintended negative impact on the health and growth of our software ecosystem. In order to deter unhelpful enforcement actions, we agree that it is in the best interests of our development community to undertake the following commitment to users of the Linux kernel on behalf of ourselves and any successors to our copyright interests:

Notwithstanding the termination provisions of the GPL-2.0, we agree that it is in the best interests of our development community to adopt the following provisions of GPL-3.0 as additional permissions under our license with respect to any non-defensive assertion of rights under the license.

However, if you cease all violation of this License, then your license from a particular copyright holder is reinstated (a) provisionally, unless and until the copyright holder explicitly and finally terminates your license, and (b) permanently, if the copyright holder fails to notify you of the violation by some reasonable means prior to 60 days after the cessation.

Moreover, your license from a particular copyright holder is reinstated permanently if the copyright holder notifies you of the violation by some reasonable means, this is the first time you have received notice of violation of this License (for any work) from that copyright holder, and you cure the violation prior to 30 days after your receipt of the notice.

Our intent in providing these assurances is to encourage more use of the software. We want companies and individuals to use, modify and distribute this software. We want to work with users in an open and transparent way to eliminate any uncertainty about our expectations regarding compliance or enforcement that might limit adoption of our software. We view legal action as a last resort, to be initiated only when other community efforts have failed to resolve the problem.

Finally, once a non-compliance issue is resolved, we hope the user will feel welcome to join us in our efforts on this project. Working together, we will be stronger.

Except where noted below, we speak only for ourselves, and not for any company we might work for today, have in the past, or will in the future.

- Laura Abbott
- Bjorn Andersson (Linaro)
- Andrea Arcangeli
- Neil Armstrong
- Jens Axboe
- Pablo Neira Ayuso
- Khalid Aziz

- Ralf Baechle
- Felipe Balbi
- Arnd Bergmann
- Ard Biesheuvel
- Tim Bird
- Paolo Bonzini
- Christian Borntraeger
- Mark Brown (Linaro)
- Paul Burton
- Javier Martinez Canillas
- Rob Clark
- Kees Cook (Google)
- Jonathan Corbet
- Dennis Dalessandro
- Vivien Didelot (Savoir-faire Linux)
- Hans de Goede
- Mel Gorman (SUSE)
- Sven Eckelmann
- Alex Elder (Linaro)
- Fabio Estevam
- Larry Finger
- Bhumika Goyal
- Andy Gross
- Juergen Gross
- Shawn Guo
- Ulf Hansson
- Stephen Hemminger (Microsoft)
- Tejun Heo
- Rob Herring
- Masami Hiramatsu
- Michal Hocko
- Simon Horman
- Johan Hovold (Hovold Consulting AB)
- Christophe JAILLET

- Olof Johansson
- Lee Jones (Linaro)
- Heiner Kallweit
- Srinivas Kandagatla
- Jan Kara
- Shuah Khan (Samsung)
- David Kershner
- Jaegeuk Kim
- Namhyung Kim
- Colin Ian King
- Jeff Kirsher
- Greg Kroah-Hartman (Linux Foundation)
- Christian König
- Vinod Koul
- Krzysztof Kozłowski
- Viresh Kumar
- Aneesh Kumar K.V
- Julia Lawall
- Doug Ledford
- Chuck Lever (Oracle)
- Daniel Lezcano
- Shaohua Li
- Xin Long
- Tony Luck
- Catalin Marinas (Arm Ltd)
- Mike Marshall
- Chris Mason
- Paul E. McKenney
- Arnaldo Carvalho de Melo
- David S. Miller
- Ingo Molnar
- Kuninori Morimoto
- Trond Myklebust
- Martin K. Petersen (Oracle)

- Borislav Petkov
- Jiri Pirko
- Josh Poimboeuf
- Sebastian Reichel (Collabora)
- Guenter Roeck
- Joerg Roedel
- Leon Romanovsky
- Steven Rostedt (VMware)
- Frank Rowand
- Ivan Safonov
- Anna Schumaker
- Jes Sorensen
- K.Y. Srinivasan
- David Sterba (SUSE)
- Heiko Stuebner
- Jiri Kosina (SUSE)
- Willy Tarreau
- Dmitry Torokhov
- Linus Torvalds
- Thierry Reding
- Rik van Riel
- Luis R. Rodriguez
- Geert Uytterhoeven (Glider bvba)
- Eduardo Valentin (Amazon.com)
- Daniel Vetter
- Linus Walleij
- Richard Weinberger
- Dan Williams
- Rafael J. Wysocki
- Arvind Yadav
- Masahiro Yamada
- Wei Yongjun
- Lv Zheng
- Marc Zyngier (Arm Ltd)

* Kernel Driver Statement

* Position Statement on Linux Kernel Modules

We, the undersigned Linux kernel developers, consider any closed-source Linux kernel module or driver to be harmful and undesirable. We have repeatedly found them to be detrimental to Linux users, businesses, and the greater Linux ecosystem. Such modules negate the openness, stability, flexibility, and maintainability of the Linux development model and shut their users off from the expertise of the Linux community. Vendors that provide closed-source kernel modules force their customers to give up key Linux advantages or choose new vendors. Therefore, in order to take full advantage of the cost savings and shared support benefits open source has to offer, we urge vendors to adopt a policy of supporting their customers on Linux with open-source kernel code.

We speak only for ourselves, and not for any company we might work for today, have in the past, or will in the future.

- Dave Airlie
- Nick Andrew
- Jens Axboe
- Ralf Baechle
- Felipe Balbi
- Ohad Ben-Cohen
- Muli Ben-Yehuda
- Jiri Benc
- Arnd Bergmann
- Thomas Bogendoerfer
- Vitaly Bordug
- James Bottomley
- Josh Boyer
- Neil Brown
- Mark Brown
- David Brownell
- Michael Buesch
- Franck Bui-Huu
- Adrian Bunk
- François Cami
- Ralph Campbell
- Luiz Fernando N. Capitulino
- Mauro Carvalho Chehab

- Denis Cheng
- Jonathan Corbet
- Glauber Costa
- Alan Cox
- Magnus Damm
- Ahmed S. Darwish
- Robert P. J. Day
- Hans de Goede
- Arnaldo Carvalho de Melo
- Helge Deller
- Jean Delvare
- Mathieu Desnoyers
- Sven-Thorsten Dietrich
- Alexey Dobriyan
- Daniel Drake
- Alex Dubov
- Randy Dunlap
- Michael Ellerman
- Pekka Enberg
- Jan Engelhardt
- Mark Fasheh
- J. Bruce Fields
- Larry Finger
- Jeremy Fitzhardinge
- Mike Frysinger
- Kumar Gala
- Robin Getz
- Liam Girdwood
- Jan-Benedict Glaw
- Thomas Gleixner
- Brice Goglin
- Cyrill Gorcunov
- Andy Gospodarek
- Thomas Graf

- Krzysztof Halasa
- Harvey Harrison
- Stephen Hemminger
- Michael Hennerich
- Tejun Heo
- Benjamin Herrenschmidt
- Kristian Høgsberg
- Henrique de Moraes Holschuh
- Marcel Holtmann
- Mike Isely
- Takashi Iwai
- Olof Johansson
- Dave Jones
- Jesper Juhl
- Matthias Kaehlcke
- Kenji Kaneshige
- Jan Kara
- Jeremy Kerr
- Russell King
- Olaf Kirch
- Roel Kluin
- Hans-Jürgen Koch
- Auke Kok
- Peter Korsgaard
- Jiri Kosina
- Aaro Koskinen
- Mariusz Kozłowski
- Greg Kroah-Hartman
- Michael Krufky
- Aneesh Kumar
- Clemens Ladisch
- Christoph Lameter
- Gunnar Larisch
- Anders Larsen

- Grant Likely
- John W. Linville
- Yinghai Lu
- Tony Luck
- Pavel Machek
- Matt Mackall
- Paul Mackerras
- Roland McGrath
- Patrick McHardy
- Kyle McMartin
- Paul Menage
- Thierry Merle
- Eric Miao
- Akinobu Mita
- Ingo Molnar
- James Morris
- Andrew Morton
- Paul Mundt
- Oleg Nesterov
- Luca Olivetti
- S.Çağlar Onur
- Pierre Ossman
- Keith Owens
- Venkatesh Pallipadi
- Nick Piggin
- Nicolas Pitre
- Evgeniy Polyakov
- Richard Purdie
- Mike Rapoport
- Sam Ravnborg
- Gerrit Renker
- Stefan Richter
- David Rientjes
- Luis R. Rodriguez

- Stefan Roese
- Francois Romieu
- Rami Rosen
- Stephen Rothwell
- Maciej W. Rozycki
- Mark Salzyn
- Yoshinori Sato
- Deepak Saxena
- Holger Schurig
- Amit Shah
- Yoshihiro Shimoda
- Sergei Shtylyov
- Kay Sievers
- Sebastian Siewior
- Rik Snel
- Jes Sorensen
- Alexey Starikovskiy
- Alan Stern
- Timur Tabi
- Hirokazu Takata
- Eliezer Tamir
- Eugene Teo
- Doug Thompson
- FUJITA Tomonori
- Dmitry Torokhov
- Marcelo Tosatti
- Steven Toth
- Theodore Tso
- Matthias Urlichs
- Geert Uytterhoeven
- Arjan van de Ven
- Ivo van Doorn
- Rik van Riel
- Wim Van Sebrouck

- Hans Verkuil
- Horst H. von Brand
- Dmitri Vorobiev
- Anton Vorontsov
- Daniel Walker
- Johannes Weiner
- Harald Welte
- Matthew Wilcox
- Dan J. Williams
- Darrick J. Wong
- David Woodhouse
- Chris Wright
- Bryan Wu
- Rafael J. Wysocki
- Herbert Xu
- Vlad Yasevich
- Peter Zijlstra
- Bartłomiej Zolnierkiewicz

* The Linux Kernel Driver Interface

(all of your questions answered and then some)

Greg Kroah-Hartman <greg@kroah.com>

This is being written to try to explain why Linux **does not have a binary kernel interface, nor does it have a stable kernel interface.**

Note: Please realize that this article describes the **in kernel** interfaces, not the kernel to userspace interfaces.

The kernel to userspace interface is the one that application programs use, the syscall interface. That interface is **very** stable over time, and will not break. I have old programs that were built on a pre 0.9something kernel that still work just fine on the latest 2.6 kernel release. That interface is the one that users and application programmers can count on being stable.

* Executive Summary

You think you want a stable kernel interface, but you really do not, and you don't even know it. What you want is a stable running driver, and you get that only if your driver is in the main kernel tree. You also get lots of other good benefits if your driver is in the main kernel tree, all of which has made Linux into such a strong, stable, and mature operating system which is the reason you are using it in the first place.

* Intro

It's only the odd person who wants to write a kernel driver that needs to worry about the in-kernel interfaces changing. For the majority of the world, they neither see this interface, nor do they care about it at all.

First off, I'm not going to address **any** legal issues about closed source, hidden source, binary blobs, source wrappers, or any other term that describes kernel drivers that do not have their source code released under the GPL. Please consult a lawyer if you have any legal questions, I'm a programmer and hence, I'm just going to be describing the technical issues here (not to make light of the legal issues, they are real, and you do need to be aware of them at all times.)

So, there are two main topics here, binary kernel interfaces and stable kernel source interfaces. They both depend on each other, but we will discuss the binary stuff first to get it out of the way.

* Binary Kernel Interface

Assuming that we had a stable kernel source interface for the kernel, a binary interface would naturally happen too, right? Wrong. Please consider the following facts about the Linux kernel:

- Depending on the version of the C compiler you use, different kernel data structures will contain different alignment of structures, and possibly include different functions in different ways (putting functions inline or not.) The individual function organization isn't that important, but the different data structure padding is very important.
- Depending on what kernel build options you select, a wide range of different things can be assumed by the kernel:
 - different structures can contain different fields
 - Some functions may not be implemented at all, (i.e. some locks compile away to nothing for non-SMP builds.)
 - Memory within the kernel can be aligned in different ways, depending on the build options.
- Linux runs on a wide range of different processor architectures. There is no way that binary drivers from one architecture will run on another architecture properly.

Now a number of these issues can be addressed by simply compiling your module for the exact specific kernel configuration, using the same exact C compiler that the kernel was built with. This is sufficient if you want to provide a module for a specific release version of a specific Linux distribution. But multiply that single build by the number of different Linux distributions and the number of different supported releases of the Linux distribution and you quickly have

a nightmare of different build options on different releases. Also realize that each Linux distribution release contains a number of different kernels, all tuned to different hardware types (different processor types and different options), so for even a single release you will need to create multiple versions of your module.

Trust me, you will go insane over time if you try to support this kind of release, I learned this the hard way a long time ago...

*** Stable Kernel Source Interfaces**

This is a much more “volatile” topic if you talk to people who try to keep a Linux kernel driver that is not in the main kernel tree up to date over time.

Linux kernel development is continuous and at a rapid pace, never stopping to slow down. As such, the kernel developers find bugs in current interfaces, or figure out a better way to do things. If they do that, they then fix the current interfaces to work better. When they do so, function names may change, structures may grow or shrink, and function parameters may be reworked. If this happens, all of the instances of where this interface is used within the kernel are fixed up at the same time, ensuring that everything continues to work properly.

As a specific examples of this, the in-kernel USB interfaces have undergone at least three different reworks over the lifetime of this subsystem. These reworks were done to address a number of different issues:

- A change from a synchronous model of data streams to an asynchronous one. This reduced the complexity of a number of drivers and increased the throughput of all USB drivers such that we are now running almost all USB devices at their maximum speed possible.
- A change was made in the way data packets were allocated from the USB core by USB drivers so that all drivers now needed to provide more information to the USB core to fix a number of documented deadlocks.

This is in stark contrast to a number of closed source operating systems which have had to maintain their older USB interfaces over time. This provides the ability for new developers to accidentally use the old interfaces and do things in improper ways, causing the stability of the operating system to suffer.

In both of these instances, all developers agreed that these were important changes that needed to be made, and they were made, with relatively little pain. If Linux had to ensure that it will preserve a stable source interface, a new interface would have been created, and the older, broken one would have had to be maintained over time, leading to extra work for the USB developers. Since all Linux USB developers do their work on their own time, asking programmers to do extra work for no gain, for free, is not a possibility.

Security issues are also very important for Linux. When a security issue is found, it is fixed in a very short amount of time. A number of times this has caused internal kernel interfaces to be reworked to prevent the security problem from occurring. When this happens, all drivers that use the interfaces were also fixed at the same time, ensuring that the security problem was fixed and could not come back at some future time accidentally. If the internal interfaces were not allowed to change, fixing this kind of security problem and insuring that it could not happen again would not be possible.

Kernel interfaces are cleaned up over time. If there is no one using a current interface, it is deleted. This ensures that the kernel remains as small as possible, and that all potential

interfaces are tested as well as they can be (unused interfaces are pretty much impossible to test for validity.)

* What to do

So, if you have a Linux kernel driver that is not in the main kernel tree, what are you, a developer, supposed to do? Releasing a binary driver for every different kernel version for every distribution is a nightmare, and trying to keep up with an ever changing kernel interface is also a rough job.

Simple, get your kernel driver into the main kernel tree (remember we are talking about drivers released under a GPL-compatible license here, if your code doesn't fall under this category, good luck, you are on your own here, you leech). If your driver is in the tree, and a kernel interface changes, it will be fixed up by the person who did the kernel change in the first place. This ensures that your driver is always buildable, and works over time, with very little effort on your part.

The very good side effects of having your driver in the main kernel tree are:

- The quality of the driver will rise as the maintenance costs (to the original developer) will decrease.
- Other developers will add features to your driver.
- Other people will find and fix bugs in your driver.
- Other people will find tuning opportunities in your driver.
- Other people will update the driver for you when external interface changes require it.
- The driver automatically gets shipped in all Linux distributions without having to ask the distros to add it.

As Linux supports a larger number of different devices "out of the box" than any other operating system, and it supports these devices on more different processor architectures than any other operating system, this proven type of development model must be doing something right :)

Thanks to Randy Dunlap, Andrew Morton, David Brownell, Hanna Linder, Robert Love, and Nishanth Aravamudan for their review and comments on early drafts of this paper.

* Everything you ever wanted to know about Linux -stable releases

Rules on what kind of patches are accepted, and which ones are not, into the "-stable" tree:

- It or an equivalent fix must already exist in Linus' tree (upstream).
- It must be obviously correct and tested.
- It cannot be bigger than 100 lines, with context.
- It must follow the [Documentation/process/submitting-patches.rst](#) rules.
- It must either fix a real bug that bothers people or just add a device ID. To elaborate on the former:

- It fixes a problem like an oops, a hang, data corruption, a real security issue, a hardware quirk, a build error (but not for things marked `CONFIG_BROKEN`), or some "oh, that's not good" issue.
- Serious issues as reported by a user of a distribution kernel may also be considered if they fix a notable performance or interactivity issue. As these fixes are not as obvious and have a higher risk of a subtle regression they should only be submitted by a distribution kernel maintainer and include an addendum linking to a bugzilla entry if it exists and additional information on the user-visible impact.
- No "This could be a problem..." type of things like a "theoretical race condition", unless an explanation of how the bug can be exploited is also provided.
- No "trivial" fixes without benefit for users (spelling changes, whitespace cleanups, etc).

* Procedure for submitting patches to the -stable tree

Note: Security patches should not be handled (solely) by the -stable review process but should follow the procedures in [Documentation/process/security-bugs.rst](#).

There are three options to submit a change to -stable trees:

1. Add a 'stable tag' to the description of a patch you then submit for mainline inclusion.
2. Ask the stable team to pick up a patch already mainlined.
3. Submit a patch to the stable team that is equivalent to a change already mainlined.

The sections below describe each of the options in more detail.

Option 1 is **strongly** preferred, it is the easiest and most common. *Option 2* is mainly meant for changes where backporting was not considered at the time of submission. *Option 3* is an alternative to the two earlier options for cases where a mainlined patch needs adjustments to apply in older series (for example due to API changes).

When using option 2 or 3 you can ask for your change to be included in specific stable series. When doing so, ensure the fix or an equivalent is applicable, submitted, or already present in all newer stable trees still supported. This is meant to prevent regressions that users might later encounter on updating, if e.g. a fix merged for 5.19-rc1 would be backported to 5.10.y, but not to 5.15.y.

Option 1

To have a patch you submit for mainline inclusion later automatically picked up for stable trees, add the tag

`Cc: stable@vger.kernel.org`

in the sign-off area. Once the patch is mainlined it will be applied to the stable tree without anything else needing to be done by the author or subsystem maintainer.

To sent additional instructions to the stable team, use a shell-style inline comment:

- To specify any additional patch prerequisites for cherry picking use the following format in the sign-off area:

```
Cc: <stable@vger.kernel.org> # 3.3.x: alf84a3: sched: Check for idle
Cc: <stable@vger.kernel.org> # 3.3.x: 1b9508f: sched: Rate-limit newidle
Cc: <stable@vger.kernel.org> # 3.3.x: fd21073: sched: Fix affinity logic
Cc: <stable@vger.kernel.org> # 3.3.x
Signed-off-by: Ingo Molnar <mingo@elte.hu>
```

The tag sequence has the meaning of:

```
git cherry-pick alf84a3
git cherry-pick 1b9508f
git cherry-pick fd21073
git cherry-pick <this commit>
```

Note that for a patch series, you do not have to list as prerequisites the patches present in the series itself. For example, if you have the following patch series:

```
patch1
patch2
```

where patch2 depends on patch1, you do not have to list patch1 as prerequisite of patch2 if you have already marked patch1 for stable inclusion.

- For patches that may have kernel version prerequisites specify them using the following format in the sign-off area:

```
Cc: <stable@vger.kernel.org> # 3.3.x
```

The tag has the meaning of:

```
git cherry-pick <this commit>
```

For each "-stable" tree starting with the specified version.

Note, such tagging is unnecessary if the stable team can derive the appropriate versions from Fixes: tags.

- To delay pick up of patches, use the following format:

```
Cc: <stable@vger.kernel.org> # after 4 weeks in mainline
```

- For any other requests, just add a note to the stable tag. This for example can be used to point out known problems:

```
Cc: <stable@vger.kernel.org> # see patch description, needs adjustments ↵
↪ for <= 6.3
```

Option 2

If the patch already has been merged to mainline, send an email to stable@vger.kernel.org containing the subject of the patch, the commit ID, why you think it should be applied, and what kernel versions you wish it to be applied to.

Option 3

Send the patch, after verifying that it follows the above rules, to stable@vger.kernel.org and mention the kernel versions you wish it to be applied to. When doing so, you must note the upstream commit ID in the changelog of your submission with a separate line above the commit text, like this:

```
commit <sha1> upstream.
```

or alternatively:

```
[ Upstream commit <sha1> ]
```

If the submitted patch deviates from the original upstream patch (for example because it had to be adjusted for the older API), this must be very clearly documented and justified in the patch description.

* Following the submission

The sender will receive an ACK when the patch has been accepted into the queue, or a NAK if the patch is rejected. This response might take a few days, according to the schedules of the stable team members.

If accepted, the patch will be added to the -stable queue, for review by other developers and by the relevant subsystem maintainer.

* Review cycle

- When the -stable maintainers decide for a review cycle, the patches will be sent to the review committee, and the maintainer of the affected area of the patch (unless the submitter is the maintainer of the area) and CC: to the linux-kernel mailing list.
- The review committee has 48 hours in which to ACK or NAK the patch.
- If the patch is rejected by a member of the committee, or linux-kernel members object to the patch, bringing up issues that the maintainers and members did not realize, the patch will be dropped from the queue.
- The ACKed patches will be posted again as part of release candidate (-rc) to be tested by developers and testers.
- Usually only one -rc release is made, however if there are any outstanding issues, some patches may be modified or dropped or additional patches may be queued. Additional -rc releases are then released and tested until no issues are found.

- Responding to the -rc releases can be done on the mailing list by sending a "Tested-by:" email with any testing information desired. The "Tested-by:" tags will be collected and added to the release commit.
- At the end of the review cycle, the new -stable release will be released containing all the queued and tested patches.
- Security patches will be accepted into the -stable tree directly from the security kernel team, and not go through the normal review cycle. Contact the kernel security team for more details on this procedure.

* Trees

- The queues of patches, for both completed versions and in progress versions can be found at:

<https://git.kernel.org/pub/scm/linux/kernel/git/stable/stable-queue.git>

- The finalized and tagged releases of all stable kernels can be found in separate branches per version at:

<https://git.kernel.org/pub/scm/linux/kernel/git/stable/linux.git>

- The release candidate of all stable kernel versions can be found at:

<https://git.kernel.org/pub/scm/linux/kernel/git/stable/linux-stable-rc.git/>

<p>Warning: The -stable-rc tree is a snapshot in time of the stable-queue tree and will change frequently, hence will be rebased often. It should only be used for testing purposes (e.g. to be consumed by CI systems).</p>

* Review committee

- This is made up of a number of kernel developers who have volunteered for this task, and a few that haven't.

* Linux kernel management style

This is a short document describing the preferred (or made up, depending on who you ask) management style for the linux kernel. It's meant to mirror the [process/coding-style.rst](#) document to some degree, and mainly written to avoid answering¹ the same (or similar) questions over and over again.

Management style is very personal and much harder to quantify than simple coding style rules, so this document may or may not have anything to do with reality. It started as a lark, but that doesn't mean that it might not actually be true. You'll have to decide for yourself.

Btw, when talking about "kernel manager", it's all about the technical lead persons, not the people who do traditional management inside companies. If you sign purchase orders or you

¹ This document does so not so much by answering the question, but by making it painfully obvious to the questioner that we don't have a clue to what the answer is.

have any clue about the budget of your group, you're almost certainly not a kernel manager. These suggestions may or may not apply to you.

First off, I'd suggest buying "Seven Habits of Highly Effective People", and NOT read it. Burn it, it's a great symbolic gesture.

Anyway, here goes:

* 1) Decisions

Everybody thinks managers make decisions, and that decision-making is important. The bigger and more painful the decision, the bigger the manager must be to make it. That's very deep and obvious, but it's not actually true.

The name of the game is to **avoid** having to make a decision. In particular, if somebody tells you "choose (a) or (b), we really need you to decide on this", you're in trouble as a manager. The people you manage had better know the details better than you, so if they come to you for a technical decision, you're screwed. You're clearly not competent to make that decision for them.

(Corollary: if the people you manage don't know the details better than you, you're also screwed, although for a totally different reason. Namely that you are in the wrong job, and that **they** should be managing your brilliance instead).

So the name of the game is to **avoid** decisions, at least the big and painful ones. Making small and non-consequential decisions is fine, and makes you look like you know what you're doing, so what a kernel manager needs to do is to turn the big and painful ones into small things where nobody really cares.

It helps to realize that the key difference between a big decision and a small one is whether you can fix your decision afterwards. Any decision can be made small by just always making sure that if you were wrong (and you **will** be wrong), you can always undo the damage later by backtracking. Suddenly, you get to be doubly managerial for making **two** inconsequential decisions - the wrong one **and** the right one.

And people will even see that as true leadership (*cough* bullshit *cough*).

Thus the key to avoiding big decisions becomes to just avoiding to do things that can't be undone. Don't get ushered into a corner from which you cannot escape. A cornered rat may be dangerous - a cornered manager is just pitiful.

It turns out that since nobody would be stupid enough to ever really let a kernel manager have huge fiscal responsibility **anyway**, it's usually fairly easy to backtrack. Since you're not going to be able to waste huge amounts of money that you might not be able to repay, the only thing you can backtrack on is a technical decision, and there back-tracking is very easy: just tell everybody that you were an incompetent nincompoop, say you're sorry, and undo all the worthless work you had people work on for the last year. Suddenly the decision you made a year ago wasn't a big decision after all, since it could be easily undone.

It turns out that some people have trouble with this approach, for two reasons:

- admitting you were an idiot is harder than it looks. We all like to maintain appearances, and coming out in public to say that you were wrong is sometimes very hard indeed.
- having somebody tell you that what you worked on for the last year wasn't worthwhile after all can be hard on the poor lowly engineers too, and while the actual **work** was easy enough to undo by just deleting it, you may have irrevocably lost the trust of that engineer. And

remember: "irrevocable" was what we tried to avoid in the first place, and your decision ended up being a big one after all.

Happily, both of these reasons can be mitigated effectively by just admitting up-front that you don't have a friggin' clue, and telling people ahead of the fact that your decision is purely preliminary, and might be the wrong thing. You should always reserve the right to change your mind, and make people very **aware** of that. And it's much easier to admit that you are stupid when you haven't **yet** done the really stupid thing.

Then, when it really does turn out to be stupid, people just roll their eyes and say "Oops, not again".

This preemptive admission of incompetence might also make the people who actually do the work also think twice about whether it's worth doing or not. After all, if **they** aren't certain whether it's a good idea, you sure as hell shouldn't encourage them by promising them that what they work on will be included. Make them at least think twice before they embark on a big endeavor.

Remember: they'd better know more about the details than you do, and they usually already think they have the answer to everything. The best thing you can do as a manager is not to instill confidence, but rather a healthy dose of critical thinking on what they do.

Btw, another way to avoid a decision is to plaintively just whine "can't we just do both?" and look pitiful. Trust me, it works. If it's not clear which approach is better, they'll eventually figure it out. The answer may end up being that both teams get so frustrated by the situation that they just give up.

That may sound like a failure, but it's usually a sign that there was something wrong with both projects, and the reason the people involved couldn't decide was that they were both wrong. You end up coming up smelling like roses, and you avoided yet another decision that you could have screwed up on.

* 2) People

Most people are idiots, and being a manager means you'll have to deal with it, and perhaps more importantly, that **they** have to deal with **you**.

It turns out that while it's easy to undo technical mistakes, it's not as easy to undo personality disorders. You just have to live with theirs - and yours.

However, in order to prepare yourself as a kernel manager, it's best to remember not to burn any bridges, bomb any innocent villagers, or alienate too many kernel developers. It turns out that alienating people is fairly easy, and un-alienating them is hard. Thus "alienating" immediately falls under the heading of "not reversible", and becomes a no-no according to [1\) Decisions](#).

There's just a few simple rules here:

- (1) don't call people d*ckheads (at least not in public)
- (2) learn how to apologize when you forgot rule (1)

The problem with #1 is that it's very easy to do, since you can say "you're a d*ckhead" in millions of different ways², sometimes without even realizing it, and almost always with a white-hot conviction that you are right.

² Paul Simon sang "Fifty Ways to Leave Your Lover", because quite frankly, "A Million Ways to Tell a Developer They're a D*ckhead" doesn't scan nearly as well. But I'm sure he thought about it.

And the more convinced you are that you are right (and let's face it, you can call just about **anybody** a d*ckhead, and you often **will** be right), the harder it ends up being to apologize afterwards.

To solve this problem, you really only have two options:

- get really good at apologies
- spread the "love" out so evenly that nobody really ends up feeling like they get unfairly targeted. Make it inventive enough, and they might even be amused.

The option of being unfailingly polite really doesn't exist. Nobody will trust somebody who is so clearly hiding their true character.

* 3) People II - the Good Kind

While it turns out that most people are idiots, the corollary to that is sadly that you are one too, and that while we can all bask in the secure knowledge that we're better than the average person (let's face it, nobody ever believes that they're average or below-average), we should also admit that we're not the sharpest knife around, and there will be other people that are less of an idiot than you are.

Some people react badly to smart people. Others take advantage of them.

Make sure that you, as a kernel maintainer, are in the second group. Suck up to them, because they are the people who will make your job easier. In particular, they'll be able to make your decisions for you, which is what the game is all about.

So when you find somebody smarter than you are, just coast along. Your management responsibilities largely become ones of saying "Sounds like a good idea - go wild", or "That sounds good, but what about xxx?". The second version in particular is a great way to either learn something new about "xxx" or seem **extra** managerial by pointing out something the smarter person hadn't thought about. In either case, you win.

One thing to look out for is to realize that greatness in one area does not necessarily translate to other areas. So you might prod people in specific directions, but let's face it, they might be good at what they do, and suck at everything else. The good news is that people tend to naturally gravitate back to what they are good at, so it's not like you are doing something irreversible when you **do** prod them in some direction, just don't push too hard.

* 4) Placing blame

Things will go wrong, and people want somebody to blame. Tag, you're it.

It's not actually that hard to accept the blame, especially if people kind of realize that it wasn't **all** your fault. Which brings us to the best way of taking the blame: do it for someone else. You'll feel good for taking the fall, they'll feel good about not getting blamed, and the person who lost their whole 36GB porn-collection because of your incompetence will grudgingly admit that you at least didn't try to weasel out of it.

Then make the developer who really screwed up (if you can find them) know **in private** that they screwed up. Not just so they can avoid it in the future, but so that they know they owe you one. And, perhaps even more importantly, they're also likely the person who can fix it. Because, let's face it, it sure ain't you.

Taking the blame is also why you get to be manager in the first place. It's part of what makes people trust you, and allow you the potential glory, because you're the one who gets to say "I screwed up". And if you've followed the previous rules, you'll be pretty good at saying that by now.

* 5) Things to avoid

There's one thing people hate even more than being called "d*ckhead", and that is being called a "d*ckhead" in a sanctimonious voice. The first you can apologize for, the second one you won't really get the chance. They likely will no longer be listening even if you otherwise do a good job.

We all think we're better than anybody else, which means that when somebody else puts on airs, it **really** rubs us the wrong way. You may be morally and intellectually superior to everybody around you, but don't try to make it too obvious unless you really **intend** to irritate somebody³.

Similarly, don't be too polite or subtle about things. Politeness easily ends up going overboard and hiding the problem, and as they say, "On the internet, nobody can hear you being subtle". Use a big blunt object to hammer the point in, because you can't really depend on people getting your point otherwise.

Some humor can help pad both the bluntness and the moralizing. Going overboard to the point of being ridiculous can drive a point home without making it painful to the recipient, who just thinks you're being silly. It can thus help get through the personal mental block we all have about criticism.

* 6) Why me?

Since your main responsibility seems to be to take the blame for other peoples mistakes, and make it painfully obvious to everybody else that you're incompetent, the obvious question becomes one of why do it in the first place?

First off, while you may or may not get screaming teenage girls (or boys, let's not be judgmental or sexist here) knocking on your dressing room door, you **will** get an immense feeling of personal accomplishment for being "in charge". Never mind the fact that you're really leading by trying to keep up with everybody else and running after them as fast as you can. Everybody will still think you're the person in charge.

It's a great job if you can hack it.

³ Hint: internet newsgroups that are not directly related to your work are great ways to take out your frustrations at other people. Write insulting posts with a sneer just to get into a good flame every once in a while, and you'll feel cleansed. Just don't crap too close to home.

* Researcher Guidelines

The Linux kernel community welcomes transparent research on the Linux kernel, the activities involved in producing it, and any other byproducts of its development. Linux benefits greatly from this kind of research, and most aspects of Linux are driven by research in one form or another.

The community greatly appreciates if researchers can share preliminary findings before making their results public, especially if such research involves security. Getting involved early helps both improve the quality of research and ability for Linux to improve from it. In any case, sharing open access copies of the published research with the community is recommended.

This document seeks to clarify what the Linux kernel community considers acceptable and non-acceptable practices when conducting such research. At the very least, such research and related activities should follow standard research ethics rules. For more background on research ethics generally, ethics in technology, and research of developer communities in particular, see:

- [History of Research Ethics](#)
- [IEEE Ethics](#)
- [Developer and Researcher Views on the Ethics of Experiments on Open-Source Projects](#)

The Linux kernel community expects that everyone interacting with the project is participating in good faith to make Linux better. Research on any publicly-available artifact (including, but not limited to source code) produced by the Linux kernel community is welcome, though research on developers must be distinctly opt-in.

Passive research that is based entirely on publicly available sources, including posts to public mailing lists and commits to public repositories, is clearly permissible. Though, as with any research, standard ethics must still be followed.

Active research on developer behavior, however, must be done with the explicit agreement of, and full disclosure to, the individual developers involved. Developers cannot be interacted with/experimented on without consent; this, too, is standard research ethics.

* Surveys

Research often takes the form of surveys sent to maintainers or contributors. As a general rule, though, the kernel community derives little value from these surveys. The kernel development process works because every developer benefits from their participation, even working with others who have different goals. Responding to a survey, though, is a one-way demand placed on busy developers with no corresponding benefit to themselves or to the kernel community as a whole. For this reason, this method of research is discouraged.

Kernel community members already receive far too much email and are likely to perceive survey requests as just another demand on their time. Sending such requests deprives the community of valuable contributor time and is unlikely to yield a statistically useful response.

As an alternative, researchers should consider attending developer events, hosting sessions where the research project and its benefits to the participants can be explained, and interacting directly with the community there. The information received will be far richer than that obtained from an email survey, and the community will gain from the ability to learn from your insights as well.

* Patches

To help clarify: sending patches to developers *is* interacting with them, but they have already consented to receiving *good faith contributions*. Sending intentionally flawed/vulnerable patches or contributing misleading information to discussions is not consented to. Such communication can be damaging to the developer (e.g. draining time, effort, and morale) and damaging to the project by eroding the entire developer community's trust in the contributor (and the contributor's organization as a whole), undermining efforts to provide constructive feedback to contributors, and putting end users at risk of software flaws.

Participation in the development of Linux itself by researchers, as with anyone, is welcomed and encouraged. Research into Linux code is a common practice, especially when it comes to developing or running analysis tools that produce actionable results.

When engaging with the developer community, sending a patch has traditionally been the best way to make an impact. Linux already has plenty of known bugs -- what's much more helpful is having vetted fixes. Before contributing, carefully read the appropriate documentation:

- [A guide to the Kernel Development Process](#)
- [Submitting patches: the essential guide to getting your code into the kernel](#)
- [Documentation/admin-guide/reporting-issues.rst](#)
- [Security bugs](#)

Then send a patch (including a commit log with all the details listed below) and follow up on any feedback from other developers.

When sending patches produced from research, the commit logs should contain at least the following details, so that developers have appropriate context for understanding the contribution. Answer:

- What is the specific problem that has been found?
- How could the problem be reached on a running system?
- What effect would encountering the problem have on the system?
- How was the problem found? Specifically include details about any testing, static or dynamic analysis programs, and any other tools or methods used to perform the work.
- Which version of Linux was the problem found on? Using the most recent release or a recent linux-next branch is strongly preferred (see [HOWTO do Linux kernel development](#)).
- What was changed to fix the problem, and why it is believed to be correct?
- How was the change build tested and run-time tested?
- What prior commit does this change fix? This should go in a "Fixes:" tag as the documentation describes.
- Who else has reviewed this patch? This should go in appropriate "Reviewed-by:" tags; see below.

For example:

```
From: Author <author@email>
Subject: [PATCH] drivers/foo_bar: Add missing kfree()
```

The error path in `foo_bar` driver does not correctly free the allocated `struct foo_bar_info`. This can happen if the attached `foo_bar` device rejects the initialization packets sent during `foo_bar_probe()`. This would result in a 64 byte slab memory leak once per device attach, wasting memory resources over time.

This flaw was found using an experimental static analysis tool we are developing, `LeakMagic`[1], which reported the following warning when analyzing the v5.15 kernel release:

```
path/to/foo_bar.c:187: missing kfree() call?
```

Add the missing `kfree()` to the error path. No other references to this memory exist outside the probe function, so this is the only place it can be freed.

`x86_64` and `arm64` defconfig builds with `CONFIG_FOO_BAR=y` using GCC 11.2 show no new warnings, and `LeakMagic` no longer warns about this code path. As we don't have a `FooBar` device to test with, no runtime testing was able to be performed.

[1] <https://url/to/leakmagic/details>

Reported-by: Researcher <researcher@email>

Fixes: aaaabbbbccccdddd ("Introduce support for `FooBar`")

Signed-off-by: Author <author@email>

Reviewed-by: Reviewer <reviewer@email>

If you are a first time contributor it is recommended that the patch itself be vetted by others privately before being posted to public lists. (This is required if you have been explicitly told your patches need more careful internal review.) These people are expected to have their "Reviewed-by" tag included in the resulting patch. Finding another developer familiar with Linux contribution, especially within your own organization, and having them help with reviews before sending them to the public mailing lists tends to significantly improve the quality of the resulting patches, and there by reduces the burden on other developers.

If no one can be found to internally review patches and you need help finding such a person, or if you have any other questions related to this document and the developer community's expectations, please reach out to the private Technical Advisory Board mailing list: <tech-board@lists.linux-foundation.org>.

DEALING WITH BUGS

Bugs are a fact of life; it is important that we handle them properly. The documents below describe our policies around the handling of a couple of special classes of bugs: regressions and security problems.

* Handling regressions

We don't cause regressions -- this document describes what this "first rule of Linux kernel development" means in practice for developers. It complements `Documentation/admin-guide/reporting-regressions.rst`, which covers the topic from a user's point of view; if you never read that text, go and at least skim over it before continuing here.

* The important bits (aka "The TL;DR")

1. Ensure subscribers of the [regression mailing list \(regressions@lists.linux.dev\)](mailto:regressions@lists.linux.dev) quickly become aware of any new regression report:
 - When receiving a mailed report that did not CC the list, bring it into the loop by immediately sending at least a brief "Reply-all" with the list CCed.
 - Forward or bounce any reports submitted in bug trackers to the list.
2. Make the Linux kernel regression tracking bot "regzbot" track the issue (this is optional, but recommended):
 - For mailed reports, check if the reporter included a line like `#regzbot introduced v5.13..v5.14-rc1`. If not, send a reply (with the regressions list in CC) containing a paragraph like the following, which tells regzbot when the issue started to happen:

```
#regzbot ^introduced 1f2e3d4c5b6a
```

- When forwarding reports from a bug tracker to the regressions list (see above), include a paragraph like the following:

```
#regzbot introduced: v5.13..v5.14-rc1
#regzbot from: Some N. Ice Human <some.human@example.com>
#regzbot monitor: http://some.bugtracker.example.com/ticket?
↪id=123456789
```


3. When submitting fixes for regressions, add "Link:" tags to the patch description pointing to all places where the issue was reported, as mandated by *Submitting patches: the essential guide to getting your code into the kernel* and *Documentation/process/5.Posting.rst*.
4. Try to fix regressions quickly once the culprit has been identified; fixes for most regressions should be merged within two weeks, but some need to be resolved within two or three days.

* All the details on Linux kernel regressions relevant for developers

The important basics in more detail

What to do when receiving regression reports

Ensure the Linux kernel's regression tracker and others subscribers of the [regression mailing list](#) (regressions@lists.linux.dev) become aware of any newly reported regression:

- When you receive a report by mail that did not CC the list, immediately bring it into the loop by sending at least a brief "Reply-all" with the list CCed; try to ensure it gets CCed again in case you reply to a reply that omitted the list.
- If a report submitted in a bug tracker hits your Inbox, forward or bounce it to the list. Consider checking the list archives beforehand, if the reporter already forwarded the report as instructed by *Documentation/admin-guide/reporting-issues.rst*.

When doing either, consider making the Linux kernel regression tracking bot "regzbot" immediately start tracking the issue:

- For mailed reports, check if the reporter included a "regzbot command" like #regzbot introduced 1f2e3d4c5b6a. If not, send a reply (with the regressions list in CC) with a paragraph like the following::

```
#regzbot ^introduced: v5.13..v5.14-rc1
```

This tells regzbot the version range in which the issue started to happen; you can specify a range using commit-ids as well or state a single commit-id in case the reporter bisected the culprit.

Note the caret (^) before the "introduced": it tells regzbot to treat the parent mail (the one you reply to) as the initial report for the regression you want to see tracked; that's important, as regzbot will later look out for patches with "Link:" tags pointing to the report in the archives on lore.kernel.org.

- When forwarding a regressions reported to a bug tracker, include a paragraph with these regzbot commands:

```
#regzbot introduced: 1f2e3d4c5b6a
#regzbot from: Some N. Ice Human <some.human@example.com>
#regzbot monitor: http://some.bugtracker.example.com/ticket?id=123456789
```

Regzbot will then automatically associate patches with the report that contain "Link:" tags pointing to your mail or the mentioned ticket.

What's important when fixing regressions

You don't need to do anything special when submitting fixes for regression, just remember to do what *Submitting patches: the essential guide to getting your code into the kernel*, *Documentation/process/5.Posting.rst*, and *Everything you ever wanted to know about Linux -stable releases* already explain in more detail:

- Point to all places where the issue was reported using "Link:" tags:

Link: <https://lore.kernel.org/r/30th.anniversary.repost@klaava.Helsinki.FI/>
 Link: https://bugzilla.kernel.org/show_bug.cgi?id=1234567890

- Add a "Fixes:" tag to specify the commit causing the regression.
- If the culprit was merged in an earlier development cycle, explicitly mark the fix for backporting using the Cc: `stable@vger.kernel.org` tag.

All this is expected from you and important when it comes to regression, as these tags are of great value for everyone (you included) that might be looking into the issue weeks, months, or years later. These tags are also crucial for tools and scripts used by other kernel developers or Linux distributions; one of these tools is regzbot, which heavily relies on the "Link:" tags to associate reports for regression with changes resolving them.

Expectations and best practices for fixing regressions

As a Linux kernel developer, you are expected to give your best to prevent situations where a regression caused by a recent change of yours leaves users only these options:

- Run a kernel with a regression that impacts usage.
- Switch to an older or newer kernel series.
- Continue running an outdated and thus potentially insecure kernel for more than three weeks after the regression's culprit was identified. Ideally it should be less than two. And it ought to be just a few days, if the issue is severe or affects many users -- either in general or in prevalent environments.

How to realize that in practice depends on various factors. Use the following rules of thumb as a guide.

In general:

- Prioritize work on regressions over all other Linux kernel work, unless the latter concerns a severe issue (e.g. acute security vulnerability, data loss, bricked hardware, ...).
- Expedite fixing mainline regressions that recently made it into a proper mainline, stable, or longterm release (either directly or via backport).
- Do not consider regressions from the current cycle as something that can wait till the end of the cycle, as the issue might discourage or prevent users and CI systems from testing mainline now or generally.
- Work with the required care to avoid additional or bigger damage, even if resolving an issue then might take longer than outlined below.

On timing once the culprit of a regression is known:

- Aim to mainline a fix within two or three days, if the issue is severe or bothering many users -- either in general or in prevalent conditions like a particular hardware environment, distribution, or stable/longterm series.
- Aim to mainline a fix by Sunday after the next, if the culprit made it into a recent mainline, stable, or longterm release (either directly or via backport); if the culprit became known early during a week and is simple to resolve, try to mainline the fix within the same week.
- For other regressions, aim to mainline fixes before the hindmost Sunday within the next three weeks. One or two Sundays later are acceptable, if the regression is something people can live with easily for a while -- like a mild performance regression.
- It's strongly discouraged to delay mainlining regression fixes till the next merge window, except when the fix is extraordinarily risky or when the culprit was mainlined more than a year ago.

On procedure:

- Always consider reverting the culprit, as it's often the quickest and least dangerous way to fix a regression. Don't worry about mainlining a fixed variant later: that should be straight-forward, as most of the code went through review once already.
- Try to resolve any regressions introduced in mainline during the past twelve months before the current development cycle ends: Linus wants such regressions to be handled like those from the current cycle, unless fixing bears unusual risks.
- Consider CCing Linus on discussions or patch review, if a regression seems tangly. Do the same in precarious or urgent cases -- especially if the subsystem maintainer might be unavailable. Also CC the stable team, when you know such a regression made it into a mainline, stable, or longterm release.
- For urgent regressions, consider asking Linus to pick up the fix straight from the mailing list: he is totally fine with that for uncontroversial fixes. Ideally though such requests should happen in accordance with the subsystem maintainers or come directly from them.
- In case you are unsure if a fix is worth the risk applying just days before a new mainline release, send Linus a mail with the usual lists and people in CC; in it, summarize the situation while asking him to consider picking up the fix straight from the list. He then himself can make the call and when needed even postpone the release. Such requests again should ideally happen in accordance with the subsystem maintainers or come directly from them.

Regarding stable and longterm kernels:

- You are free to leave regressions to the stable team, if they at no point in time occurred with mainline or were fixed there already.
- If a regression made it into a proper mainline release during the past twelve months, ensure to tag the fix with "Cc: stable@vger.kernel.org", as a "Fixes:" tag alone does not guarantee a backport. Please add the same tag, in case you know the culprit was backported to stable or longterm kernels.
- When receiving reports about regressions in recent stable or longterm kernel series, please evaluate at least briefly if the issue might happen in current mainline as well -- and if that seems likely, take hold of the report. If in doubt, ask the reporter to check mainline.
- Whenever you want to swiftly resolve a regression that recently also made it into a proper mainline, stable, or longterm release, fix it quickly in mainline; when appropriate thus

involve Linus to fast-track the fix (see above). That's because the stable team normally does neither revert nor fix any changes that cause the same problems in mainline.

- In case of urgent regression fixes you might want to ensure prompt backporting by dropping the stable team a note once the fix was mainlined; this is especially advisable during merge windows and shortly thereafter, as the fix otherwise might land at the end of a huge patch queue.

On patch flow:

- Developers, when trying to reach the time periods mentioned above, remember to account for the time it takes to get fixes tested, reviewed, and merged by Linus, ideally with them being in linux-next at least briefly. Hence, if a fix is urgent, make it obvious to ensure others handle it appropriately.
- Reviewers, you are kindly asked to assist developers in reaching the time periods mentioned above by reviewing regression fixes in a timely manner.
- Subsystem maintainers, you likewise are encouraged to expedite the handling of regression fixes. Thus evaluate if skipping linux-next is an option for the particular fix. Also consider sending git pull requests more often than usual when needed. And try to avoid holding onto regression fixes over weekends -- especially when the fix is marked for backporting.

More aspects regarding regressions developers should be aware of

How to deal with changes where a risk of regression is known

Evaluate how big the risk of regressions is, for example by performing a code search in Linux distributions and Git forges. Also consider asking other developers or projects likely to be affected to evaluate or even test the proposed change; if problems surface, maybe some solution acceptable for all can be found.

If the risk of regressions in the end seems to be relatively small, go ahead with the change, but let all involved parties know about the risk. Hence, make sure your patch description makes this aspect obvious. Once the change is merged, tell the Linux kernel's regression tracker and the regressions mailing list about the risk, so everyone has the change on the radar in case reports trickle in. Depending on the risk, you also might want to ask the subsystem maintainer to mention the issue in his mainline pull request.

What else is there to known about regressions?

Check out `Documentation/admin-guide/reporting-regressions.rst`, it covers a lot of other aspects you want might want to be aware of:

- the purpose of the "no regressions rule"
- what issues actually qualify as regression
- who's in charge for finding the root cause of a regression
- how to handle tricky situations, e.g. when a regression is caused by a security fix or when fixing a regression might cause another one

Whom to ask for advice when it comes to regressions

Send a mail to the regressions mailing list (regressions@lists.linux.dev) while CCing the Linux kernel's regression tracker (regressions@leemhuis.info); if the issue might better be dealt with in private, feel free to omit the list.

More about regression tracking and regzbot

Why the Linux kernel has a regression tracker, and why is regzbot used?

Rules like "no regressions" need someone to ensure they are followed, otherwise they are broken either accidentally or on purpose. History has shown this to be true for the Linux kernel as well. That's why Thorsten Leemhuis volunteered to keep an eye on things as the Linux kernel's regression tracker, who's occasionally helped by other people. Neither of them are paid to do this, that's why regression tracking is done on a best effort basis.

Earlier attempts to manually track regressions have shown it's an exhausting and frustrating work, which is why they were abandoned after a while. To prevent this from happening again, Thorsten developed regzbot to facilitate the work, with the long term goal to automate regression tracking as much as possible for everyone involved.

How does regression tracking work with regzbot?

The bot watches for replies to reports of tracked regressions. Additionally, it's looking out for posted or committed patches referencing such reports with "Link:" tags; replies to such patch postings are tracked as well. Combined this data provides good insights into the current state of the fixing process.

Regzbot tries to do its job with as little overhead as possible for both reporters and developers. In fact, only reporters are burdened with an extra duty: they need to tell regzbot about the regression report using the `#regzbot introduced` command outlined above; if they don't do that, someone else can take care of that using `#regzbot ^introduced`.

For developers there normally is no extra work involved, they just need to make sure to do something that was expected long before regzbot came to light: add "Link:" tags to the patch description pointing to all reports about the issue fixed.

Do I have to use regzbot?

It's in the interest of everyone if you do, as kernel maintainers like Linus Torvalds partly rely on regzbot's tracking in their work -- for example when deciding to release a new version or extend the development phase. For this they need to be aware of all unfixed regression; to do that, Linus is known to look into the weekly reports sent by regzbot.

Do I have to tell regzbot about every regression I stumble upon?

Ideally yes: we are all humans and easily forget problems when something more important unexpectedly comes up -- for example a bigger problem in the Linux kernel or something in real life that's keeping us away from keyboards for a while. Hence, it's best to tell regzbot about every regression, except when you immediately write a fix and commit it to a tree regularly merged to the affected kernel series.

How to see which regressions regzbot tracks currently?

Check [regzbot's web-interface](#) for the latest info; alternatively, [search for the latest regression report](#), which regzbot normally sends out once a week on Sunday evening (UTC), which is a few hours before Linus usually publishes new (pre-)releases.

What places is regzbot monitoring?

Regzbot is watching the most important Linux mailing lists as well as the git repositories of linux-next, mainline, and stable/longterm.

What kind of issues are supposed to be tracked by regzbot?

The bot is meant to track regressions, hence please don't involve regzbot for regular issues. But it's okay for the Linux kernel's regression tracker if you use regzbot to track severe issues, like reports about hangs, corrupted data, or internal errors (Panic, Oops, BUG(), warning, ...).

Can I add regressions found by CI systems to regzbot's tracking?

Feel free to do so, if the particular regression likely has impact on practical use cases and thus might be noticed by users; hence, please don't involve regzbot for theoretical regressions unlikely to show themselves in real world usage.

How to interact with regzbot?

By using a 'regzbot command' in a direct or indirect reply to the mail with the regression report. These commands need to be in their own paragraph (IOW: they need to be separated from the rest of the mail using blank lines).

One such command is `#regzbot introduced <version or commit>`, which makes regzbot consider your mail as a regressions report added to the tracking, as already described above; `#regzbot ^introduced <version or commit>` is another such command, which makes regzbot consider the parent mail as a report for a regression which it starts to track.

Once one of those two commands has been utilized, other regzbot commands can be used in direct or indirect replies to the report. You can write them below one of the *introduced* commands or in replies to the mail that used one of them or itself is a reply to that mail:

- Set or update the title:

```
#regzbot title: foo
```

- Monitor a discussion or bugzilla.kernel.org ticket where additions aspects of the issue or a fix are discussed -- for example the posting of a patch fixing the regression:

```
#regzbot monitor: https://lore.kernel.org/all/30th.anniversary.  
→repost@klaava.Helsinki.FI/
```

Monitoring only works for lore.kernel.org and bugzilla.kernel.org; regzbot will consider all messages in that thread or ticket as related to the fixing process.

- Point to a place with further details of interest, like a mailing list post or a ticket in a bug tracker that are slightly related, but about a different topic:

```
#regzbot link: https://bugzilla.kernel.org/show_bug.cgi?id=123456789
```

- Mark a regression as fixed by a commit that is heading upstream or already landed:

```
#regzbot fixed-by: 1f2e3d4c5d
```

- Mark a regression as a duplicate of another one already tracked by regzbot:

```
#regzbot dup-of: https://lore.kernel.org/all/30th.anniversary.  
→repost@klaava.Helsinki.FI/
```

- Mark a regression as invalid:

```
#regzbot invalid: wasn't a regression, problem has always existed
```

Is there more to tell about regzbot and its commands?

More detailed and up-to-date information about the Linux kernel's regression tracking bot can be found on its [project page](#), which among others contains a [getting started guide](#) and [reference documentation](#) which both cover more details than the above section.

Quotes from Linus about regression

Find below a few real life examples of how Linus Torvalds expects regressions to be handled:

- From [2017-10-26 \(1/2\)](#):

```
If you break existing user space setups THAT IS A REGRESSION.
```

```
It's not ok to say "but we'll fix the user space setup".
```

```
Really. NOT OK.
```

```
[...]
```

```
The first rule is:
```


- we don't cause regressions

and the corollary is that when regressions **do** occur, we admit to them and fix them, instead of blaming user space.

The fact that you have apparently been denying the regression now for three weeks means that I will revert, and I will stop pulling apparmor requests until the people involved understand how kernel development is done.

- From [2017-10-26 \(2/2\)](#):

People should basically always feel like they can update their kernel and simply not have to worry about it.

I refuse to introduce "you can only update the kernel if you also update that other program" kind of limitations. If the kernel used to work for you, the rule is that it continues to work for you.

There have been exceptions, but they are few and far between, and they generally have some major and fundamental reasons for having happened, that were basically entirely unavoidable, and people *_tried_hard_* to avoid them. Maybe we can't practically support the hardware any more after it is decades old and nobody uses it with modern kernels any more. Maybe there's a serious security issue with how we did things, and people actually depended on that fundamentally broken model. Maybe there was some fundamental other breakage that just *_had_* to have a flag day for very core and fundamental reasons.

And notice that this is very much about **breaking** peoples environments.

Behavioral changes happen, and maybe we don't even support some feature any more. There's a number of fields in `/proc/<pid>/stat` that are printed out as zeroes, simply because they don't even **exist** in the kernel any more, or because showing them was a mistake (typically an information leak). But the numbers got replaced by zeroes, so that the code that used to parse the fields still works. The user might not see everything they used to see, and so behavior is clearly different, but things still *_work_*, even if they might no longer show sensitive (or no longer relevant) information.

But if something actually breaks, then the change must get fixed or reverted. And it gets fixed in the **kernel**. Not by saying "well, fix your user space then". It was a kernel change that exposed the problem, it needs to be the kernel that corrects for it, because we have a "upgrade in place" model. We don't have a "upgrade with new user space".

And I seriously will refuse to take code from people who do not understand and honor this very simple rule.

This rule is also not going to change.

And yes, I realize that the kernel is "special" in this respect. I'm proud of it.

I have seen, and can point to, lots of projects that go "We need to break that use case in order to make progress" or "you relied on undocumented behavior, it sucks to be you" or "there's a better way to do what you want to do, and you have to change to that new better way", and I simply don't think that's acceptable outside of very early alpha releases that have experimental users that know what they signed up for. The kernel hasn't been in that situation for the last two decades.

We do API breakage inside the kernel all the time. We will fix internal problems by saying "you now need to do XYZ", but then it's about internal kernel API's, and the people who do that then also obviously have to fix up all the in-kernel users of that API. Nobody can say "I now broke the API you used, and now you need to fix it up". Whoever broke something gets to fix it too.

And we simply do not break user space.

- From [2020-05-21](#):

The rules about regressions have never been about any kind of documented behavior, or where the code lives.

The rules about regressions are always about "breaks user workflow".

Users are literally the only thing that matters.

No amount of "you shouldn't have used this" or "that behavior was undefined, it's your own fault your app broke" or "that used to work simply because of a kernel bug" is at all relevant.

Now, reality is never entirely black-and-white. So we've had things like "serious security issue" etc that just forces us to make changes that may break user space. But even then the rule is that we don't really have other options that would allow things to continue.

And obviously, if users take years to even notice that something broke, or if we have sane ways to work around the breakage that doesn't make for too much trouble for users (ie "ok, there are a handful of users, and they can use a kernel command line to work around it" kind of things) we've also been a bit less strict.

But no, "that was documented to be broken" (whether it's because the code was in staging or because the man-page said something else) is irrelevant. If staging code is so useful that people end up using it, that means that it's basically regular kernel code with a flag saying

"please clean this up".

The other side of the coin is that people who talk about "API stability" are entirely wrong. API's don't matter either. You can make any changes to an API you like - as long as nobody notices.

Again, the regression rule is not about documentation, not about API's, and not about the phase of the moon.

It's entirely about "we caused problems for user space that used to work".

- From 2017-11-05:

And our regression rule has never been "behavior doesn't change". That would mean that we could never make any changes at all.

For example, we do things like add new error handling etc all the time, which we then sometimes even add tests for in our kselftest directory.

So clearly behavior changes all the time and we don't consider that a regression per se.

The rule for a regression for the kernel is that some real user workflow breaks. Not some test. Not a "look, I used to be able to do X, now I can't".

- From 2018-08-03:

YOU ARE MISSING THE #1 KERNEL RULE.

We do not regress, and we do not regress exactly because you are 100% ↳ wrong.

And the reason you state for your opinion is in fact exactly **WHY** you are wrong.

Your "good reasons" are pure and utter garbage.

The whole point of "we do not regress" is so that people can upgrade the kernel and never have to worry about it.

> Kernel had a bug which has been fixed

That is **ENTIRELY** immaterial.

Guys, whether something was buggy or not DOES NOT MATTER.

Why?

Bugs happen. That's a fact of life. Arguing that "we had to break

something because we were fixing a bug" is completely insane. We fix tens of bugs every single day, thinking that "fixing a bug" means that we can break something is simply NOT TRUE.

So bugs simply aren't even relevant to the discussion. They happen, they get found, they get fixed, and it has nothing to do with "we break users".

Because the only thing that matters IS THE USER.

How hard is that to understand?

Anybody who uses "but it was buggy" as an argument is entirely missing the point. As far as the USER was concerned, it wasn't buggy - it worked for him/her.

Maybe it worked **because** the user had taken the bug into account, maybe it worked because the user didn't notice - again, it doesn't matter. It worked for the user.

Breaking a user workflow for a "bug" is absolutely the WORST reason for breakage you can imagine.

It's basically saying "I took something that worked, and I broke it, but now it's better". Do you not see how f*cking insane that statement is?

And without users, your program is not a program, it's a pointless piece of code that you might as well throw away.

Seriously. This is **why** the #1 rule for kernel development is "we don't break users". Because "I fixed a bug" is absolutely NOT AN ARGUMENT if that bug fix broke a user setup. You actually introduced a MUCH BIGGER bug by "fixing" something that the user clearly didn't even care about.

And dammit, we upgrade the kernel ALL THE TIME without upgrading any other programs at all. It is absolutely required, because flag-days and dependencies are horribly bad.

And it is also required simply because I as a kernel developer do not upgrade random other tools that I don't even care about as I develop the kernel, and I want any of my users to feel safe doing the same time.

So no. Your rule is COMPLETELY wrong. If you cannot upgrade a kernel without upgrading some other random binary, then we have a problem.

- From [2021-06-05](#):

THERE ARE NO VALID ARGUMENTS FOR REGRESSIONS.

Honestly, security people need to understand that "not working" is not a success case of security. It's a failure case.

Yes, "not working" may be secure. But security in that case is **pointless**.

- From 2011-05-06 (1/3):

Binary compatibility is more important.

And if binaries don't use the interface to parse the format (or just parse it wrongly - see the fairly recent example of adding uuid's to /proc/self/mountinfo), then it's a regression.

And regressions get reverted, unless there are security issues or similar that makes us go "Oh Gods, we really have to break things".

I don't understand why this simple logic is so hard for some kernel developers to understand. Reality matters. Your personal wishes matter NOT AT ALL.

If you made an interface that can be used without parsing the interface description, then we're stuck with the interface. Theory simply doesn't matter.

You could help fix the tools, and try to avoid the compatibility issues that way. There aren't that many of them.

From 2011-05-06 (2/3):

it's clearly NOT an internal tracepoint. By definition. It's being used by powertop.

From 2011-05-06 (3/3):

We have programs that use that ABI and thus it's a regression if they ↵
↵ break.

- From 2012-07-06:

> Now this got me wondering if Debian _unstable_ actually qualifies as a
> standard distro userspace.

Oh, if the kernel breaks some standard user space, that counts. Tons of people run Debian unstable

- From 2019-09-15:

One _particularly_ last-minute revert is the top-most commit (ignoring the version change itself) done just before the release, and while it's very annoying, it's perhaps also instructive.

What's instructive about it is that I reverted a commit that wasn't actually buggy. In fact, it was doing exactly what it set out to do, and did it very well. In fact it did it so well that the much improved IO patterns it caused then ended up revealing a user-visible regression due to a real bug in a completely unrelated area.

The actual details of that regression are not the reason I point that revert out as instructive, though. It's more that it's an instructive example of what counts as a regression, and what the whole "no regressions" kernel rule means. The reverted commit didn't change any API's, and it didn't introduce any new bugs. But it ended up exposing another problem, and as such caused a kernel upgrade to fail for a user. So it got reverted.

The point here being that we revert based on user-reported behavior, not based on some "it changes the ABI" or "it caused a bug" concept. The problem was really pre-existing, and it just didn't happen to trigger before. The better IO patterns introduced by the change just happened to expose an old bug, and people had grown to depend on the previously benign behavior of that old issue.

And never fear, we'll re-introduce the fix that improved on the IO patterns once we've decided just how to handle the fact that we had a bad interaction with an interface that people had then just happened to rely on incidental behavior for before. It's just that we'll have to hash through how to do that (there are no less than three different patches by three different developers being discussed, and there might be more coming...). In the meantime, I reverted the thing that exposed the problem to users for this release, even if I hope it will be re-introduced (perhaps even backported as a stable patch) once we have consensus about the issue it exposed.

Take-away from the whole thing: it's not about whether you change the kernel-userspace ABI, or fix a bug, or about whether the old code "should never have worked in the first place". It's about whether something breaks existing users' workflow.

Anyway, that was my little aside on the whole regression thing. Since it's that "first rule of kernel programming", I felt it is perhaps worth just bringing it up every once in a while

* Security bugs

Linux kernel developers take security very seriously. As such, we'd like to know when a security bug is found so that it can be fixed and disclosed as quickly as possible. Please report security bugs to the Linux kernel security team.

* Contact

The Linux kernel security team can be contacted by email at <security@kernel.org>. This is a private list of security officers who will help verify the bug report and develop and release a fix. If you already have a fix, please include it with your report, as that can speed up the process considerably. It is possible that the security team will bring in extra help from area maintainers to understand and fix the security vulnerability.

As it is with any bug, the more information provided the easier it will be to diagnose and fix. Please review the procedure outlined in 'Documentation/admin-guide/reporting-issues.rst' if you are unclear about what information is helpful. Any exploit code is very helpful and will not be released without consent from the reporter unless it has already been made public.

Please send plain text emails without attachments where possible. It is much harder to have a context-quoted discussion about a complex issue if all the details are hidden away in attachments. Think of it like a *regular patch submission* (even if you don't have a patch yet): describe the problem and impact, list reproduction steps, and follow it with a proposed fix, all in plain text.

* Disclosure and embargoed information

The security list is not a disclosure channel. For that, see Coordination below.

Once a robust fix has been developed, the release process starts. Fixes for publicly known bugs are released immediately.

Although our preference is to release fixes for publicly undisclosed bugs as soon as they become available, this may be postponed at the request of the reporter or an affected party for up to 7 calendar days from the start of the release process, with an exceptional extension to 14 calendar days if it is agreed that the criticality of the bug requires more time. The only valid reason for deferring the publication of a fix is to accommodate the logistics of QA and large scale rollouts which require release coordination.

While embargoed information may be shared with trusted individuals in order to develop a fix, such information will not be published alongside the fix or on any other disclosure channel without the permission of the reporter. This includes but is not limited to the original bug report and followup discussions (if any), exploits, CVE information or the identity of the reporter.

In other words our only interest is in getting bugs fixed. All other information submitted to the security list and any followup discussions of the report are treated confidentially even after the embargo has been lifted, in perpetuity.

* Coordination with other groups

While the kernel security team solely focuses on getting bugs fixed, other groups focus on fixing issues in distros and coordinating disclosure between operating system vendors. Coordination is usually handled by the "linux-distros" mailing list and disclosure by the public "oss-security" mailing list, both of which are closely related and presented in the linux-distros wiki: <<https://oss-security.openwall.org/wiki/mailling-lists/distros>>

Please note that the respective policies and rules are different since the 3 lists pursue different goals. Coordinating between the kernel security team and other teams is difficult since for the kernel security team occasional embargoes (as subject to a maximum allowed number of days) start from the availability of a fix, while for "linux-distros" they start from the initial post to the list regardless of the availability of a fix.

As such, the kernel security team strongly recommends that as a reporter of a potential security issue you DO NOT contact the "linux-distros" mailing list UNTIL a fix is accepted by the affected code's maintainers and you have read the distros wiki page above and you fully understand the requirements that contacting "linux-distros" will impose on you and the kernel community. This also means that in general it doesn't make sense to Cc: both lists at once, except maybe for coordination if and while an accepted fix has not yet been merged. In other words, until a fix is accepted do not Cc: "linux-distros", and after it's merged do not Cc: the kernel security team.

* CVE assignment

The security team does not assign CVEs, nor do we require them for reports or fixes, as this can needlessly complicate the process and may delay the bug handling. If a reporter wishes to have a CVE identifier assigned for a confirmed issue, they can contact the *kernel CVE assignment team* to obtain one.

* Non-disclosure agreements

The Linux kernel security team is not a formal body and therefore unable to enter any non-disclosure agreements.

* CVEs

Common Vulnerabilities and Exposure (CVE®) numbers were developed as an unambiguous way to identify, define, and catalog publicly disclosed security vulnerabilities. Over time, their usefulness has declined with regards to the kernel project, and CVE numbers were very often assigned in inappropriate ways and for inappropriate reasons. Because of this, the kernel development community has tended to avoid them. However, the combination of continuing pressure to assign CVEs and other forms of security identifiers, and ongoing abuses by individuals and companies outside of the kernel community has made it clear that the kernel community should have control over those assignments.

The Linux kernel developer team does have the ability to assign CVEs for potential Linux kernel security issues. This assignment is independent of the *normal Linux kernel security bug reporting process*.

A list of all assigned CVEs for the Linux kernel can be found in the archives of the linux-cve mailing list, as seen on <https://lore.kernel.org/linux-cve-announce/>. To get notice of the assigned CVEs, please [subscribe](#) to that mailing list.

* Process

As part of the normal stable release process, kernel changes that are potentially security issues are identified by the developers responsible for CVE number assignments and have CVE numbers automatically assigned to them. These assignments are published on the linux-cve-announce mailing list as announcements on a frequent basis.

Note, due to the layer at which the Linux kernel is in a system, almost any bug might be exploitable to compromise the security of the kernel, but the possibility of exploitation is often not evident when the bug is fixed. Because of this, the CVE assignment team is overly cautious and assign CVE numbers to any bugfix that they identify. This explains the seemingly large number of CVEs that are issued by the Linux kernel team.

If the CVE assignment team misses a specific fix that any user feels should have a CVE assigned to it, please email them at [<cve@kernel.org>](mailto:cve@kernel.org) and the team there will work with you on it. Note that no potential security issues should be sent to this alias, it is ONLY for assignment of CVEs for fixes that are already in released kernel trees. If you feel you have found an unfixed security issue, please follow the [normal Linux kernel security bug reporting process](#).

No CVEs will be automatically assigned for unfixed security issues in the Linux kernel; assignment will only automatically happen after a fix is available and applied to a stable kernel tree, and it will be tracked that way by the git commit id of the original fix. If anyone wishes to have a CVE assigned before an issue is resolved with a commit, please contact the kernel CVE assignment team at [<cve@kernel.org>](mailto:cve@kernel.org) to get an identifier assigned from their batch of reserved identifiers.

No CVEs will be assigned for any issue found in a version of the kernel that is not currently being actively supported by the Stable/LTS kernel team. A list of the currently supported kernel branches can be found at <https://kernel.org/releases.html>

* Disputes of assigned CVEs

The authority to dispute or modify an assigned CVE for a specific kernel change lies solely with the maintainers of the relevant subsystem affected. This principle ensures a high degree of accuracy and accountability in vulnerability reporting. Only those individuals with deep expertise and intimate knowledge of the subsystem can effectively assess the validity and scope of a reported vulnerability and determine its appropriate CVE designation. Any attempt to modify or dispute a CVE outside of this designated authority could lead to confusion, inaccurate reporting, and ultimately, compromised systems.

* Invalid CVEs

If a security issue is found in a Linux kernel that is only supported by a Linux distribution due to the changes that have been made by that distribution, or due to the distribution supporting a kernel version that is no longer one of the kernel.org supported releases, then a CVE can not be assigned by the Linux kernel CVE team, and must be asked for from that Linux distribution itself.

Any CVE that is assigned against the Linux kernel for an actively supported kernel version, by any group other than the kernel assignment CVE team should not be treated as a valid CVE. Please notify the kernel CVE assignment team at <cve@kernel.org> so that they can work to invalidate such entries through the CNA remediation process.

* Applicability of specific CVEs

As the Linux kernel can be used in many different ways, with many different ways of accessing it by external users, or no access at all, the applicability of any specific CVE is up to the user of Linux to determine, it is not up to the CVE assignment team. Please do not contact us to attempt to determine the applicability of any specific CVE.

Also, as the source tree is so large, and any one system only uses a small subset of the source tree, any users of Linux should be aware that large numbers of assigned CVEs are not relevant for their systems.

In short, we do not know your use case, and we do not know what portions of the kernel that you use, so there is no way for us to determine if a specific CVE is relevant for your system.

As always, it is best to take all released kernel changes, as they are tested together in a unified whole by many community members, and not as individual cherry-picked changes. Also note that for many bugs, the solution to the overall problem is not found in a single change, but by the sum of many fixes on top of each other. Ideally CVEs will be assigned to all fixes for all issues, but sometimes we will fail to notice fixes, therefore assume that some changes without a CVE assigned might be relevant to take.

* Embargoed hardware issues

* Scope

Hardware issues which result in security problems are a different category of security bugs than pure software bugs which only affect the Linux kernel.

Hardware issues like Meltdown, Spectre, L1TF etc. must be treated differently because they usually affect all Operating Systems ("OS") and therefore need coordination across different OS vendors, distributions, hardware vendors and other parties. For some of the issues, software mitigations can depend on microcode or firmware updates, which need further coordination.

* Contact

The Linux kernel hardware security team is separate from the regular Linux kernel security team.

The team only handles developing fixes for embargoed hardware security issues. Reports of pure software security bugs in the Linux kernel are not handled by this team and the reporter will be guided to contact the regular Linux kernel security team (*Documentation/admin-guide/*) instead.

The team can be contacted by email at <hardware-security@kernel.org>. This is a private list of security officers who will help you to coordinate a fix according to our documented process.

The list is encrypted and email to the list can be sent by either PGP or S/MIME encrypted and must be signed with the reporter's PGP key or S/MIME certificate. The list's PGP key and S/MIME certificate are available from the following URLs:

- PGP: <https://www.kernel.org/static/files/hardware-security.asc>
- S/MIME: <https://www.kernel.org/static/files/hardware-security.crt>

While hardware security issues are often handled by the affected hardware vendor, we welcome contact from researchers or individuals who have identified a potential hardware flaw.

Hardware security officers

The current team of hardware security officers:

- Linus Torvalds (Linux Foundation Fellow)
- Greg Kroah-Hartman (Linux Foundation Fellow)
- Thomas Gleixner (Linux Foundation Fellow)

Operation of mailing-lists

The encrypted mailing-lists which are used in our process are hosted on Linux Foundation's IT infrastructure. By providing this service, members of Linux Foundation's IT operations personnel technically have the ability to access the embargoed information, but are obliged to confidentiality by their employment contract. Linux Foundation IT personnel are also responsible for operating and managing the rest of kernel.org infrastructure.

The Linux Foundation's current director of IT Project infrastructure is Konstantin Ryabitsev.

* Non-disclosure agreements

The Linux kernel hardware security team is not a formal body and therefore unable to enter into any non-disclosure agreements. The kernel community is aware of the sensitive nature of such issues and offers a Memorandum of Understanding instead.

* Memorandum of Understanding

The Linux kernel community has a deep understanding of the requirement to keep hardware security issues under embargo for coordination between different OS vendors, distributors, hardware vendors and other parties.

The Linux kernel community has successfully handled hardware security issues in the past and has the necessary mechanisms in place to allow community compliant development under embargo restrictions.

The Linux kernel community has a dedicated hardware security team for initial contact, which oversees the process of handling such issues under embargo rules.

The hardware security team identifies the developers (domain experts) who will form the initial response team for a particular issue. The initial response team can bring in further developers (domain experts) to address the issue in the best technical way.

All involved developers pledge to adhere to the embargo rules and to keep the received information confidential. Violation of the pledge will lead to immediate exclusion from the current issue and removal from all related mailing-lists. In addition, the hardware security team will also exclude the offender from future issues. The impact of this consequence is a highly effective deterrent in our community. In case a violation happens the hardware security team will inform the involved parties immediately. If you or anyone becomes aware of a potential violation, please report it immediately to the Hardware security officers.

Process

Due to the globally distributed nature of Linux kernel development, face-to-face meetings are almost impossible to address hardware security issues. Phone conferences are hard to coordinate due to time zones and other factors and should be only used when absolutely necessary. Encrypted email has been proven to be the most effective and secure communication method for these types of issues.

Start of Disclosure

Disclosure starts by contacting the Linux kernel hardware security team by email. This initial contact should contain a description of the problem and a list of any known affected hardware. If your organization builds or distributes the affected hardware, we encourage you to also consider what other hardware could be affected.

The hardware security team will provide an incident-specific encrypted mailing-list which will be used for initial discussion with the reporter, further disclosure, and coordination of fixes.

The hardware security team will provide the disclosing party a list of developers (domain experts) who should be informed initially about the issue after confirming with the developers that they will adhere to this Memorandum of Understanding and the documented process. These developers form the initial response team and will be responsible for handling the issue after initial contact. The hardware security team is supporting the response team, but is not necessarily involved in the mitigation development process.

While individual developers might be covered by a non-disclosure agreement via their employer, they cannot enter individual non-disclosure agreements in their role as Linux kernel develop-

ers. They will, however, agree to adhere to this documented process and the Memorandum of Understanding.

The disclosing party should provide a list of contacts for all other entities who have already been, or should be, informed about the issue. This serves several purposes:

- The list of disclosed entities allows communication across the industry, e.g. other OS vendors, HW vendors, etc.
- The disclosed entities can be contacted to name experts who should participate in the mitigation development.
- If an expert which is required to handle an issue is employed by an listed entity or member of an listed entity, then the response teams can request the disclosure of that expert from that entity. This ensures that the expert is also part of the entity's response team.

Disclosure

The disclosing party provides detailed information to the initial response team via the specific encrypted mailing-list.

From our experience the technical documentation of these issues is usually a sufficient starting point and further technical clarification is best done via email.

Mitigation development

The initial response team sets up an encrypted mailing-list or repurposes an existing one if appropriate.

Using a mailing-list is close to the normal Linux development process and has been successfully used in developing mitigations for various hardware security issues in the past.

The mailing-list operates in the same way as normal Linux development. Patches are posted, discussed and reviewed and if agreed on applied to a non-public git repository which is only accessible to the participating developers via a secure connection. The repository contains the main development branch against the mainline kernel and backport branches for stable kernel versions as necessary.

The initial response team will identify further experts from the Linux kernel developer community as needed. Bringing in experts can happen at any time of the development process and needs to be handled in a timely manner.

If an expert is employed by or member of an entity on the disclosure list provided by the disclosing party, then participation will be requested from the relevant entity.

If not, then the disclosing party will be informed about the experts participation. The experts are covered by the Memorandum of Understanding and the disclosing party is requested to acknowledge the participation. In case that the disclosing party has a compelling reason to object, then this objection has to be raised within five work days and resolved with the incident team immediately. If the disclosing party does not react within five work days this is taken as silent acknowledgement.

After acknowledgement or resolution of an objection the expert is disclosed by the incident team and brought into the development process.

List participants may not communicate about the issue outside of the private mailing list. List participants may not use any shared resources (e.g. employer build farms, CI systems, etc) when working on patches.

Coordinated release

The involved parties will negotiate the date and time where the embargo ends. At that point the prepared mitigations are integrated into the relevant kernel trees and published. There is no pre-notification process: fixes are published in public and available to everyone at the same time.

While we understand that hardware security issues need coordinated embargo time, the embargo time should be constrained to the minimum time which is required for all involved parties to develop, test and prepare the mitigations. Extending embargo time artificially to meet conference talk dates or other non-technical reasons is creating more work and burden for the involved developers and response teams as the patches need to be kept up to date in order to follow the ongoing upstream kernel development, which might create conflicting changes.

CVE assignment

Neither the hardware security team nor the initial response team assign CVEs, nor are CVEs required for the development process. If CVEs are provided by the disclosing party they can be used for documentation purposes.

* Process ambassadors

For assistance with this process we have established ambassadors in various organizations, who can answer questions about or provide guidance on the reporting process and further handling. Ambassadors are not involved in the disclosure of a particular issue, unless requested by a response team or by an involved disclosed party. The current ambassadors list:

AMD	Tom Lendacky < thomas.lendacky@amd.com >
Ampere	Darren Hart < darren@os.amperecomputing.com >
ARM	Catalin Marinas < catalin.marinas@arm.com >
IBM Power	Anton Blanchard < anton@linux.ibm.com >
IBM Z	Christian Borntraeger < borntraeger@de.ibm.com >
Intel	Tony Luck < tony.luck@intel.com >
Qualcomm	Trilok Soni < tsoni@codeaurora.org >
RISC-V	Palmer Dabbelt < palmer@dabbelt.com >
Samsung	Javier González < javier.gonz@samsung.com >
Microsoft	James Morris < jamorris@linux.microsoft.com >
Xen	Andrew Cooper < andrew.cooper3@citrix.com >
Canonical	John Johansen < john.johansen@canonical.com >
Debian	Ben Hutchings < ben@decadent.org.uk >
Oracle	Konrad Rzeszutek Wilk < konrad.wilk@oracle.com >
Red Hat	Josh Poimboeuf < jpoimboe@redhat.com >
SUSE	Jiri Kosina < jkosina@suse.cz >
Google	Kees Cook < keescook@chromium.org >
LLVM	Nick Desaulniers < ndesaulniers@google.com >

If you want your organization to be added to the ambassadors list, please contact the hardware security team. The nominated ambassador has to understand and support our process fully and is ideally well connected in the Linux kernel community.

*** Encrypted mailing-lists**

We use encrypted mailing-lists for communication. The operating principle of these lists is that email sent to the list is encrypted either with the list's PGP key or with the list's S/MIME certificate. The mailing-list software decrypts the email and re-encrypts it individually for each subscriber with the subscriber's PGP key or S/MIME certificate. Details about the mailing-list software and the setup which is used to ensure the security of the lists and protection of the data can be found here: <https://korg.wiki.kernel.org/userdoc/remail>.

List keys

For initial contact see [Contact](#). For incident specific mailing-lists the key and S/MIME certificate are conveyed to the subscribers by email sent from the specific list.

Subscription to incident specific lists

Subscription is handled by the response teams. Disclosed parties who want to participate in the communication send a list of potential subscribers to the response team so the response team can validate subscription requests.

Each subscriber needs to send a subscription request to the response team by email. The email must be signed with the subscriber's PGP key or S/MIME certificate. If a PGP key is used, it must be available from a public key server and is ideally connected to the Linux kernel's PGP web of trust. See also: <https://www.kernel.org/signature.html>.

The response team verifies that the subscriber request is valid and adds the subscriber to the list. After subscription the subscriber will receive email from the mailing-list which is signed either with the list's PGP key or the list's S/MIME certificate. The subscriber's email client can extract the PGP key or the S/MIME certificate from the signature so the subscriber can send encrypted email to the list.

MAINTAINER INFORMATION

How to find the people who will accept your patches.

* Subsystem and maintainer tree specific development process notes

The purpose of this document is to provide subsystem specific information which is supplementary to the general development process handbook *Documentation/process*.

Contents:

* Networking subsystem (netdev)

tl;dr

- designate your patch to a tree - [PATCH net] or [PATCH net-next]
- for fixes the Fixes: tag is required, regardless of the tree
- don't post large series (> 15 patches), break them up
- don't repost your patches within one 24h period
- reverse xmas tree

netdev

netdev is a mailing list for all network-related Linux stuff. This includes anything found under net/ (i.e. core code like IPv6) and drivers/net (i.e. hardware specific drivers) in the Linux source tree.

Note that some subsystems (e.g. wireless drivers) which have a high volume of traffic have their own specific mailing lists and trees.

The netdev list is managed (like many other Linux mailing lists) through VGER (<http://vger.kernel.org/>) with archives available at <https://lore.kernel.org/netdev/>

Aside from subsystems like those mentioned above, all network-related Linux development (i.e. RFC, review, comments, etc.) takes place on netdev.

Development cycle

Here is a bit of background information on the cadence of Linux development. Each new release starts off with a two week "merge window" where the main maintainers feed their new stuff to Linus for merging into the mainline tree. After the two weeks, the merge window is closed, and it is called/tagged - rc1. No new features get mainlined after this -- only fixes to the rc1 content are expected. After roughly a week of collecting fixes to the rc1 content, rc2 is released. This repeats on a roughly weekly basis until rc7 (typically; sometimes rc6 if things are quiet, or rc8 if things are in a state of churn), and a week after the last vX.Y-rcN was done, the official vX.Y is released.

To find out where we are now in the cycle - load the mainline (Linus) page here:

<https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git>

and note the top of the "tags" section. If it is rc1, it is early in the dev cycle. If it was tagged rc7 a week ago, then a release is probably imminent. If the most recent tag is a final release tag (without an - rcN suffix) - we are most likely in a merge window and net-next is closed.

git trees and patch flow

There are two networking trees (git repositories) in play. Both are driven by David Miller, the main network maintainer. There is the net tree, and the net-next tree. As you can probably guess from the names, the net tree is for fixes to existing code already in the mainline tree from Linus, and net-next is where the new code goes for the future release. You can find the trees here:

- <https://git.kernel.org/pub/scm/linux/kernel/git/netdev/net.git>
- <https://git.kernel.org/pub/scm/linux/kernel/git/netdev/net-next.git>

Relating that to kernel development: At the beginning of the 2-week merge window, the net-next tree will be closed - no new changes/features. The accumulated new content of the past ~10 weeks will be passed onto mainline/Linus via a pull request for vX.Y -- at the same time, the net tree will start accumulating fixes for this pulled content relating to vX.Y

An announcement indicating when net-next has been closed is usually sent to netdev, but knowing the above, you can predict that in advance.

Warning: Do not send new net-next content to netdev during the period during which net-next tree is closed.

RFC patches sent for review only are obviously welcome at any time (use --subject-prefix='RFC net-next' with git format-patch).

Shortly after the two weeks have passed (and vX.Y-rc1 is released), the tree for net-next re-opens to collect content for the next (vX.Y+1) release.

If you aren't subscribed to netdev and/or are simply unsure if net-next has re-opened yet, simply check the net-next git repository link above for any new networking-related commits. You may also check the following website for the current status:

<https://netdev.bots.linux.dev/net-next.html>

The net tree continues to collect fixes for the vX.Y content, and is fed back to Linus at regular (~weekly) intervals. Meaning that the focus for net is on stabilization and bug fixes.

Finally, the vX.Y gets released, and the whole cycle starts over.

netdev patch review

Patch status

Status of a patch can be checked by looking at the main patchwork queue for netdev:

<https://patchwork.kernel.org/project/netdevbpf/list/>

The "State" field will tell you exactly where things are at with your patch:

Patch state	Description
New, Under review	pending review, patch is in the maintainer's queue for review; the two states are used interchangeably (depending on the exact co-maintainer handling patchwork at the time)
Accepted	patch was applied to the appropriate networking tree, this is usually set automatically by the pw-bot
Needs ACK	waiting for an ack from an area expert or testing
Changes requested	patch has not passed the review, new revision is expected with appropriate code and commit message changes
Rejected	patch has been rejected and new revision is not expected
Not applicable	patch is expected to be applied outside of the networking subsystem
Awaiting upstream	patch should be reviewed and handled by appropriate sub-maintainer, who will send it on to the networking trees; patches set to Awaiting upstream in netdev's patchwork will usually remain in this state, whether the sub-maintainer requested changes, accepted or rejected the patch
Deferred	patch needs to be reposted later, usually due to dependency or because it was posted for a closed tree
Superseded	new version of the patch was posted, usually set by the pw-bot
RFC	not to be applied, usually not in maintainer's review queue, pw-bot can automatically set patches to this state based on subject tags

Patches are indexed by the Message-ID header of the emails which carried them so if you have trouble finding your patch append the value of Message-ID to the URL above.

Updating patch status

Contributors and reviewers do not have the permissions to update patch state directly in patchwork. Patchwork doesn't expose much information about the history of the state of patches, therefore having multiple people update the state leads to confusion.

Instead of delegating patchwork permissions netdev uses a simple mail bot which looks for special commands/lines within the emails sent to the mailing list. For example to mark a series as Changes Requested one needs to send the following line anywhere in the email thread:

`pw-bot: changes-requested`

As a result the bot will set the entire series to Changes Requested. This may be useful when author discovers a bug in their own series and wants to prevent it from getting applied.

The use of the bot is entirely optional, if in doubt ignore its existence completely. Maintainers will classify and update the state of the patches themselves. No email should ever be sent to the list with the main purpose of communicating with the bot, the bot commands should be seen as metadata.

The use of the bot is restricted to authors of the patches (the From: header on patch submission and command must match!), maintainers of the modified code according to the MAINTAINERS file (again, From: must match the MAINTAINERS entry) and a handful of senior reviewers.

Bot records its activity here:

<https://netdev.bots.linux.dev/pw-bot.html>

Review timelines

Generally speaking, the patches get triaged quickly (in less than 48h). But be patient, if your patch is active in patchwork (i.e. it's listed on the project's patch list) the chances it was missed are close to zero.

The high volume of development on netdev makes reviewers move on from discussions relatively quickly. New comments and replies are very unlikely to arrive after a week of silence. If a patch is no longer active in patchwork and the thread went idle for more than a week - clarify the next steps and/or post the next version.

For RFC postings specifically, if nobody responded in a week - reviewers either missed the posting or have no strong opinions. If the code is ready, repost as a PATCH.

Emails saying just "ping" or "bump" are considered rude. If you can't figure out the status of the patch from patchwork or where the discussion has landed - describe your best guess and ask if it's correct. For example:

```
I don't understand what the next steps are. Person X seems to be unhappy
with A, should I do B and repost the patches?
```

Changes requested

Patches *marked* as Changes Requested need to be revised. The new version should come with a change log, preferably including links to previous postings, for example:

```
[PATCH net-next v3] net: make cows go moo
```

Even users who don't drink milk appreciate hearing the cows go "moo".

The amount of mooing will depend on packet rate so should match the diurnal cycle quite well.

Signed-of-by: Joe Defarmer <joe@barn.org>

```

---
v3:
  - add a note about time-of-day mooing fluctuation to the commit message
v2: https://lore.kernel.org/netdev/123themessageid@barn.org/
  - fix missing argument in kernel doc for netif_is_bovine()
  - fix memory leak in netdev_register_cow()
v1: https://lore.kernel.org/netdev/456getstheclicks@barn.org/

```

The commit message should be revised to answer any questions reviewers had to ask in previous discussions. Occasionally the update of the commit message will be the only change in the new version.

Partial resends

Please always resend the entire patch series and make sure you do number your patches such that it is clear this is the latest and greatest set of patches that can be applied. Do not try to resend just the patches which changed.

Handling misapplied patches

Occasionally a patch series gets applied before receiving critical feedback, or the wrong version of a series gets applied.

Making the patch disappear once it is pushed out is not possible, the commit history in netdev trees is immutable. Please send incremental versions on top of what has been merged in order to fix the patches the way they would look like if your latest patch series was to be merged.

In cases where full revert is needed the revert has to be submitted as a patch to the list with a commit message explaining the technical problems with the reverted commit. Reverts should be used as a last resort, when original change is completely wrong; incremental fixes are preferred.

Stable tree

While it used to be the case that netdev submissions were not supposed to carry explicit CC: stable@vger.kernel.org tags that is no longer the case today. Please follow the standard stable rules in [Documentation/process/stable-kernel-rules.rst](#), and make sure you include appropriate Fixes tags!

Security fixes

Do not email netdev maintainers directly if you think you discovered a bug that might have possible security implications. The current netdev maintainer has consistently requested that people use the mailing lists and not reach out directly. If you aren't OK with that, then perhaps consider mailing security@kernel.org or reading about <http://oss-security.openwall.org/wiki/mailling-lists/distros> as possible alternative mechanisms.

Co-posting changes to user space components

User space code exercising kernel features should be posted alongside kernel patches. This gives reviewers a chance to see how any new interface is used and how well it works.

When user space tools reside in the kernel repo itself all changes should generally come as one series. If series becomes too large or the user space project is not reviewed on netdev include a link to a public repo where user space patches can be seen.

In case user space tooling lives in a separate repository but is reviewed on netdev (e.g. patches to iproute2 tools) kernel and user space patches should form separate series (threads) when posted to the mailing list, e.g.:

```
[PATCH net-next 0/3] net: some feature cover letter
└─ [PATCH net-next 1/3] net: some feature prep
└─ [PATCH net-next 2/3] net: some feature do it
└─ [PATCH net-next 3/3] selftest: net: some feature

[PATCH iproute2-next] ip: add support for some feature
```

Posting as one thread is discouraged because it confuses patchwork (as of patchwork 2.2.2).

Preparing changes

Attention to detail is important. Re-read your own work as if you were the reviewer. You can start with using `checkpatch.pl`, perhaps even with the `--strict` flag. But do not be mindlessly robotic in doing so. If your change is a bug fix, make sure your commit log indicates the end-user visible symptom, the underlying reason as to why it happens, and then if necessary, explain why the fix proposed is the best way to get things done. Don't mangle whitespace, and as is common, don't mis-indent function arguments that span multiple lines. If it is your first patch, mail it to yourself so you can test apply it to an unpatched tree to confirm infrastructure didn't mangle it.

Finally, go back and read [Documentation/process/submitting-patches.rst](#) to be sure you are not repeating some common mistake documented there.

Indicating target tree

To help maintainers and CI bots you should explicitly mark which tree your patch is targeting. Assuming that you use git, use the prefix flag:

```
git format-patch --subject-prefix='PATCH net-next' start..finish
```

Use `net` instead of `net-next` (always lower case) in the above for bug-fix net content.

Dividing work into patches

Put yourself in the shoes of the reviewer. Each patch is read separately and therefore should constitute a comprehensible step towards your stated goal.

Avoid sending series longer than 15 patches. Larger series takes longer to review as reviewers will defer looking at it until they find a large chunk of time. A small series can be reviewed in a short time, so Maintainers just do it. As a result, a sequence of smaller series gets merged quicker and with better review coverage. Re-posting large series also increases the mailing list traffic.

Multi-line comments

Comment style convention is slightly different for networking and most of the tree. Instead of this:

```
/*
 * foobar blah blah blah
 * another line of text
 */
```

it is requested that you make it look like this:

```
/* foobar blah blah blah
 * another line of text
 */
```

Local variable ordering ("reverse xmas tree", "RCS")

Netdev has a convention for ordering local variables in functions. Order the variable declaration lines longest to shortest, e.g.:

```
struct scatterlist *sg;
struct sk_buff *skb;
int err, i;
```

If there are dependencies between the variables preventing the ordering move the initialization out of line.

Format precedence

When working in existing code which uses nonstandard formatting make your code follow the most recent guidelines, so that eventually all code in the domain of netdev is in the preferred format.

Resending after review

Allow at least 24 hours to pass between postings. This will ensure reviewers from all geographical locations have a chance to chime in. Do not wait too long (weeks) between postings either as it will make it harder for reviewers to recall all the context.

Make sure you address all the feedback in your new posting. Do not post a new version of the code if the discussion about the previous version is still ongoing, unless directly instructed by a reviewer.

The new version of patches should be posted as a separate thread, not as a reply to the previous posting. Change log should include a link to the previous posting (see *Changes requested*).

Testing

Expected level of testing

At the very minimum your changes must survive an `allyesconfig` and an `allmodconfig` build with `W=1` set without new warnings or failures.

Ideally you will have done run-time testing specific to your change, and the patch series contains a set of kernel selftest for `tools/testing/selftests/net` or using the KUnit framework.

You are expected to test your changes on top of the relevant networking tree (`net` or `net-next`) and not e.g. a stable tree or `linux-next`.

patchwork checks

Checks in patchwork are mostly simple wrappers around existing kernel scripts, the sources are available at:

<https://github.com/linux-netdev/nipa/tree/master/tests>

Do not post your patches just to run them through the checks. You must ensure that your patches are ready by testing them locally before posting to the mailing list. The patchwork build bot instance gets overloaded very easily and `netdev@vger` really doesn't need more traffic if we can help it.

netdevsim

`netdevsim` is a test driver which can be used to exercise driver configuration APIs without requiring capable hardware. Mock-ups and tests based on `netdevsim` are strongly encouraged when adding new APIs, but `netdevsim` in itself is **not** considered a use case/user. You must also implement the new APIs in a real driver.

We give no guarantees that `netdevsim` won't change in the future in a way which would break what would normally be considered uAPI.

`netdevsim` is reserved for use by upstream tests only, so any new `netdevsim` features must be accompanied by selftests under `tools/testing/selftests/`.

Reviewer guidance

Reviewing other people's patches on the list is highly encouraged, regardless of the level of expertise. For general guidance and helpful tips please see [Reviewing patches](#).

It's safe to assume that netdev maintainers know the community and the level of expertise of the reviewers. The reviewers should not be concerned about their comments impeding or derailing the patch flow.

Less experienced reviewers are highly encouraged to do more in-depth review of submissions and not focus exclusively on trivial or subjective matters like code formatting, tags etc.

Testimonials / feedback

Some companies use peer feedback in employee performance reviews. Please feel free to request feedback from netdev maintainers, especially if you spend significant amount of time reviewing code and go out of your way to improve shared infrastructure.

The feedback must be requested by you, the contributor, and will always be shared with you (even if you request for it to be submitted to your manager).

* SoC Subsystem

Overview

The SoC subsystem is a place of aggregation for SoC-specific code. The main components of the subsystem are:

- devicetrees for 32- & 64-bit ARM and RISC-V
- 32-bit ARM board files (arch/arm/mach*)
- 32- & 64-bit ARM defconfigs
- SoC-specific drivers across architectures, in particular for 32- & 64-bit ARM, RISC-V and Loongarch

These "SoC-specific drivers" do not include clock, GPIO etc drivers that have other top-level maintainers. The drivers/soc/ directory is generally meant for kernel-internal drivers that are used by other drivers to provide SoC- specific functionality like identifying an SoC revision or interfacing with power domains.

The SoC subsystem also serves as an intermediate location for changes to drivers/bus, drivers/firmware, drivers/reset and drivers/memory. The addition of new platforms, or the removal of existing ones, often go through the SoC tree as a dedicated branch covering multiple subsystems.

The main SoC tree is housed on git.kernel.org:

<https://git.kernel.org/pub/scm/linux/kernel/git/soc/soc.git/>

Clearly this is quite a wide range of topics, which no one person, or even small group of people are capable of maintaining. Instead, the SoC subsystem is comprised of many submaintainers, each taking care of individual platforms and driver subdirectories. In this regard, "platform" usually refers to a series of SoCs from a given vendor, for example, Nvidia's series of Tegra SoCs. Many submaintainers operate on a vendor level, responsible for multiple product lines.

For several reasons, including acquisitions/different business units in a company, things vary significantly here. The various submaintainers are documented in the MAINTAINERS file.

Most of these submaintainers have their own trees where they stage patches, sending pull requests to the main SoC tree. These trees are usually, but not always, listed in MAINTAINERS. The main SoC maintainers can be reached via the alias soc@kernel.org if there is no platform-specific maintainer, or if they are unresponsive.

What the SoC tree is not, however, is a location for architecture-specific code changes. Each architecture has its own maintainers that are responsible for architectural details, CPU errata and the like.

Information for (new) Submaintainers

As new platforms spring up, they often bring with them new submaintainers, many of whom work for the silicon vendor, and may not be familiar with the process.

Devicetree ABI Stability

Perhaps one of the most important things to highlight is that dt-bindings document the ABI between the devicetree and the kernel. Please read Documentation/devicetree/bindings/ABI.rst.

If changes are being made to a devicetree that are incompatible with old kernels, the devicetree patch should not be applied until the driver is, or an appropriate time later. Most importantly, any incompatible changes should be clearly pointed out in the patch description and pull request, along with the expected impact on existing users, such as bootloaders or other operating systems.

Driver Branch Dependencies

A common problem is synchronizing changes between device drivers and devicetree files. Even if a change is compatible in both directions, this may require coordinating how the changes get merged through different maintainer trees.

Usually the branch that includes a driver change will also include the corresponding change to the devicetree binding description, to ensure they are in fact compatible. This means that the devicetree branch can end up causing warnings in the "make dtbs_check" step. If a devicetree change depends on missing additions to a header file in include/dt-bindings/, it will fail the "make dtbs" step and not get merged.

There are multiple ways to deal with this:

- Avoid defining custom macros in include/dt-bindings/ for hardware constants that can be derived from a datasheet -- binding macros in header files should only be used as a last resort if there is no natural way to define a binding
- Use literal values in the devicetree file in place of macros even when a header is required, and change them to the named representation in a following release
- Defer the devicetree changes to a release after the binding and driver have already been merged

- Change the bindings in a shared immutable branch that is used as the base for both the driver change and the devicetree changes
- Add duplicate defines in the devicetree file guarded by an `#ifndef` section, removing them in a later release

Devicetree Naming Convention

The general naming scheme for devicetree files is as follows. The aspects of a platform that are set at the SoC level, like CPU cores, are contained in a file named `$soc.dtsi`, for example, `jh7100.dtsi`. Integration details, that will vary from board to board, are described in `$soc-$board.dts`. An example of this is `jh7100-beaglev-starlight.dts`. Often many boards are variations on a theme, and frequently there are intermediate files, such as `jh7100-common.dtsi`, which sit between the `$soc.dtsi` and `$soc-$board.dts` files, containing the descriptions of common hardware.

Some platforms also have System on Modules, containing an SoC, which are then integrated into several different boards. For these platforms, `$soc-$som.dtsi` and `$soc-$som-$board.dts` are typical.

Directories are usually named after the vendor of the SoC at the time of its inclusion, leading to some historical directory names in the tree.

Validating Devicetree Files

`make dtbs_check` can be used to validate that devicetree files are compliant with the dt-bindings that describe the ABI. Please read the section “Running checks” of Documentation/devicetree/bindings/writing-schema.rst for more information on the validation of devicetrees.

For new platforms, or additions to existing ones, `make dtbs_check` should not add any new warnings. For RISC-V and Samsung SoC, `make dtbs_check W=1` is required to not add any new warnings. If in any doubt about a devicetree change, reach out to the devicetree maintainers.

Branches and Pull Requests

Just as the main SoC tree has several branches, it is expected that submaintainers will do the same. Driver, defconfig and devicetree changes should all be split into separate branches and appear in separate pull requests to the SoC maintainers. Each branch should be usable by itself and avoid regressions that originate from dependencies on other branches.

Small sets of patches can also be sent as separate emails to soc@kernel.org, grouped into the same categories.

If changes do not fit into the normal patterns, there can be additional top-level branches, e.g. for a treewide rework, or the addition of new SoC platforms including dts files and drivers.

Branches with a lot of changes can benefit from getting split up into separate topics branches, even if they end up getting merged into the same branch of the SoC tree. An example here would be one branch for devicetree warning fixes, one for a rework and one for newly added boards.

Another common way to split up changes is to send an early pull request with the majority of the changes at some point between rc1 and rc4, following up with one or more smaller pull requests towards the end of the cycle that can add late changes or address problems identified while testing the first set.

While there is no cut-off time for late pull requests, it helps to only send small branches as time gets closer to the merge window.

Pull requests for bugfixes for the current release can be sent at any time, but again having multiple smaller branches is better than trying to combine too many patches into one pull request.

The subject line of a pull request should begin with “[GIT PULL]” and made using a signed tag, rather than a branch. This tag should contain a short description summarising the changes in the pull request. For more detail on sending pull requests, please see [Documentation/maintainer/pull-requests.rst](#).

* SoC Platforms with DTS Compliance Requirements

Overview

SoC platforms or subarchitectures should follow all the rules from [SoC Subsystem](#). This document referenced in MAINTAINERS impose additional requirements listed below.

Strict DTS DT Schema and dtc Compliance

No changes to the SoC platform Devicetree sources (DTS files) should introduce new make dtbs_check W=1 warnings. Warnings in a new board DTS, which are results of issues in an included DTSI file, are considered existing, not new warnings. The platform maintainers have automation in place which should point out any new warnings.

If a commit introducing new warnings gets accepted somehow, the resulting issues shall be fixed in reasonable time (e.g. within one release) or the commit reverted.

* The tip tree handbook

What is the tip tree?

The tip tree is a collection of several subsystems and areas of development. The tip tree is both a direct development tree and a aggregation tree for several sub-maintainer trees. The tip tree gitweb URL is: <https://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git>

The tip tree contains the following subsystems:

- **x86 architecture**

The x86 architecture development takes place in the tip tree except for the x86 KVM and XEN specific parts which are maintained in the corresponding subsystems and routed directly to mainline from there. It's still good practice to Cc the x86 maintainers on x86-specific KVM and XEN patches.

Some x86 subsystems have their own maintainers in addition to the overall x86 maintainers. Please Cc the overall x86 maintainers on patches touching files in arch/x86 even when they are not called out by the MAINTAINER file.

Note, that `x86@kernel.org` is not a mailing list. It is merely a mail alias which distributes mails to the x86 top-level maintainer team. Please always Cc the Linux Kernel mailing list (LKML) `linux-kernel@vger.kernel.org`, otherwise your mail ends up only in the private inboxes of the maintainers.

- **Scheduler**

Scheduler development takes place in the -tip tree, in the sched/core branch - with occasional sub-topic trees for work-in-progress patch-sets.

- **Locking and atomics**

Locking development (including atomics and other synchronization primitives that are connected to locking) takes place in the -tip tree, in the locking/core branch - with occasional sub-topic trees for work-in-progress patch-sets.

- **Generic interrupt subsystem and interrupt chip drivers:**

- interrupt core development happens in the irq/core branch
- interrupt chip driver development also happens in the irq/core branch, but the patches are usually applied in a separate maintainer tree and then aggregated into irq/core

- **Time, timers, timekeeping, NOHZ and related chip drivers:**

- timekeeping, clocksource core, NTP and alarmtimer development happens in the timers/core branch, but patches are usually applied in a separate maintainer tree and then aggregated into timers/core
- clocksource/event driver development happens in the timers/core branch, but patches are mostly applied in a separate maintainer tree and then aggregated into timers/core

- **Performance counters core, architecture support and tooling:**

- perf core and architecture support development happens in the perf/core branch
- perf tooling development happens in the perf tools maintainer tree and is aggregated into the tip tree.

- **CPU hotplug core**

- **RAS core**

Mostly x86-specific RAS patches are collected in the tip ras/core branch.

- **EFI core**

EFI development in the efi git tree. The collected patches are aggregated in the tip efi/core branch.

- **RCU**

RCU development happens in the linux-rcu tree. The resulting changes are aggregated into the tip core/rcu branch.

- **Various core code components:**

- debugobjects
- objtool
- random bits and pieces

Patch submission notes

Selecting the tree/branch

In general, development against the head of the tip tree master branch is fine, but for the subsystems which are maintained separately, have their own git tree and are only aggregated into the tip tree, development should take place against the relevant subsystem tree or branch.

Bug fixes which target mainline should always be applicable against the mainline kernel tree. Potential conflicts against changes which are already queued in the tip tree are handled by the maintainers.

Patch subject

The tip tree preferred format for patch subject prefixes is 'subsys/component:', e.g. 'x86/apic:', 'x86/mm/fault:', 'sched/fair:', 'genirq/core:'. Please do not use file names or complete file paths as prefix. 'git log path/to/file' should give you a reasonable hint in most cases.

The condensed patch description in the subject line should start with a uppercase letter and should be written in imperative tone.

Changelog

The general rules about changelogs in the *Submitting patches guide*, apply.

The tip tree maintainers set value on following these rules, especially on the request to write changelogs in imperative mood and not impersonating code or the execution of it. This is not just a whim of the maintainers. Changelogs written in abstract words are more precise and tend to be less confusing than those written in the form of novels.

It's also useful to structure the changelog into several paragraphs and not lump everything together into a single one. A good structure is to explain the context, the problem and the solution in separate paragraphs and this order.

Examples for illustration:

Example 1:

```
x86/intel_rdt/mbm: Fix MBM overflow handler during hot cpu
```

```
When a CPU is dying, we cancel the worker and schedule a new worker on
↪a
different CPU on the same domain. But if the timer is already about to
expire (say 0.99s) then we essentially double the interval.
```

```
We modify the hot cpu handling to cancel the delayed work on the dying
cpu and run the worker immediately on a different cpu in same domain.
↪We
donot flush the worker because the MBM overflow worker reschedules the
worker on same CPU and scans the domain->cpu_mask to get the domain
pointer.
```

Improved version:

x86/intel_rdt/mbm: Fix MBM overflow handler during CPU hotplug

When a CPU is dying, the overflow worker is canceled and rescheduled on a
 ↪ different CPU in the same domain. But if the timer is already about to
 expire this essentially doubles the interval which might result in a non
 ↪ detected overflow.

Cancel the overflow worker and reschedule it immediately on a different CPU
 ↪ in the same domain. The work could be flushed as well, but that would
 reschedule it on the same CPU.

Example 2:

time: POSIX CPU timers: Ensure that variable is initialized

If `cpu_timer_sample_group` returns `-EINVAL`, it will not have written into
 ↪ `*sample`. Checking for `cpu_timer_sample_group`'s return value precludes the
 ↪ potential use of an uninitialized value of `now` in the following block.
 Given an invalid `clock_idx`, the previous code could otherwise overwrite
`*oldval` in an undefined manner. This is now prevented. We also exploit
 short-circuiting of `&&` to sample the timer only if the result will
 actually be used to update `*oldval`.

Improved version:

posix-cpu-timers: Make `set_process_cpu_timer()` more robust

Because the return value of `cpu_timer_sample_group()` is not checked,
 compilers and static checkers can legitimately warn about a potential use
 ↪ of the uninitialized variable `'now'`. This is not a runtime issue as all
 call sites hand in valid clock ids.

Also `cpu_timer_sample_group()` is invoked unconditionally even when the
 result is not used because `*oldval` is `NULL`.

Make the invocation conditional and check the return value.

Example 3:

The entity can also be used for other purposes.

Let's rename it to be more generic.

Improved version:

The entity can also be used for other purposes.

Rename it to be more generic.

For complex scenarios, especially race conditions and memory ordering issues, it is valuable to depict the scenario with a table which shows the parallelism and the temporal order of events. Here is an example:

CPU0	CPU1
free_irq(X)	interrupt X
	spin_lock(desc->lock)
	wake_irq_thread()
	spin_unlock(desc->lock)
spin_lock(desc->lock)	
remove_action()	
shutdown_irq()	
release_resources()	thread_handler()
spin_unlock(desc->lock)	access released resources.
	^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^^
synchronize_irq()	

Lockdep provides similar useful output to depict a possible deadlock scenario:

CPU0	CPU1
rtmutex_lock(&rcu->rt_mutex)	
spin_lock(&rcu->rt_mutex.wait_lock)	
	local_irq_disable()
	spin_lock(&timer->it_lock)
	spin_lock(&rcu->mutex.wait_lock)
--> Interrupt	
spin_lock(&timer->it_lock)	

Function references in changelogs

When a function is mentioned in the changelog, either the text body or the subject line, please use the format 'function_name()'. Omitting the brackets after the function name can be ambiguous:

Subject: subsystem/component: Make reservation_count static

reservation_count is only used in reservation_stats. Make it static.

The variant with brackets is more precise:

Subject: subsystem/component: Make reservation_count() static

reservation_count() is only called from reservation_stats(). Make it static.

Backtraces in changelogs

See *Backtraces in commit messages*.

Ordering of commit tags

To have a uniform view of the commit tags, the tip maintainers use the following tag ordering scheme:

- Fixes: 12char-SHA1 ("sub/sys: Original subject line")

A Fixes tag should be added even for changes which do not need to be backported to stable kernels, i.e. when addressing a recently introduced issue which only affects tip or the current head of mainline. These tags are helpful to identify the original commit and are much more valuable than prominently mentioning the commit which introduced a problem in the text of the changelog itself because they can be automatically extracted.

The following example illustrates the difference:

Commit

```
abcdef012345678 ("x86/xxx: Replace foo with bar")
```

left an unused instance of variable foo around. Remove it.

Signed-off-by: J.Dev <j.dev@mail>

Please say instead:

The recent replacement of foo with bar left an unused instance of variable foo around. Remove it.

Fixes: abcdef012345678 ("x86/xxx: Replace foo with bar")

Signed-off-by: J.Dev <j.dev@mail>

The latter puts the information about the patch into the focus and amends it with the reference to the commit which introduced the issue rather than putting the focus on the original commit in the first place.

- Reported-by: Reporter <reporter@mail>
- Originally-by: Original author <original-author@mail>
- Suggested-by: Suggester <suggester@mail>
- Co-developed-by: Co-author <co-author@mail>

Signed-off: Co-author <co-author@mail>

Note, that Co-developed-by and Signed-off-by of the co-author(s) must come in pairs.

- Signed-off-by: Author <author@mail>

The first Signed-off-by (SOB) after the last Co-developed-by/SOB pair is the author SOB, i.e. the person flagged as author by git.

- Signed-off-by: Patch handler <handler@mail>

SOBs after the author SOB are from people handling and transporting the patch, but were not involved in development. SOB chains should reflect the **real** route a patch took as it was propagated to us, with the first SOB entry signalling primary authorship of a single author. Acks should be given as Acked-by lines and review approvals as Reviewed-by lines.

If the handler made modifications to the patch or the changelog, then this should be mentioned **after** the changelog text and **above** all commit tags in the following format:

```
... changelog text ends.  
  
[ handler: Replaced foo by bar and updated changelog ]  
  
First-tag: .....
```

Note the two empty new lines which separate the changelog text and the commit tags from that notice.

If a patch is sent to the mailing list by a handler then the author has to be noted in the first line of the changelog with:

```
From: Author <author@mail>  
  
Changelog text starts here....
```

so the authorship is preserved. The 'From:' line has to be followed by a empty newline. If that 'From:' line is missing, then the patch would be attributed to the person who sent (transported, handled) it. The 'From:' line is automatically removed when the patch is applied and does not show up in the final git changelog. It merely affects the authorship information of the resulting Git commit.

- Tested-by: Tester <tester@mail>
- Reviewed-by: Reviewer <reviewer@mail>
- Acked-by: Acker <acker@mail>
- Cc: cc-ed-person <person@mail>

If the patch should be backported to stable, then please add a 'Cc: stable@vger.kernel.org' tag, but do not Cc stable when sending your mail.

- Link: <https://link/to/information>

For referring to an email on LKML or other kernel mailing lists, please use the lore.kernel.org redirector URL:

```
https://lore.kernel.org/r/email-message@id
```

The kernel.org redirector is considered a stable URL, unlike other email archives.

Maintainers will add a Link tag referencing the email of the patch submission when they apply a patch to the tip tree. This tag is useful for later reference and is also used for commit notifications.

Please do not use combined tags, e.g. Reported-and-tested-by, as they just complicate automated extraction of tags.

Links to documentation

Providing links to documentation in the changelog is a great help to later debugging and analysis. Unfortunately, URLs often break very quickly because companies restructure their websites frequently. Non-'volatile' exceptions include the Intel SDM and the AMD APM.

Therefore, for 'volatile' documents, please create an entry in the kernel bugzilla <https://bugzilla.kernel.org> and attach a copy of these documents to the bugzilla entry. Finally, provide the URL of the bugzilla entry in the changelog.

Patch resend or reminders

See *Don't get discouraged - or impatient*.

Merge window

Please do not expect large patch series to be handled during the merge window or even during the week before. Such patches should be submitted in mergeable state *at least* a week before the merge window opens. Exceptions are made for bug fixes and *sometimes* for small standalone drivers for new hardware or minimally invasive patches for hardware enablement.

During the merge window, the maintainers instead focus on following the upstream changes, fixing merge window fallout, collecting bug fixes, and allowing themselves a breath. Please respect that.

The release candidate -rc1 is the starting point for new patches to be applied which are targeted for the next merge window.

So called `_urgent_` branches will be merged into mainline during the stabilization phase of each release.

Git

The tip maintainers accept git pull requests from maintainers who provide subsystem changes for aggregation in the tip tree.

Pull requests for new patch submissions are usually not accepted and do not replace proper patch submission to the mailing list. The main reason for this is that the review workflow is email based.

If you submit a larger patch series it is helpful to provide a git branch in a private repository which allows interested people to easily pull the series for testing. The usual way to offer this is a git URL in the cover letter of the patch series.

Testing

Code should be tested before submitting to the tip maintainers. Anything other than minor changes should be built, booted and tested with comprehensive (and heavyweight) kernel debugging options enabled.

These debugging options can be found in `kernel/configs/x86_debug.config` and can be added to an existing kernel config by running:

```
make x86_debug.config
```

Some of these options are x86-specific and can be left out when testing on other architectures.

Coding style notes

Comment style

Sentences in comments start with an uppercase letter.

Single line comments:

```
/* This is a single line comment */
```

Multi-line comments:

```
/*  
 * This is a properly formatted  
 * multi-line comment.  
 *  
 * Larger multi-line comments should be split into paragraphs.  
 */
```

No tail comments:

Please refrain from using tail comments. Tail comments disturb the reading flow in almost all contexts, but especially in code:

```
if (somecondition_is_true) /* Don't put a comment here */  
    dostuff(); /* Neither here */  
  
seed = MAGIC_CONSTANT; /* Nor here */
```

Use freestanding comments instead:

```
/* This condition is not obvious without a comment */  
if (somecondition_is_true) {  
    /* This really needs to be documented */  
    dostuff();  
}  
  
/* This magic initialization needs a comment. Maybe not? */  
seed = MAGIC_CONSTANT;
```

Comment the important things:

Comments should be added where the operation is not obvious. Documenting the obvious is just a distraction:

```
/* Decrement refcount and check for zero */
if (refcount_dec_and_test(&p->refcnt)) {
    do;
    lots;
    of;
    magic;
    things;
}
```

Instead, comments should explain the non-obvious details and document constraints:

```
if (refcount_dec_and_test(&p->refcnt)) {
    /*
     * Really good explanation why the magic things below
     * need to be done, ordering and locking constraints,
     * etc..
     */
    do;
    lots;
    of;
    magic;
    /* Needs to be the last operation because ... */
    things;
}
```

Function documentation comments:

To document functions and their arguments please use kernel-doc format and not free form comments:

```
/**
 * magic_function - Do lots of magic stuff
 * @magic:         Pointer to the magic data to operate on
 * @offset:        Offset in the data array of @magic
 *
 * Deep explanation of mysterious things done with @magic along
 * with documentation of the return values.
 *
 * Note, that the argument descriptors above are arranged
 * in a tabular fashion.
 */
```

This applies especially to globally visible functions and inline functions in public header files. It might be overkill to use kernel-doc format for every (static) function which needs a tiny explanation. The usage of descriptive function names often replaces these tiny comments. Apply common sense as always.

Documenting locking requirements

Documenting locking requirements is a good thing, but comments are not necessarily the best choice. Instead of writing:

```
/* Caller must hold foo->lock */
void func(struct foo *foo)
{
    ...
}
```

Please use:

```
void func(struct foo *foo)
{
    lockdep_assert_held(&foo->lock);
    ...
}
```

In `PROVE_LOCKING` kernels, `lockdep_assert_held()` emits a warning if the caller doesn't hold the lock. Comments can't do that.

Bracket rules

Brackets should be omitted only if the statement which follows 'if', 'for', 'while' etc. is truly a single line:

```
if (foo)
    do_something();
```

The following is not considered to be a single line statement even though C does not require brackets:

```
for (i = 0; i < end; i++)
    if (foo[i])
        do_something(foo[i]);
```

Adding brackets around the outer loop enhances the reading flow:

```
for (i = 0; i < end; i++) {
    if (foo[i])
        do_something(foo[i]);
}
```

Variable declarations

The preferred ordering of variable declarations at the beginning of a function is reverse fir tree order:

```
struct long_struct_name *descriptive_name;
unsigned long foo, bar;
unsigned int tmp;
int ret;
```

The above is faster to parse than the reverse ordering:

```
int ret;
unsigned int tmp;
unsigned long foo, bar;
struct long_struct_name *descriptive_name;
```

And even more so than random ordering:

```
unsigned long foo, bar;
int ret;
struct long_struct_name *descriptive_name;
unsigned int tmp;
```

Also please try to aggregate variables of the same type into a single line. There is no point in wasting screen space:

```
unsigned long a;
unsigned long b;
unsigned long c;
unsigned long d;
```

It's really sufficient to do:

```
unsigned long a, b, c, d;
```

Please also refrain from introducing line splits in variable declarations:

```
struct long_struct_name *descriptive_name = container_of(bar,
                                                         struct long_struct_name,
                                                         member);
struct foobar foo;
```

It's way better to move the initialization to a separate line after the declarations:

```
struct long_struct_name *descriptive_name;
struct foobar foo;

descriptive_name = container_of(bar, struct long_struct_name, member);
```

Variable types

Please use the proper u8, u16, u32, u64 types for variables which are meant to describe hardware or are used as arguments for functions which access hardware. These types are clearly defining the bit width and avoid truncation, expansion and 32/64-bit confusion.

u64 is also recommended in code which would become ambiguous for 32-bit kernels when 'unsigned long' would be used instead. While in such situations 'unsigned long long' could be used as well, u64 is shorter and also clearly shows that the operation is required to be 64 bits wide independent of the target CPU.

Please use 'unsigned int' instead of 'unsigned'.

Constants

Please do not use literal (hexa)decimal numbers in code or initializers. Either use proper defines which have descriptive names or consider using an enum.

Struct declarations and initializers

Struct declarations should align the struct member names in a tabular fashion:

```
struct bar_order {
    unsigned int    guest_id;
    int             ordered_item;
    struct menu     *menu;
};
```

Please avoid documenting struct members within the declaration, because this often results in strangely formatted comments and the struct members become obfuscated:

```
struct bar_order {
    unsigned int    guest_id; /* Unique guest id */
    int             ordered_item;
    /* Pointer to a menu instance which contains all the drinks */
    struct menu     *menu;
};
```

Instead, please consider using the kernel-doc format in a comment preceding the struct declaration, which is easier to read and has the added advantage of including the information in the kernel documentation, for example, as follows:

```
/**
 * struct bar_order - Description of a bar order
 * @guest_id:         Unique guest id
 * @ordered_item:     The item number from the menu
 * @menu:             Pointer to the menu from which the item
 *                   was ordered
 *
 * Supplementary information for using the struct.
 */
```

```

* Note, that the struct member descriptors above are arranged
* in a tabular fashion.
*/
struct bar_order {
    unsigned int    guest_id;
    int             ordered_item;
    struct menu     *menu;
};

```

Static struct initializers must use C99 initializers and should also be aligned in a tabular fashion:

```

static struct foo statfoo = {
    .a          = 0,
    .plain_integer = CONSTANT_DEFINE_OR_ENUM,
    .bar        = &statbar,
};

```

Note that while C99 syntax allows the omission of the final comma, we recommend the use of a comma on the last line because it makes reordering and addition of new lines easier, and makes such future patches slightly easier to read as well.

Line breaks

Restricting line length to 80 characters makes deeply indented code hard to read. Consider breaking out code into helper functions to avoid excessive line breaking.

The 80 character rule is not a strict rule, so please use common sense when breaking lines. Especially format strings should never be broken up.

When splitting function declarations or function calls, then please align the first argument in the second line with the first argument in the first line:

```

static int long_function_name(struct foobar *barfoo, unsigned int id,
                             unsigned int offset)
{
    if (!id) {
        ret = longer_function_name(barfoo, DEFAULT_BARF00_ID,
                                   offset);
    }
    ...
}

```

Namespaces

Function/variable namespaces improve readability and allow easy grepping. These namespaces are string prefixes for globally visible function and variable names, including inlines. These prefixes should combine the subsystem and the component name such as 'x86_comp_', 'sched_', 'irq_', and 'mutex_'.

This also includes static file scope functions that are immediately put into globally visible driver templates - it's useful for those symbols to carry a good prefix as well, for backtrace readability.

Namespace prefixes may be omitted for local static functions and variables. Truly local functions, only called by other local functions, can have shorter descriptive names - our primary concern is greppability and backtrace readability.

Please note that 'xxx_vendor_' and 'vendor_xxx_' prefixes are not helpful for static functions in vendor-specific files. After all, it is already clear that the code is vendor-specific. In addition, vendor names should only be for truly vendor-specific functionality.

As always apply common sense and aim for consistency and readability.

Commit notifications

The tip tree is monitored by a bot for new commits. The bot sends an email for each new commit to a dedicated mailing list (linux-tip-commits@vger.kernel.org) and Cc's all people who are mentioned in one of the commit tags. It uses the email message ID from the Link tag at the end of the tag list to set the In-Reply-To email header so the message is properly threaded with the patch submission email.

The tip maintainers and submaintainers try to reply to the submitter when merging a patch, but they sometimes forget or it does not fit the workflow of the moment. While the bot message is purely mechanical, it also implies a 'Thank you! Applied.'.

* KVM x86

Foreword

KVM strives to be a welcoming community; contributions from newcomers are valued and encouraged. Please do not be discouraged or intimidated by the length of this document and the many rules/guidelines it contains. Everyone makes mistakes, and everyone was a newbie at some point. So long as you make an honest effort to follow KVM x86's guidelines, are receptive to feedback, and learn from any mistakes you make, you will be welcomed with open arms, not torches and pitchforks.

TL;DR

Testing is mandatory. Be consistent with established styles and patterns.

Trees

KVM x86 is currently in a transition period from being part of the main KVM tree, to being "just another KVM arch". As such, KVM x86 is split across the main KVM tree, git.kernel.org/pub/scm/virt/kvm/kvm.git, and a KVM x86 specific tree, github.com/kvm-x86/linux.git.

Generally speaking, fixes for the current cycle are applied directly to the main KVM tree, while all development for the next cycle is routed through the KVM x86 tree. In the unlikely event that a fix for the current cycle is routed through the KVM x86 tree, it will be applied to the fixes branch before making its way to the main KVM tree.

Note, this transition period is expected to last quite some time, i.e. will be the status quo for the foreseeable future.

Branches

The KVM x86 tree is organized into multiple topic branches. The purpose of using finer-grained topic branches is to make it easier to keep tabs on an area of development, and to limit the collateral damage of human errors and/or buggy commits, e.g. dropping the HEAD commit of a topic branch has no impact on other in-flight commits' SHA1 hashes, and having to reject a pull request due to bugs delays only that topic branch.

All topic branches, except for `next` and `fixes`, are rolled into `next` via a Cthulhu merge on an as-needed basis, i.e. when a topic branch is updated. As a result, force pushes to `next` are common.

Lifecycle

Fixes that target the current release, a.k.a. mainline, are typically applied directly to the main KVM tree, i.e. do not route through the KVM x86 tree.

Changes that target the next release are routed through the KVM x86 tree. Pull requests (from KVM x86 to main KVM) are sent for each KVM x86 topic branch, typically the week before Linus' opening of the merge window, e.g. the week following rc7 for "normal" releases. If all goes well, the topic branches are rolled into the main KVM pull request sent during Linus' merge window.

The KVM x86 tree doesn't have its own official merge window, but there's a soft close around rc5 for new features, and a soft close around rc6 for fixes (for the next release; see above for fixes that target the current release).

Timeline

Submissions are typically reviewed and applied in FIFO order, with some wiggle room for the size of a series, patches that are "cache hot", etc. Fixes, especially for the current release and or stable trees, get to jump the queue. Patches that will be taken through a non-KVM tree (most often through the tip tree) and/or have other acks/reviews also jump the queue to some extent.

Note, the vast majority of review is done between rc1 and rc6, give or take. The period between rc6 and the next rc1 is used to catch up on other tasks, i.e. radio silence during this period isn't unusual.

Pings to get a status update are welcome, but keep in mind the timing of the current release cycle and have realistic expectations. If you are pinging for acceptance, i.e. not just for feedback or an update, please do everything you can, within reason, to ensure that your patches are ready to be merged! Pings on series that break the build or fail tests lead to unhappy maintainers!

Development

Base Tree/Branch

Fixes that target the current release, a.k.a. mainline, should be based on `git://git.kernel.org/pub/scm/virt/kvm/kvm.git master`. Note, fixes do not automatically warrant inclusion in the current release. There is no singular rule, but typically only fixes for bugs that are urgent, critical, and/or were introduced in the current release should target the current release.

Everything else should be based on `kvm-x86/next`, i.e. there is no need to select a specific topic branch as the base. If there are conflicts and/or dependencies across topic branches, it is the maintainer's job to sort them out.

The only exception to using `kvm-x86/next` as the base is if a patch/series is a multi-arch series, i.e. has non-trivial modifications to common KVM code and/or has more than superficial changes to other architectures' code. Multi-arch patch/series should instead be based on a common, stable point in KVM's history, e.g. the release candidate upon which `kvm-x86 next` is based. If you're unsure whether a patch/series is truly multi-arch, err on the side of caution and treat it as multi-arch, i.e. use a common base.

Coding Style

When it comes to style, naming, patterns, etc., consistency is the number one priority in KVM x86. If all else fails, match what already exists.

With a few caveats listed below, follow the tip tree maintainers' preferred [Coding style notes](#), as patches/series often touch both KVM and non-KVM x86 files, i.e. draw the attention of KVM *and* tip tree maintainers.

Using reverse fir tree, a.k.a. reverse Christmas tree or reverse XMAS tree, for variable declarations isn't strictly required, though it is still preferred.

Except for a handful of special snowflakes, do not use kernel-doc comments for functions. The vast majority of "public" KVM functions aren't truly public as they are intended only for KVM-internal consumption (there are plans to privatize KVM's headers and exports to enforce this).

Comments

Write comments using imperative mood and avoid pronouns. Use comments to provide a high level overview of the code, and/or to explain why the code does what it does. Do not reiterate what the code literally does; let the code speak for itself. If the code itself is inscrutable, comments will not help.

SDM and APM References

Much of KVM's code base is directly tied to architectural behavior defined in Intel's Software Development Manual (SDM) and AMD's Architecture Programmer's Manual (APM). Use of "Intel's SDM" and "AMD's APM", or even just "SDM" or "APM", without additional context is a-ok.

Do not reference specific sections, tables, figures, etc. by number, especially not in comments. Instead, if necessary (see below), copy-paste the relevant snippet and reference sections/tables/figures by name. The layouts of the SDM and APM are constantly changing, and so the numbers/labels aren't stable.

Generally speaking, do not explicitly reference or copy-paste from the SDM or APM in comments. With few exceptions, KVM *must* honor architectural behavior, therefore it's implied that KVM behavior is emulating SDM and/or APM behavior. Note, referencing the SDM/APM in changelogs to justify the change and provide context is perfectly ok and encouraged.

Shortlog

The preferred prefix format is KVM: <topic>:, where <topic> is one of:

- x86
- x86/mmu
- x86/pmu
- x86/xen
- selftests
- SVM
- nSVM
- VMX
- nVMX

DO NOT use x86/kvm! x86/kvm is used exclusively for Linux-as-a-KVM-guest changes, i.e. for arch/x86/kernel/kvm.c. Do not use file names or complete file paths as the subject/shortlog prefix.

Note, these don't align with the topics branches (the topic branches care much more about code conflicts).

All names are case sensitive! KVM: x86: is good, kvm: vmx: is not.

Capitalize the first word of the condensed patch description, but omit ending punctuation. E.g.:

```
KVM: x86: Fix a null pointer dereference in function_xyz()
```

not:

```
kvm: x86: fix a null pointer dereference in function_xyz.
```

If a patch touches multiple topics, traverse up the conceptual tree to find the first common parent (which is often simply x86). When in doubt, `git log path/to/file` should provide a reasonable hint.

New topics do occasionally pop up, but please start an on-list discussion if you want to propose introducing a new topic, i.e. don't go rogue.

See *The canonical patch format* for more information, with one amendment: do not treat the 70-75 character limit as an absolute, hard limit. Instead, use 75 characters as a firm-but-not-hard limit, and use 80 characters as a hard limit. I.e. let the shortlog run a few characters over the standard limit if you have good reason to do so.

Changelog

Most importantly, write changelogs using imperative mood and avoid pronouns.

See *Describe your changes* for more information, with one amendment: lead with a short blurb on the actual changes, and then follow up with the context and background. Note! This order directly conflicts with the tip tree's preferred approach! Please follow the tip tree's preferred style when sending patches that primarily target arch/x86 code that is `_NOT_` KVM code.

Stating what a patch does before diving into details is preferred by KVM x86 for several reasons. First and foremost, what code is actually being changed is arguably the most important information, and so that info should be easy to find. Changelogs that bury the "what's actually changing" in a one-liner after 3+ paragraphs of background make it very hard to find that information.

For initial review, one could argue the "what's broken" is more important, but for skimming logs and git archaeology, the gory details matter less and less. E.g. when doing a series of "git blame", the details of each change along the way are useless, the details only matter for the culprit. Providing the "what changed" makes it easy to quickly determine whether or not a commit might be of interest.

Another benefit of stating "what's changing" first is that it's almost always possible to state "what's changing" in a single sentence. Conversely, all but the most simple bugs require multiple sentences or paragraphs to fully describe the problem. If both the "what's changing" and "what's the bug" are super short then the order doesn't matter. But if one is shorter (almost always the "what's changing"), then covering the shorter one first is advantageous because it's less of an inconvenience for readers/reviewers that have a strict ordering preference. E.g. having to skip one sentence to get to the context is less painful than having to skip three paragraphs to get to "what's changing".

Fixes

If a change fixes a KVM/kernel bug, add a Fixes: tag even if the change doesn't need to be backported to stable kernels, and even if the change fixes a bug in an older release.

Conversely, if a fix does need to be backported, explicitly tag the patch with "Cc: [stable@vger.kernel](mailto:stable@vger.kernel.org)" (though the email itself doesn't need to Cc: stable); KVM x86 opts out of backporting Fixes: by default. Some auto-selected patches do get backported, but require explicit maintainer approval (search MANUALSEL).

Function References

When a function is mentioned in a comment, changelog, or shortlog (or anywhere for that matter), use the format `function_name()`. The parentheses provide context and disambiguate the reference.

Testing

At a bare minimum, *all* patches in a series must build cleanly for `KVM_INTEL=m KVM_AMD=m`, and `KVM_WERROR=y`. Building every possible combination of Kconfigs isn't feasible, but the more the merrier. `KVM_SMM`, `KVM_XEN`, `PROVE_LOCKING`, and `X86_64` are particularly interesting knobs to turn.

Running KVM selftests and KVM-unit-tests is also mandatory (and stating the obvious, the tests need to pass). The only exception is for changes that have negligible probability of affecting runtime behavior, e.g. patches that only modify comments. When possible and relevant, testing on both Intel and AMD is strongly preferred. Booting an actual VM is encouraged, but not mandatory.

For changes that touch KVM's shadow paging code, running with TDP (EPT/NPT) disabled is mandatory. For changes that affect common KVM MMU code, running with TDP disabled is strongly encouraged. For all other changes, if the code being modified depends on and/or interacts with a module param, testing with the relevant settings is mandatory.

Note, KVM selftests and KVM-unit-tests do have known failures. If you suspect a failure is not due to your changes, verify that the *exact same* failure occurs with and without your changes.

Changes that touch reStructured Text documentation, i.e. `.rst` files, must build `htmldocs` cleanly, i.e. with no new warnings or errors.

If you can't fully test a change, e.g. due to lack of hardware, clearly state what level of testing you were able to do, e.g. in the cover letter.

New Features

With one exception, new features *must* come with test coverage. KVM specific tests aren't strictly required, e.g. if coverage is provided by running a sufficiently enabled guest VM, or by running a related kernel selftest in a VM, but dedicated KVM tests are preferred in all cases. Negative testcases in particular are mandatory for enabling of new hardware features as error and exception flows are rarely exercised simply by running a VM.

The only exception to this rule is if KVM is simply advertising support for a feature via `KVM_GET_SUPPORTED_CPUID`, i.e. for instructions/features that KVM can't prevent a guest from using and for which there is no true enabling.

Note, "new features" does not just mean "new hardware features"! New features that can't be well validated using existing KVM selftests and/or KVM-unit-tests must come with tests.

Posting new feature development without tests to get early feedback is more than welcome, but such submissions should be tagged RFC, and the cover letter should clearly state what type of feedback is requested/expected. Do not abuse the RFC process; RFCs will typically not receive in-depth review.

Bug Fixes

Except for “obvious” found-by-inspection bugs, fixes must be accompanied by a reproducer for the bug being fixed. In many cases the reproducer is implicit, e.g. for build errors and test failures, but it should still be clear to readers what is broken and how to verify the fix. Some leeway is given for bugs that are found via non-public workloads/tests, but providing regression tests for such bugs is strongly preferred.

In general, regression tests are preferred for any bug that is not trivial to hit. E.g. even if the bug was originally found by a fuzzer such as syzkaller, a targeted regression test may be warranted if the bug requires hitting a one-in-a-million type race condition.

Note, KVM bugs are rarely urgent *and* non-trivial to reproduce. Ask yourself if a bug is really truly the end of the world before posting a fix without a reproducer.

Posting

Links

Do not explicitly reference bug reports, prior versions of a patch/series, etc. via In-Reply-To: headers. Using In-Reply-To: becomes an unholy mess for large series and/or when the version count gets high, and In-Reply-To: is useless for anyone that doesn't have the original message, e.g. if someone wasn't Cc'd on the bug report or if the list of recipients changes between versions.

To link to a bug report, previous version, or anything of interest, use lore links. For referencing previous version(s), generally speaking do not include a Link: in the changelog as there is no need to record the history in git, i.e. put the link in the cover letter or in the section git ignores. Do provide a formal Link: for bug reports and/or discussions that led to the patch. The context of why a change was made is highly valuable for future readers.

Git Base

If you are using git version 2.9.0 or later (Googlers, this is all of you!), use `git format-patch` with the `--base` flag to automatically include the base tree information in the generated patches.

Note, `--base=auto` works as expected if and only if a branch's upstream is set to the base topic branch, e.g. it will do the wrong thing if your upstream is set to your personal repository for backup purposes. An alternative “auto” solution is to derive the names of your development branches based on their KVM x86 topic, and feed that into `--base`. E.g. `x86/pmu/my_branch_name`, and then write a small wrapper to extract `pmu` from the current branch name to yield `--base=x/pmu`, where `x` is whatever name your repository uses to track the KVM x86 remote.

Co-Posting Tests

KVM selftests that are associated with KVM changes, e.g. regression tests for bug fixes, should be posted along with the KVM changes as a single series. The standard kernel rules for bisection apply, i.e. KVM changes that result in test failures should be ordered after the selftests updates, and vice versa, new tests that fail due to KVM bugs should be ordered after the KVM fixes.

KVM-unit-tests should *always* be posted separately. Tools, e.g. b4 am, don't know that KVM-unit-tests is a separate repository and get confused when patches in a series apply on different trees. To tie KVM-unit-tests patches back to KVM patches, first post the KVM changes and then provide a `Link:` to the KVM patch/series in the KVM-unit-tests patch(es).

Notifications

When a patch/series is officially accepted, a notification email will be sent in reply to the original posting (cover letter for multi-patch series). The notification will include the tree and topic branch, along with the SHA1s of the commits of applied patches.

If a subset of patches is applied, this will be clearly stated in the notification. Unless stated otherwise, it's implied that any patches in the series that were not accepted need more work and should be submitted in a new version.

If for some reason a patch is dropped after officially being accepted, a reply will be sent to the notification email explaining why the patch was dropped, as well as the next steps.

SHA1 Stability

SHA1s are not 100% guaranteed to be stable until they land in Linus' tree! A SHA1 is *usually* stable once a notification has been sent, but things happen. In most cases, an update to the notification email be provided if an applied patch's SHA1 changes. However, in some scenarios, e.g. if all KVM x86 branches need to be rebased, individual notifications will not be given.

Vulnerabilities

Bugs that can be exploited by the guest to attack the host (kernel or userspace), or that can be exploited by a nested VM to *its* host (L2 attacking L1), are of particular interest to KVM. Please follow the protocol for [Security bugs](#) if you suspect a bug can lead to an escape, data leak, etc.

* List of maintainers

* Descriptions of section entries and preferred order

M: *Mail* patches to: FullName <address@domain>

R: Designated *Reviewer*: FullName <address@domain>

These reviewers should be CCed on patches.

L: *Mailing list* that is relevant to this area

S: *Status*, one of the following:

Supported: Someone is actually paid to look after this.

Maintained: Someone actually looks after it.

Odd Fixes: It has a maintainer but they don't have time to do much other than throw the odd patch in. See below..

Orphan: No current maintainer [but maybe you could take the role as you write your new code].

Obsolete: Old code. Something tagged obsolete generally means it has been replaced by a better system and you should be using that.

W: *Web-page* with status/info

Q: *Patchwork* web based patch tracking system site

B: URI for where to file *bugs*. A web-page with detailed bug filing info, a direct bug tracker link, or a mailto: URI.

C: URI for *chat* protocol, server and channel where developers usually hang out, for example <irc://server/channel>.

P: Subsystem Profile document for more details submitting patches to the given subsystem. This is either an in-tree file, or a URI. See *maintainer/maintainer-entry-profile* for details.

T: *SCM* tree type and location.

Type is one of: *git*, *hg*, *quilt*, *stgit*, *topgit*

F: *Files* and directories wildcard patterns.

A trailing slash includes all files and subdirectory files.

F: *drivers/net/* all files in and below *drivers/net*

F: *drivers/net/** all files in *drivers/net*, but not below

F: */net/* all files in "any top level directory"/*net*

One pattern per line. Multiple F: lines acceptable.

X: *Excluded* files and directories that are NOT maintained, same rules as F:. Files exclusions are tested before file matches. Can be useful for excluding a specific subdirectory, for instance:

F: *net/*

X: *net/ipv6/*

matches all files in and below *net* excluding *net/ipv6/*

N: *Files* and directories *Regex* patterns.

N: `[^a-z]tegra` all files whose path contains *tegra*
(not including files like *integrator*)

One pattern per line. Multiple N: lines acceptable.

scripts/get_maintainer.pl has different behavior for files that match F: pattern and matches of N: patterns. By default, *get_maintainer* will not look at git log history when an F: pattern match occurs. When an N: match occurs, git log history is used to also notify the people that have git commit signatures.

K: *Content regex* (perl extended) pattern match in a patch or file.

For instance:

K: *of_get_profile*

matches patches or files that contain "of_get_profile"

K: \b(printk|pr_(info|err))\b

matches patches or files that contain one or more of the words
printk, pr_info or pr_err

One regex pattern per line. Multiple K: lines acceptable.

* Maintainers List

Note: When reading this list, please look for the most precise areas first. When adding to this list, please keep the entries in alphabetical order.

3C59X NETWORK DRIVER

Mail

Steffen Klassert <klassert@kernel.org>

Mailing list

netdev@vger.kernel.org

Status

Odd Fixes

Files

networking/device_drivers/ethernet/3com/vortex drivers/net/ethernet/3com/
3c59x.c

3CR990 NETWORK DRIVER

Mail

David Dillow <dave@thedillows.org>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/3com/typhoon*

3WARE SAS/SATA-RAID SCSI DRIVERS (3W-XXXX, 3W-9XXX, 3W-SAS)

Mail

Adam Radford <aradford@gmail.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Web-page

<http://www.lsi.com>

Files

drivers/scsi/3w-*

53C700 AND 53C700-66 SCSI DRIVER

Mail

"James E.J. Bottomley" <James.Bottomley@HansenPartnership.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Maintained

Files

drivers/scsi/53c700*

6LOWPAN GENERIC (BTLE/IEEE 802.15.4)

Mail

Alexander Aring <alex.aring@gmail.com>

Mailing list

linux-bluetooth@vger.kernel.org, linux-wpan@vger.kernel.org

Status

Maintained

Files

networking/6lowpan include/net/6lowpan.h net/6lowpan/

6PACK NETWORK DRIVER FOR AX.25

Mail

Andreas Koensgen <ajk@comnets.uni-bremen.de>

Mailing list

linux-hams@vger.kernel.org

Status

Maintained

Files

drivers/net/hamradio/6pack.c

802.11 (including CFG80211/NL80211)

Mail

Johannes Berg <johannes@sipsolutions.net>

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

Web-page

<https://wireless.wiki.kernel.org/>

Patchwork

<https://patchwork.kernel.org/project/linux-wireless/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/wireless/wireless.git](https://git.kernel.org/pub/scm/linux/kernel/git/wireless/wireless.git) git
[git://git.kernel.org/pub/scm/linux/kernel/git/wireless/wireless-next.git](https://git.kernel.org/pub/scm/linux/kernel/git/wireless/wireless-next.git)

Files

driver-api/80211/cfg80211 networking/regulatory include/linux/ieee80211.h
include/net/cfg80211.h include/net/ieee80211_radiotap.h include/net/
iw_handler.h include/net/wext.h include/uapi/linux/nl80211.h include/
uapi/linux/wireless.h net/wireless/

8169 10/100/1000 GIGABIT ETHERNET DRIVER

Mail

Heiner Kallweit <hkallweit1@gmail.com>, nic_swsd@realtek.com

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/realtek/r8169*

8250/16?50 (AND CLONE UARTS) SERIAL DRIVER

Mail

Greg Kroah-Hartman <gregkh@linuxfoundation.org>

Mailing list

linux-serial@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/gregkh/tty.git](https://git.kernel.org/pub/scm/linux/kernel/git/gregkh/tty.git)

Files

drivers/tty/serial/8250* include/linux/serial_8250.h

8390 NETWORK DRIVERS [WD80x3/SMC-ELITE, SMC-ULTRA, NE2000, 3C503, etc.]

Mailing list

netdev@vger.kernel.org

Status

Orphan / Obsolete

Files

drivers/net/ethernet/8390/

9P FILE SYSTEM

Mail

Eric Van Hensbergen <ericvh@kernel.org>, Latchesar Ionkov <lucho@ionkov.net>, Dominique Martinet <asmadeus@codewreck.org>

Reviewer

Christian Schoenebeck <linux_oss@crudebyte.com>

Mailing list

v9fs@lists.linux.dev

Status

Maintained

Web-page

<http://github.com/v9fs>

Patchwork

<http://patchwork.kernel.org/project/v9fs-devel/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/ericvh/v9fs.git](https://git.kernel.org/pub/scm/linux/kernel/git/ericvh/v9fs.git) git
[git://github.com/martinetd/linux.git](https://github.com/martinetd/linux.git)

Files

filesystems/9p fs/9p/ include/net/9p/ include/trace/events/9p.h include/
uapi/linux/virtio_9p.h net/9p/

A64FX DIAG DRIVER

Mail

Hitomi Hasegawa <hasegawa-hitomi@fujitsu.com>

Status

Supported

Files

drivers/soc/fujitsu/a64fx-diag.c

A8293 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/dvb-frontends/a8293*

AACRAID SCSI RAID DRIVER

Mail

Adaptec OEM Raid Solutions <aacraid@microsemi.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Web-page

<http://www.adaptec.com/>

Files

scsi/aacraid drivers/scsi/aacraid/

AB8500 BATTERY AND CHARGER DRIVERS

Mail

Linus Walleij <linus.walleij@linaro.org>

Files

Documentation/devicetree/bindings/power/supply/*ab8500* drivers/
power/supply/*ab8500*

ABI/API

Mailing list

linux-api@vger.kernel.org

Files

include/linux/syscalls.h kernel/sys_ni.c

Excluded

arch/*/include/uapi/ include/uapi/

ABIT UGURU 1,2 HARDWARE MONITOR DRIVER

Mail

Hans de Goede <hdegoede@redhat.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

drivers/hwmon/abituguru.c

ABIT UGURU 3 HARDWARE MONITOR DRIVER

Mail

Alistair John Strachan <alistair@devzero.co.uk>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

drivers/hwmon/abituguru3.c

ACCES 104-DIO-48E GPIO DRIVER

Mail

William Breathitt Gray <william.gray@linaro.org>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

drivers/gpio/gpio-104-dio-48e.c

ACCES 104-IDI-48 GPIO DRIVER

Mail

William Breathitt Gray <william.gray@linaro.org>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

drivers/gpio/gpio-104-idi-48.c

ACCES 104-IDIO-16 GPIO DRIVER

Mail

William Breathitt Gray <william.gray@linaro.org>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

drivers/gpio/gpio-104-idio-16.c

ACCES 104-QUAD-8 DRIVER

Mail

William Breathitt Gray <william.gray@linaro.org>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

drivers/counter/104-quad-8.c

ACCES IDIO-16 GPIO LIBRARY

Mail

William Breathitt Gray <william.gray@linaro.org>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

drivers/gpio/gpio-idio-16.c drivers/gpio/gpio-idio-16.h

ACCES PCI-IDIO-16 GPIO DRIVER

Mail

William Breathitt Gray <william.gray@linaro.org>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

drivers/gpio/gpio-pci-idio-16.c

ACCES PCIe-IDIO-24 GPIO DRIVER

Mail

William Breathitt Gray <william.gray@linaro.org>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

drivers/gpio/gpio-pcie-idio-24.c

ACENIC DRIVER

Mail

Jes Sorensen <jes@trained-monkey.org>

Mailing list

linux-acenic@sunsite.dk

Status

Maintained

Files

drivers/net/ethernet/alteon/acenic*

ACER ASPIRE ONE TEMPERATURE AND FAN DRIVER

Mail

Peter Kaestle <peter@piie.net>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Web-page

<http://piie.net/?section=acerhdf>

Files

drivers/platform/x86/acerhdf.c

ACER WMI LAPTOP EXTRAS**Mail**

"Lee, Chun-Yi" <jlee@suse.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/acer-wmi.c

ACPI**Mail**

"Rafael J. Wysocki" <rafael@kernel.org>

Reviewer

Len Brown <lenb@kernel.org>

Mailing list

linux-acpi@vger.kernel.org

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/linux-acpi/list/>

bugs

<https://bugzilla.kernel.org>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/rafael/linux-pm](https://git.kernel.org/pub/scm/linux/kernel/git/rafael/linux-pm)

Files

Documentation/ABI/testing/configfs-acpi Documentation/ABI/testing/
sysfs-bus-acpi Documentation/firmware-guide/acpi/ arch/x86/kernel/
acpi/ arch/x86/pci/acpi.c drivers/acpi/ drivers/pci/**acpi* drivers/
pci/*acpi* drivers/pnp/pnpacpi/ include/acpi/ include/linux/acpi.h
include/linux/fwnode.h include/linux/fw_table.h lib/fw_table.c tools/
power/acpi/

ACPI APEI

Mail

"Rafael J. Wysocki" <rafael@kernel.org>

Reviewer

Len Brown <lenb@kernel.org>, James Morse <james.morse@arm.com>, Tony Luck <tony.luck@intel.com>, Borislav Petkov <bp@alien8.de>

Mailing list

linux-acpi@vger.kernel.org

Files

drivers/acpi/apei/

ACPI COMPONENT ARCHITECTURE (ACPICA)

Mail

Robert Moore <robert.moore@intel.com>, "Rafael J. Wysocki" <rafael.j.wysocki@intel.com>

Mailing list

linux-acpi@vger.kernel.org, acpica-devel@lists.linux.dev

Status

Supported

Web-page

<https://acpica.org/> <https://github.com/acpica/acpica/>

Patchwork

<https://patchwork.kernel.org/project/linux-acpi/list/>

bugs

<https://bugzilla.kernel.org> <https://bugs.acpica.org>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/rafael/linux-pm](https://git.kernel.org/pub/scm/linux/kernel/git/rafael/linux-pm)

Files

drivers/acpi/acpica/ include/acpi/ tools/power/acpi/

ACPI FOR ARM64 (ACPI/arm64)

Mail

Lorenzo Pieralisi <lpieralisi@kernel.org>, Hanjun Guo <guohanjun@huawei.com>, Sudeep Holla <sudeep.holla@arm.com>

Mailing list

linux-acpi@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

drivers/acpi/arm64

ACPI FOR RISC-V (ACPI/riscv)**Mail**

Sunil V L <sunilvl@ventanamicro.com>

Mailing list

linux-acpi@vger.kernel.org, linux-riscv@lists.infradead.org

Status

Maintained

Files

drivers/acpi/riscv/

ACPI PCC(Platform Communication Channel) MAILBOX DRIVER**Mail**

Sudeep Holla <sudeep.holla@arm.com>

Mailing list

linux-acpi@vger.kernel.org

Status

Supported

Files

drivers/mailbox/pcc.c

ACPI PMIC DRIVERS**Mail**

"Rafael J. Wysocki" <rafael@kernel.org>, Len Brown <lenb@kernel.org>

Reviewer

Andy Shevchenko <andy@kernel.org>, Mika Westerberg
<mika.westerberg@linux.intel.com>

Mailing list

linux-acpi@vger.kernel.org

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/linux-acpi/list/>

bugs

<https://bugzilla.kernel.org>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/rafael/linux-pm](https://git.kernel.org/pub/scm/linux/kernel/git/rafael/linux-pm)

Files

drivers/acpi/pmic/

ACPI SERIAL MULTI INSTANTIATE DRIVER

Mail

Hans de Goede <hdegoede@redhat.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/serial-multi-instantiate.c

ACPI THERMAL DRIVER

Mail

Rafael J. Wysocki <rafael@kernel.org>

Reviewer

Zhang Rui <rui.zhang@intel.com>

Mailing list

linux-acpi@vger.kernel.org

Status

Supported

bugs

<https://bugzilla.kernel.org>

Files

drivers/acpi/*thermal*

ACPI VIOT DRIVER

Mail

Jean-Philippe Brucker <jean-philippe@linaro.org>

Mailing list

linux-acpi@vger.kernel.org, iommu@lists.linux.dev

Status

Maintained

Files

drivers/acpi/viot.c include/linux/acpi_viot.h

ACPI WMI DRIVER

Mail

Armin Wolf <W_Armin@gmx.de>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

driver-api/wmi Documentation/wmi/ drivers/platform/x86/wmi.c include/
uapi/linux/wmi.h

ACRN HYPERVISOR SERVICE MODULE

Mail

Fei Li <fei1.li@intel.com>

Mailing list

acrn-dev@lists.projectacrn.org (subscribers-only)

Status

Supported

Web-page

<https://projectacrn.org>

Files

Documentation/virt/acrn/ drivers/virt/acrn/ include/uapi/linux/acrn.h

AD1889 ALSA SOUND DRIVER

Mailing list

linux-parisc@vger.kernel.org

Status

Maintained

Web-page

<https://parisc.wiki.kernel.org/index.php/AD1889>

Files

sound/pci/ad1889.*

AD5110 ANALOG DEVICES DIGITAL POTENTIOMETERS DRIVER

Mail

Mugilraj Dhavachelvan <dmugil2000@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Files

drivers/iio/potentiometer/ad5110.c

AD525X ANALOG DEVICES DIGITAL POTENTIOMETERS DRIVER

Mail

Michael Hennerich <michael.hennerich@analog.com>

Status

Supported

Web-page

<http://wiki.analog.com/AD5254> <https://ez.analog.com/linux-software-drivers>

Files

drivers/misc/ad525x_dpot.c

AD5398 CURRENT REGULATOR DRIVER (AD5398/AD5821)

Mail

Michael Hennerich <michael.hennerich@analog.com>

Status

Supported

Web-page

<http://wiki.analog.com/AD5398> <https://ez.analog.com/linux-software-drivers>

Files

drivers/regulator/ad5398.c

AD714X CAPACITANCE TOUCH SENSOR DRIVER (AD7142/3/7/8/7A)

Mail

Michael Hennerich <michael.hennerich@analog.com>

Status

Supported

Web-page

<http://wiki.analog.com/AD7142> <https://ez.analog.com/linux-software-drivers>

Files

drivers/input/misc/ad714x.c

AD7877 TOUCHSCREEN DRIVER

Mail

Michael Hennerich <michael.hennerich@analog.com>

Status

Supported

Web-page

<http://wiki.analog.com/AD7877> <https://ez.analog.com/linux-software-drivers>

Files

drivers/input/touchscreen/ad7877.c

AD7879 TOUCHSCREEN DRIVER (AD7879/AD7889)

Mail

Michael Hennerich <michael.hennerich@analog.com>

Status

Supported

Web-page

<http://wiki.analog.com/AD7879> <https://ez.analog.com/linux-software-drivers>

Files

drivers/input/touchscreen/ad7879.c

ADAFRUIT MINI I2C GAMEPAD

Mail

Anshul Dalal <anshulusr@gmail.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/input/adafruit,seesaw-gamepad.
yaml drivers/input/joystick/adafruit-seesaw.c

ADDRESS SPACE LAYOUT RANDOMIZATION (ASLR)

Mail

Jiri Kosina <jikos@kernel.org>

Status

Maintained

ADF7242 IEEE 802.15.4 RADIO DRIVER

Mail

Michael Hennerich <michael.hennerich@analog.com>

Mailing list

linux-wpan@vger.kernel.org

Status

Supported

Web-page

<https://wiki.analog.com/ADF7242> <https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/net/ieee802154/adf7242.txt
drivers/net/ieee802154/adf7242.c

ADM1025 HARDWARE MONITOR DRIVER

Mail

Jean Delvare <jdelvare@suse.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/adm1025 drivers/hwmon/adm1025.c

ADM1029 HARDWARE MONITOR DRIVER

Mail

Corentin Labbe <clabbe.montjoie@gmail.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

drivers/hwmon/adm1029.c

ADM8211 WIRELESS DRIVER

Mailing list

linux-wireless@vger.kernel.org

Status

Orphan

Files

drivers/net/wireless/admtek/adm8211.*

ADP1653 FLASH CONTROLLER DRIVER

Mail

Sakari Ailus <sakari.ailus@iki.fi>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/i2c/adp1653.c include/media/i2c/adp1653.h

ADP5520 BACKLIGHT DRIVER WITH IO EXPANDER (ADP5520/ADP5501)

Mail

Michael Hennerich <michael.hennerich@analog.com>

Status

Supported

Web-page

<http://wiki.analog.com/ADP5520> <https://ez.analog.com/linux-software-drivers>

Files

drivers/gpio/gpio-adp5520.c drivers/input/keyboard/adp5520-keys.c
drivers/leds/leds-adp5520.c drivers/mfd/adp5520.c drivers/video/
backlight/adp5520_bl.c

ADP5588 QWERTY KEYPAD AND IO EXPANDER DRIVER (ADP5588/ADP5587)

Mail

Michael Hennerich <michael.hennerich@analog.com>

Status

Supported

Web-page

<http://wiki.analog.com/ADP5588> <https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/input/adi,adp5588.yaml drivers/
input/keyboard/adp5588-keys.c

ADP8860 BACKLIGHT DRIVER (ADP8860/ADP8861/ADP8863)

Mail

Michael Hennerich <michael.hennerich@analog.com>

Status

Supported

Web-page

<http://wiki.analog.com/ADP8860> <https://ez.analog.com/linux-software-drivers>

Files

drivers/video/backlight/adp8860_bl.c

ADT746X FAN DRIVER

Mail

Colin Leroy <colin@colino.net>

Status

Maintained

Files

drivers/macintosh/therm_adt746x.c

ADT7475 HARDWARE MONITOR DRIVER

Mail

Jean Delvare <jdelvare@suse.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/adt7475 drivers/hwmon/adt7475.c

ADVANSYS SCSI DRIVER

Mail

Matthew Wilcox <willy@infradead.org>, Hannes Reinecke <hare@suse.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Maintained

Files

scsi/advansys drivers/scsi/advansys.c

ADVANTECH SWBTN DRIVER

Mail

Andrea Ho <Andrea.Ho@advantech.com.tw>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/adv_swbutton.c

ADXL313 THREE-AXIS DIGITAL ACCELEROMETER DRIVER

Mail

Lucas Stankus <lucas.p.stankus@gmail.com>

Status

Supported

Files

Documentation/devicetree/bindings/iio/accel/adi,adxl313.yaml
drivers/iio/accel/adxl313*

ADXL34X THREE-AXIS DIGITAL ACCELEROMETER DRIVER (ADXL345/ADXL346)

Mail

Michael Hennerich <michael.hennerich@analog.com>

Status

Supported

Web-page

<http://wiki.analog.com/ADXL345> <https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/iio/accel/adi,adxl345.yaml
drivers/input/misc/adxl34x.c

ADXL355 THREE-AXIS DIGITAL ACCELEROMETER DRIVER

Mail

Puranjay Mohan <puranjay12@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/iio/accel/adi,adxl355.yaml

`drivers/iio/accel/adxl355.h` `drivers/iio/accel/adxl355_core.c` `drivers/iio/accel/adxl355_i2c.c` `drivers/iio/accel/adxl355_spi.c`

ADXL367 THREE-AXIS DIGITAL ACCELEROMETER DRIVER

Mail

Cosmin Tanislav <cosmin.tanislav@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

`Documentation/devicetree/bindings/iio/accel/adi,adxl367.yaml`
`drivers/iio/accel/adxl367*`

ADXL372 THREE-AXIS DIGITAL ACCELEROMETER DRIVER

Mail

Michael Hennerich <michael.hennerich@analog.com>

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

`Documentation/devicetree/bindings/iio/accel/adi,adxl372.yaml`
`drivers/iio/accel/adxl372.c` `drivers/iio/accel/adxl372_i2c.c` `drivers/iio/accel/adxl372_spi.c`

AF9013 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

`drivers/media/dvb-frontends/af9013*`

AF9033 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/dvb-frontends/af9033*

AFFS FILE SYSTEM

Mail

David Sterba <dsterba@suse.com>

Mailing list

linux-fsdevel@vger.kernel.org

Status

Odd Fixes

Files

filesystems/affs fs/affs/

AFS FILESYSTEM

Mail

David Howells <dhowells@redhat.com>, Marc Dionne
<marc.dionne@auristor.com>

Mailing list

linux-afs@lists.infradead.org

Status

Supported

Web-page

<https://www.infradead.org/~dhowells/kafs/>

Files

filesystems/afs fs/afs/ include/trace/events/afs.h

AGPGART DRIVER

Mail

David Airlie <airlied@redhat.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm](https://anongit.freedesktop.org/drm/drm)

Files

`drivers/char/agp/ include/linux/agp* include/uapi/linux/agp*`

AHA152X SCSI DRIVER

Mail

"Juergen E. Fischer" <fischer@norbit.de>

Mailing list

linux-scsi@vger.kernel.org

Status

Maintained

Files

`drivers/scsi/aha152x* drivers/scsi/pcmcia/aha152x*`

AIC7XXX / AIC79XX SCSI DRIVER

Mail

Hannes Reinecke <hare@suse.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Maintained

Files

`drivers/scsi/aic7xxx/`

AIMSLAB FM RADIO RECEIVER DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git git://linuxtv.org/media_tree.git

Files

drivers/media/radio/radio-aimslab*

AIO

Mail

Benjamin LaHaise <bcrl@kvack.org>

Mailing list

linux-aio@kvack.org

Status

Supported

Files

fs/aio.c include/linux/*aio*.h

AIRSPY MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/usb/airspy/

ALACRITECH GIGABIT ETHERNET DRIVER

Mail

Lino Sanfilippo <LinoSanfilippo@gmx.de>

Status

Maintained

Files

drivers/net/ethernet/alacritech/*

ALCATEL SPEEDTOUCH USB DRIVER

Mail

Duncan Sands <duncan.sands@free.fr>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Web-page

<http://www.linux-usb.org/SpeedTouch/>

Files

drivers/usb/atm/speedtch.c drivers/usb/atm/usbatm.c

ALCHEMY AU1XX0 MMC DRIVER

Mail

Manuel Lauss <manuel.lauss@gmail.com>

Status

Maintained

Files

drivers/mmc/host/aulxmmc.c

ALI1563 I2C DRIVER

Mail

Rudolf Marek <r.marek@assembler.cz>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

i2c/busses/i2c-ali1563 drivers/i2c/busses/i2c-ali1563.c

ALIBABA ELASTIC RDMA DRIVER

Mail

Cheng Xu <chengyou@linux.alibaba.com>, Kai Shen
<kaishen@linux.alibaba.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Supported

Files

drivers/infiniband/hw/erdma include/uapi/rdma/erdma-abi.h

ALIBABA PMU DRIVER**Mail**

Shuai Xue <xueshuai@linux.alibaba.com>

Status

Supported

Files

admin-guide/perf/alibaba_pmu drivers/perf/alibaba_uncore_drw_pmu.c

ALIENWARE WMI DRIVER**Mailing list**

Dell.Client.Kernel@dell.com

Status

Maintained

Files

drivers/platform/x86/dell/alienware-wmi.c

ALLEGRO DVT VIDEO IP CORE DRIVER**Mail**

Michael Tretter <m.tretter@pengutronix.de>

Reviewer

Pengutronix Kernel Team <kernel@pengutronix.de>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/allegro,al5e.yaml drivers/
media/platform/allegro-dvt/

ALLIED VISION ALVIUM CAMERA DRIVER**Mail**

Tommaso Merciai <tomm.merciai@gmail.com>, Martin Hecht <martin.hecht@avnet.eu>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/i2c/alliedvision,
alvium-csi2.yaml drivers/media/i2c/alvium-csi2.c drivers/media/i2c/
alvium-csi2.h

ALLWINNER A10 CSI DRIVER

Mail

Maxime Ripard <mripard@kernel.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/allwinner,sun4i-a10-csi.
yaml drivers/media/platform/sunxi/sun4i-csi/

ALLWINNER A31 CSI DRIVER

Mail

Yong Deng <yong.deng@magewell.com>, Paul Kocialkowski
<paul.kocialkowski@bootlin.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/allwinner,sun6i-a31-csi.
yaml drivers/media/platform/sunxi/sun6i-csi/

ALLWINNER A31 ISP DRIVER

Mail

Paul Kocialkowski <paul.kocialkowski@bootlin.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/allwinner,sun6i-a31-isp.
yaml drivers/staging/media/sunxi/sun6i-isp/ drivers/staging/media/
sunxi/sun6i-isp/uapi/sun6i-isp-config.h

ALLWINNER A31 MIPI CSI-2 BRIDGE DRIVER**Mail**

Paul Kocialkowski <paul.kocialkowski@bootlin.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/allwinner,
sun6i-a31-mipi-csi2.yaml drivers/media/platform/sunxi/
sun6i-mipi-csi2/

ALLWINNER CPUFREQ DRIVER**Mail**

Yangtao Li <tiny.windzz@gmail.com>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/opp/allwinner,
sun50i-h6-operating-points.yaml drivers/cpufreq/
sun50i-cpufreq-nvmem.c

ALLWINNER CRYPTO DRIVERS**Mail**

Corentin Labbe <clabbe.montjoie@gmail.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Maintained

Files

drivers/crypto/allwinner/

ALLWINNER DMIC DRIVERS

Mail

Ban Tao <fengzheng923@gmail.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/sound/allwinner,sun50i-h6-dmic.
yaml sound/soc/sunxi/sun50i-dmic.c

ALLWINNER HARDWARE SPINLOCK SUPPORT

Mail

Wilken Gottwalt <wilken.gottwalt@posteo.net>

Status

Maintained

Files

Documentation/devicetree/bindings/hwlock/allwinner,
sun6i-a31-hwspinlock.yaml drivers/hwspinlock/sun6i_hwspinlock.c

ALLWINNER THERMAL DRIVER

Mail

Vasily Khoruzhick <anarsoul@gmail.com>, Yangtao Li
<tiny.windzz@gmail.com>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/thermal/allwinner,sun8i-a83t-ths.
yaml drivers/thermal/sun8i_thermal.c

ALLWINNER VPU DRIVER

Mail

Maxime Ripard <mripard@kernel.org>, Paul Kocialkowski
<paul.kocialkowski@bootlin.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/staging/media/sunxi/cedrus/

ALPHA PORT**Mail**

Richard Henderson <richard.henderson@linaro.org>, Ivan Kokshaysky
<ink@jurassic.park.msu.ru>, Matt Turner <mattst88@gmail.com>

Mailing list

linux-alpha@vger.kernel.org

Status

Odd Fixes

Files

arch/alpha/

ALPS PS/2 TOUCHPAD DRIVER**Reviewer**

Pali Rohár <pali@kernel.org>

Files

drivers/input/mouse/alps.*

ALTERA I2C CONTROLLER DRIVER**Mail**

Thor Thayer <thor.thayer@linux.intel.com>

Status

Maintained

Files

Documentation/devicetree/bindings/i2c/i2c-altera.txt drivers/i2c/
busses/i2c-altera.c

ALTERA MAILBOX DRIVER**Mail**

Mun Yew Tham <mun.yew.tham@intel.com>

Status

Maintained

Files

drivers/mailbox/mailbox-altera.c

ALTERA MSGDMA IP CORE DRIVER

Mail

Olivier Dautricourt <olivierdautricourt@gmail.com>

Reviewer

Stefan Roesse <sr@denx.de>

Mailing list

dmaengine@vger.kernel.org

Status

Odd Fixes

Files

Documentation/devicetree/bindings/dma/altr,msgdma.yaml drivers/dma/
altera-msgdma.c

ALTERA PIO DRIVER

Mail

Mun Yew Tham <mun.yew.tham@intel.com>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

drivers/gpio/gpio-altera.c

ALTERA SYSTEM MANAGER DRIVER

Mail

Thor Thayer <thor.thayer@linux.intel.com>

Status

Maintained

Files

drivers/mfd/altera-sysmgr.c include/linux/mfd/altera-sysmgr.h

ALTERA SYSTEM RESOURCE DRIVER FOR ARRIA10 DEVKIT

Mail

Thor Thayer <thor.thayer@linux.intel.com>

Status

Maintained

Files

drivers/gpio/gpio-altera-a10sr.c drivers/mfd/altera-a10sr.c drivers/
reset/reset-a10sr.c include/dt-bindings/reset/altr,rst-mgr-a10sr.h
include/linux/mfd/altera-a10sr.h

ALTERA TRIPLE SPEED ETHERNET DRIVER

Mail

Joyce Ooi <joyce.ooi@intel.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/altera/

ALTERA UART/JTAG UART SERIAL DRIVERS

Mail

Tobias Klauser <tklauser@distanz.ch>

Mailing list

linux-serial@vger.kernel.org

Status

Maintained

Files

drivers/tty/serial/altera_jtaguart.c drivers/tty/serial/altera_uart.
c include/linux/altera_jtaguart.h include/linux/altera_uart.h

AMAZON ANNAPURNA LABS FIC DRIVER

Mail

Talel Shenhar <talel@amazon.com>

Status

Maintained

Files

Documentation/devicetree/bindings/interrupt-controller/amazon,
al-fic.txt drivers/irqchip/irq-al-fic.c

AMAZON ANNAPURNA LABS MEMORY CONTROLLER EDAC

Mail

Talel Shenhar <talel@amazon.com>, Talel Shenhar <talelshenhar@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/edac/amazon,al-mc-edac.yaml
drivers/edac/al_mc_edac.c

AMAZON ANNAPURNA LABS THERMAL MMIO DRIVER

Mail

Talel Shenhar <talel@amazon.com>

Status

Maintained

Files

Documentation/devicetree/bindings/thermal/amazon,al-thermal.txt
drivers/thermal/thermal_mmio.c

AMAZON ETHERNET DRIVERS

Mail

Shay Agroskin <shayagr@amazon.com>, Arthur Kiyanovski
<akiyano@amazon.com>

Reviewer

David Arinzon <darinzon@amazon.com>, Noam Dagan <nda-gan@amazon.com>, Saeed Bishara <saeedb@amazon.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

networking/device_drivers/ethernet/amazon/ena drivers/net/ethernet/
amazon/

AMAZON RDMA EFA DRIVER

Mail

Michael Margolin <mrgolin@amazon.com>

Reviewer

Gal Pressman <gal.pressman@linux.dev>, Yossi Leybovich
<sleybo@amazon.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/linux-rdma/list/>

Files

drivers/infiniband/hw/efa/ include/uapi/rdma/efa-abi.h

AMD AXI W1 DRIVER

Mail

Kris Chaplin <kris.chaplin@amd.com>

Reviewer

Thomas Delev <thomas.delev@amd.com>, Michal Simek
<michal.simek@amd.com>

Status

Maintained

Files

Documentation/devicetree/bindings/w1/amd,axi-lwire-host.yaml
drivers/w1/masters/amd_axi_w1.c

AMD CDX BUS DRIVER

Mail

Nipun Gupta <nipun.gupta@amd.com>, Nikhil Agarwal
<nikhil.agarwal@amd.com>

Status

Maintained

Files

Documentation/devicetree/bindings/bus/xlnx,versal-net-cdx.yaml
drivers/cdx/* include/linux/cdx/*

AMD CRYPTOGRAPHIC COPROCESSOR (CCP) DRIVER

Mail

Tom Lendacky <thomas.lendacky@amd.com>, John Allen
<john.allen@amd.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Supported

Files

drivers/crypto/ccp/ include/linux/ccp.h

AMD CRYPTOGRAPHIC COPROCESSOR (CCP) DRIVER - SEV SUPPORT

Mail

Ashish Kalra <ashish.kalra@amd.com>, Tom Lendacky
<thomas.lendacky@amd.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Supported

Files

drivers/crypto/ccp/sev* include/uapi/linux/psp-sev.h

AMD CRYPTOGRAPHIC COPROCESSOR (CCP) DRIVER - DBC SUPPORT

Mail

Mario Limonciello <mario.limonciello@amd.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Supported

Files

drivers/crypto/ccp/dbc.c drivers/crypto/ccp/dbc.h drivers/crypto/ccp/
platform-access.c drivers/crypto/ccp/platform-access.h include/uapi/
linux/psp-dbc.h tools/crypto/ccp/*.c tools/crypto/ccp/*.py

AMD DISPLAY CORE

Mail

Harry Wentland <harry.wentland@amd.com>, Leo Li <sunpeng.li@amd.com>,
Rodrigo Siqueira <Rodrigo.Siqueira@amd.com>

Mailing list

amd-gfx@lists.freedesktop.org

Status

Supported

SCM

git <https://gitlab.freedesktop.org/agd5f/linux.git>

Files

drivers/gpu/drm/amd/display/

AMD FAM15H PROCESSOR POWER MONITORING DRIVER

Mail

Huang Rui <ray.huang@amd.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Supported

Files

hwmon/fam15h_power drivers/hwmon/fam15h_power.c

AMD FCH GPIO DRIVER

Mail

Enrico Weigelt, metux IT consult <info@metux.net>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

drivers/gpio/gpio-amd-fch.c include/linux/platform_data/gpio/
gpio-amd-fch.h

AMD GEODE CS5536 USB DEVICE CONTROLLER DRIVER

Mailing list

linux-geode@lists.infradead.org (moderated for non-subscribers)

Status

Orphan

Files

drivers/usb/gadget/udc/amd5536udc.*

AMD GEODE PROCESSOR/CHIPSET SUPPORT

Mail

Andres Salomon <dilinger@queued.net>

Mailing list

linux-geode@lists.infradead.org (moderated for non-subscribers)

Status

Supported

Web-page

http://www.amd.com/us-en/ConnectivitySolutions/TechnicalResources/0,,50_2334_2452_11363,00.html

Files

arch/x86/include/asm/geode.h drivers/char/hw_random/geode-rng.c
drivers/crypto/geode* drivers/video/fbdev/geode/

AMD HSMP DRIVER

Mail

Naveen Krishna Chatradhi <naveenkrishna.chatradhi@amd.com>

Reviewer

Carlos Bilbao <carlos.bilbao@amd.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

arch/x86/amd_hsmp arch/x86/include/asm/amd_hsmp.h arch/x86/include/
uapi/asm/amd_hsmp.h drivers/platform/x86/amd/hsmp.c

AMD IOMMU (AMD-VI)

Mail

Joerg Roedel <joro@8bytes.org>

Reviewer

Suravee Suthikulpanit <suravee.suthikulpanit@amd.com>

Mailing list

iommu@lists.linux.dev

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/joro/iommu.git](https://git.kernel.org/pub/scm/linux/kernel/git/joro/iommu.git)

Files

drivers/iommu/amd/ include/linux/amd-iommu.h

AMD KFD

Mail

Felix Kuehling <Felix.Kuehling@amd.com>

Mailing list

amd-gfx@lists.freedesktop.org

Status

Supported

SCM

git <https://gitlab.freedesktop.org/agd5f/linux.git>

Files

drivers/gpu/drm/amd/amdgpu/amdgpu_amdkfd*.ch drivers/gpu/drm/
amd/amdkfd/ drivers/gpu/drm/amd/include/cik_structs.h drivers/gpu/
drm/amd/include/kgd_kfd_interface.h drivers/gpu/drm/amd/include/
v9_structs.h drivers/gpu/drm/amd/include/vi_structs.h include/uapi/
linux/kfd_ioctl.h include/uapi/linux/kfd_sysfs.h

AMD MP2 I2C DRIVER**Mail**

Elie Morisse <syniurge@gmail.com>, Shyam Sundar S K <shyam-sundar.s-k@amd.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

drivers/i2c/busses/i2c-amd-mp2*

AMD PDS CORE DRIVER**Mail**

Shannon Nelson <shannon.nelson@amd.com>, Brett Creeley
<brett.creeley@amd.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

networking/device_drivers/ethernet/amd/pds_core drivers/net/ethernet/
amd/pds_core/ include/linux/pds/

AMD PMC DRIVER**Mail**

Shyam Sundar S K <Shyam-sundar.S-k@amd.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/amd/pmc/

AMD PMF DRIVER

Mail

Shyam Sundar S K <Shyam-sundar.S-k@amd.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-amd-pmf drivers/platform/x86/amd/pmf/

AMD POWERPLAY AND SWSMU

Mail

Evan Quan <evan.quan@amd.com>

Mailing list

amd-gfx@lists.freedesktop.org

Status

Supported

SCM

git <https://gitlab.freedesktop.org/agd5f/linux.git>

Files

drivers/gpu/drm/amd/pm/

AMD PSTATE DRIVER

Mail

Huang Rui <ray.huang@amd.com>

Mailing list

linux-pm@vger.kernel.org

Status

Supported

Files

admin-guide/pm/amd-pstate drivers/cpufreq/amd-pstate* include/linux/amd-pstate.h tools/power/x86/amd_pstate_tracer/amd_pstate_trace.py

AMD PTDMA DRIVER

Mail

Sanjay R Mehta <sanju.mehta@amd.com>

Mailing list

dmaengine@vger.kernel.org

Status

Maintained

Files

drivers/dma/ptdma/

AMD SEATTLE DEVICE TREE SUPPORT

Mail

Suravee Suthikulpanit <suravee.suthikulpanit@amd.com>, Tom Lendacky
<thomas.lendacky@amd.com>

Status

Supported

Files

arch/arm64/boot/dts/amd/

AMD SENSOR FUSION HUB DRIVER

Mail

Basavaraj Natikar <basavaraj.natikar@amd.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

Documentation/hid/amd-sfh* drivers/hid/amd-sfh-hid/

AMD SPI DRIVER

Mail

Sanjay R Mehta <sanju.mehta@amd.com>

Status

Maintained

Files

drivers/spi/spi-amd.c

AMD XGBE DRIVER

Mail

"Shyam Sundar S K" <Shyam-sundar.S-k@amd.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

arch/arm64/boot/dts/amd/amd-seattle-xgbe*.dtsi drivers/net/ethernet/
amd/xgbe/

AMLOGIC DDR PMU DRIVER

Mail

Jiucheng Xu <jiucheng.xu@amlogic.com>

Mailing list

linux-amlogic@lists.infradead.org

Status

Supported

Web-page

<http://www.amlogic.com>

Files

admin-guide/perf/meson-ddr-pmu Documentation/devicetree/bindings/perf/
amlogic,g12-ddr-pmu.yaml drivers/perf/amlogic/ include/soc/amlogic/

AMPHION VPU CODEC V4L2 DRIVER

Mail

Ming Qian <ming.qian@nxp.com>, Zhou Peng <eagle.zhou@nxp.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/amphion,vpu.yaml drivers/
media/platform/amphion/

AMS AS73211 DRIVER

Mail

Christian Eggers <ceggers@arri.de>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/light/ams,as73211.yaml
drivers/iio/light/as73211.c

AMT (Automatic Multicast Tunneling)

Mail

Taehee Yoo <ap420073@gmail.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/netdev/net.git](https://git.kernel.org/pub/scm/linux/kernel/git/netdev/net.git) git
[git://git.kernel.org/pub/scm/linux/kernel/git/netdev/net-next.git](https://git.kernel.org/pub/scm/linux/kernel/git/netdev/net-next.git)

Files

drivers/net/amt.c

ANALOG DEVICES INC AD3552R DRIVER

Mail

Nuno Sá <nuno.sa@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/iio/dac/adi,ad3552r.yaml drivers/
iio/dac/ad3552r.c

ANALOG DEVICES INC AD4130 DRIVER

Mail

Cosmin Tanislav <cosmin.tanislav@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/ABI/testing/sysfs-bus-iio-adc-ad4130 Documentation/
devicetree/bindings/iio/adc/adi,ad4130.yaml drivers/iio/adc/ad4130.c

ANALOG DEVICES INC AD7091R DRIVER

Mail

Marcelo Schmitt <marcelo.schmitt@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<http://ez.analog.com/community/linux-device-drivers>

Files

Documentation/devicetree/bindings/iio/adc/adi,ad7091r* drivers/iio/
adc/drivers/iio/ad7091r*

ANALOG DEVICES INC AD7192 DRIVER

Mail

Alexandru Tachici <alexandru.tachici@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/iio/ad7192.yaml drivers/
iio/ad7192.c

ANALOG DEVICES INC AD7292 DRIVER

Mail

Marcelo Schmitt <marcelo.schmitt1@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/iio/ad7292.yaml drivers/
iio/ad7292.c

ANALOG DEVICES INC AD7293 DRIVER

Mail

Antoniu Miclaus <antoniu.miclaus@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/iio/dac/ad7293.yaml drivers/
iio/dac/ad7293.c

ANALOG DEVICES INC AD74115 DRIVER

Mail

Cosmin Tanislav <cosmin.tanislav@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/iio/addac/ad74115.yaml
drivers/iio/addac/ad74115.c

ANALOG DEVICES INC AD74413R DRIVER

Mail

Cosmin Tanislav <cosmin.tanislav@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/iio/addac/adi,ad74413r.yaml
drivers/iio/addac/ad74413r.c include/dt-bindings/iio/addac/adi,
ad74413r.h

ANALOG DEVICES INC AD7768-1 DRIVER

Mail

Michael Hennerich <Michael.Hennerich@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/iio/ad7768/adi,ad7768-1.yaml drivers/
iio/ad7768/ad7768-1.c

ANALOG DEVICES INC AD7780 DRIVER

Mail

Michael Hennerich <Michael.Hennerich@analog.com>, Renato Lui Geh <renatogeh@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/iio/ad7780/adi,ad7780.yaml drivers/
iio/ad7780/ad7780.c

ANALOG DEVICES INC ADA4250 DRIVER

Mail

Antoniu Miclaus <antoniu.miclaus@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/iio/amplifiers/adi,ada4250.yaml
drivers/iio/amplifiers/ada4250.c

ANALOG DEVICES INC ADF4377 DRIVER

Mail

Antoniu Miclaus <antoniu.miclaus@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/iio/frequency/adi,adf4377.yaml
drivers/iio/frequency/adf4377.c

ANALOG DEVICES INC ADGS1408 DRIVER

Mail

Mircea Caprioru <mircea.caprioru@analog.com>

Status

Supported

Files

Documentation/devicetree/bindings/mux/adi,adgs1408.txt drivers/mux/
adgs1408.c

ANALOG DEVICES INC ADIN DRIVER

Mail

Michael Hennerich <michael.hennerich@analog.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/net/adi,adin.yaml drivers/net/phy/
adin.c

ANALOG DEVICES INC ADIS DRIVER LIBRARY

Mail

Nuno Sa <nuno.sa@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Files

drivers/iio/imu/adis.c drivers/iio/imu/adis_buffer.c drivers/iio/imu/
adis_trigger.c include/linux/iio/imu/adis.h

ANALOG DEVICES INC ADIS16460 DRIVER

Mail

Dragos Bogdan <dragos.bogdan@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/iio/imu/adi,adis16460.yaml
drivers/iio/imu/adis16460.c

ANALOG DEVICES INC ADIS16475 DRIVER

Mail

Nuno Sa <nuno.sa@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/iio/imu/adi,adis16475.yaml
drivers/iio/imu/adis16475.c

ANALOG DEVICES INC ADM1177 DRIVER

Mail

Michael Hennerich <Michael.Hennerich@analog.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/hwmon/adi,adm1177.yaml drivers/
hwmon/adm1177.c

ANALOG DEVICES INC ADMV1013 DRIVER

Mail

Antoniu Miclaus <antoniu.miclaus@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/iio/frequency/adi,admv1013.yaml
drivers/iio/frequency/admv1013.c

ANALOG DEVICES INC ADMV1014 DRIVER

Mail

Antoniu Miclaus <antoniu.miclaus@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/iio/frequency/adi,admv1014.yaml
drivers/iio/frequency/admv1014.c

ANALOG DEVICES INC ADMV8818 DRIVER

Mail

Antoniu Miclaus <antoniu.miclaus@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/iio/filter/adi,admv8818.yaml
drivers/iio/filter/admv8818.c

ANALOG DEVICES INC ADP5061 DRIVER

Mail

Michael Hennerich <Michael.Hennerich@analog.com>

Mailing list

linux-pm@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

drivers/power/supply/adp5061.c

ANALOG DEVICES INC ADRF6780 DRIVER

Mail

Antoniu Miclaus <antoniu.miclaus@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/iio/frequency/adi,adrf6780.yaml
drivers/iio/frequency/adrf6780.c

ANALOG DEVICES INC ADV7180 DRIVER

Mail

Lars-Peter Clausen <lars@metafoo.de>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/media/i2c/adv7180.yaml drivers/
media/i2c/adv7180.c

ANALOG DEVICES INC ADV748X DRIVER

Mail

Kieran Bingham <kieran.bingham@ideasonboard.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/i2c/adv748x.yaml drivers/
media/i2c/adv748x/*

ANALOG DEVICES INC ADV7511 DRIVER

Mail

Hans Verkuil <hverkuil-cisco@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/i2c/adv7511*

ANALOG DEVICES INC ADV7604 DRIVER

Mail

Hans Verkuil <hverkuil-cisco@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/i2c/adv7604.yaml drivers/
media/i2c/adv7604*

ANALOG DEVICES INC ADV7842 DRIVER

Mail

Hans Verkuil <hverkuil-cisco@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/i2c/adv7842*

ANALOG DEVICES INC ADXRS290 DRIVER

Mail

Nishant Malpani <nish.malpani25@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/iio/gyroscope/adi,adxrs290.yaml
drivers/iio/gyro/adxrs290.c

ANALOG DEVICES INC ASOC CODEC DRIVERS**Mail**

Lars-Peter Clausen <lars@metafoo.de>, Nuno Sá <nuno.sa@analog.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Supported

Web-page

<http://wiki.analog.com/> <https://ez.analog.com/linux-software-drivers>

Files

sound/soc/codecs/ad1* sound/soc/codecs/ad7* sound/soc/codecs/adau*
sound/soc/codecs/adav* sound/soc/codecs/sigmadsp.* sound/soc/codecs/
ssm*

ANALOG DEVICES INC DMA DRIVERS**Mail**

Lars-Peter Clausen <lars@metafoo.de>

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

drivers/dma/dma-axi-dmac.c

ANALOG DEVICES INC IIO DRIVERS**Mail**

Lars-Peter Clausen <lars@metafoo.de>, Michael Hennerich
<Michael.Hennerich@analog.com>

Status

Supported

Web-page

<http://wiki.analog.com/> <https://ez.analog.com/linux-software-drivers>

Files

Documentation/ABI/testing/sysfs-bus-iio-frequency-ad9523
Documentation/ABI/testing/sysfs-bus-iio-frequency-adf4350

Documentation/devicetree/bindings/iio/*/adi,*	Documentation/
devicetree/bindings/iio/adclltd,ltc2496.yaml	Documentation/
devicetree/bindings/iio/adclltd,ltc2497.yaml	drivers/iio/*/ad*
drivers/iio/adclt249*	drivers/iio/amplifiers/hmc425a.c
staging/iio/*/ad*	drivers/

Excluded

drivers/iio/*/adjd*

ANALOG DEVICES INC MAX31760 DRIVER

Mail

Ibrahim Tilki <Ibrahim.Tilki@analog.com>

Status

Maintained

Web-page

<http://wiki.analog.com/> <https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/hwmon/adi,max31760.yaml	hw-
mon/max31760	drivers/hwmon/max31760.c

ANALOGBITS PLL LIBRARIES

Mail

Paul Walmsley	< paul.walmsley@sifive.com >,	Samuel	Holland
	< samuel.holland@sifive.com >		

Status

Supported

Files

drivers/clock/analogbits/* include/linux/clock/analogbits*

ANDROID DRIVERS

Mail

Greg Kroah-Hartman <gregkh@linuxfoundation.org>, Arve Hjønnervåg <arve@android.com>, Todd Kjos <tkjos@android.com>, Martijn Coenen <maco@android.com>, Joel Fernandes <joel@joelfernandes.org>, Christian Brauner <christian@brauner.io>, Carlos Llamas <cmllamas@google.com>, Suren Baghdasaryan <surenb@google.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/gregkh/staging.git](https://git.kernel.org/pub/scm/linux/kernel/git/gregkh/staging.git)

Files

drivers/android/

ANDROID GOLDFISH PIC DRIVER

Mail

Miodrag Dinic <miodrag.dinic@mips.com>

Status

Supported

Files

Documentation/devicetree/bindings/interrupt-controller/google,
goldfish-pic.txt drivers/irqchip/irq-goldfish-pic.c

ANDROID GOLDFISH RTC DRIVER

Mail

Jiaxun Yang <jiaxun.yang@flygoat.com>

Status

Supported

Files

Documentation/devicetree/bindings/rtc/google,goldfish-rtc.txt
drivers/rtc/rtc-goldfish.c

AOA (Apple Onboard Audio) ALSA DRIVER

Mail

Johannes Berg <johannes@sipsolutions.net>

Mailing list

linuxppc-dev@lists.ozlabs.org, alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

sound/aoa/

APEX EMBEDDED SYSTEMS STX104 IIO DRIVER

Mail

William Breathitt Gray <william.gray@linaro.org>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

drivers/iio/addac/stx104.c

APM DRIVER

Mail

Jiri Kosina <jikos@kernel.org>

Status

Odd fixes

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/jikos/apm.git](https://git.kernel.org/pub/scm/linux/kernel/git/jikos/apm.git)

Files

arch/x86/kernel/apm_32.c drivers/char/apm-emulation.c include/linux/apm_bios.h include/uapi/linux/apm_bios.h

APPARMOR SECURITY MODULE

Mail

John Johansen <john.johansen@canonical.com>, John Johansen
<john@apparmor.net>

Mailing list

apparmor@lists.ubuntu.com (moderated for non-subscribers)

Status

Supported

Web-page

apparmor.net

bugs

<https://gitlab.com/apparmor/apparmor-kernel>

chat

<irc://irc.oftc.net/apparmor>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/jj/linux-apparmor](https://git.kernel.org/pub/scm/linux/kernel/git/jj/linux-apparmor)
<https://gitlab.com/apparmor/apparmor-kernel.git>

Files

admin-guide/LSM/apparmor security/apparmor/

APPLE BCM5974 MULTITOUCH DRIVER

Mail

Henrik Rydberg <rydberg@bitmath.org>

Mailing list

linux-input@vger.kernel.org

Status

Odd fixes

Files

drivers/input/mouse/bcm5974.c

APPLE PCIE CONTROLLER DRIVER

Mail

Alyssa Rosenzweig <alyssa@rosenzweig.io>, Marc Zyngier <maz@kernel.org>

Mailing list

linux-pci@vger.kernel.org

Status

Maintained

Files

drivers/pci/controller/pcie-apple.c

APPLE SMC DRIVER

Mail

Henrik Rydberg <rydberg@bitmath.org>

Mailing list

linux-hwmon@vger.kernel.org

Status

Odd fixes

Files

drivers/hwmon/applesmc.c

APPLETALK NETWORK LAYER

Mailing list

netdev@vger.kernel.org

Status

Odd fixes

Files

include/linux/atalk.h include/uapi/linux/atalk.h net/appletalk/

APPLIED MICRO (APM) X-GENE DEVICE TREE SUPPORT

Mail

Khuong Dinh <khuong@os.amperecomputing.com>

Status

Supported

Files

arch/arm64/boot/dts/apm/

APPLIED MICRO (APM) X-GENE SOC EDAC

Mail

Khuong Dinh <khuong@os.amperecomputing.com>

Status

Supported

Files

Documentation/devicetree/bindings/edac/apm-xgene-edac.txt drivers/
edac/xgene_edac.c

APPLIED MICRO (APM) X-GENE SOC ETHERNET (V2) DRIVER

Mail

Iyappan Subramanian <iyappan@os.amperecomputing.com>, Keyur Chudgar
<keyur@os.amperecomputing.com>

Status

Supported

Files

drivers/net/ethernet/apm/xgene-v2/

APPLIED MICRO (APM) X-GENE SOC ETHERNET DRIVER

Mail

Iyappan Subramanian <iyappan@os.amperecomputing.com>,
Keyur Chudgar <keyur@os.amperecomputing.com>, Quan Nguyen
<quan@os.amperecomputing.com>

Status

Supported

Files

Documentation/devicetree/bindings/net/apm-xgene-enet.txt
Documentation/devicetree/bindings/net/apm-xgene-mdio.txt drivers/
net/ethernet/apm/xgene/ drivers/net/mdio/mdio-xgene.c

APPLIED MICRO (APM) X-GENE SOC PMU

Mail

Khuong Dinh <khuong@os.amperecomputing.com>

Status

Supported

Files

admin-guide/perf/xgene-pmu Documentation/devicetree/bindings/perf/
apm-xgene-pmu.txt drivers/perf/xgene_pmu.c

APTINA CAMERA SENSOR PLL

Mail

Laurent Pinchart <Laurent.pinchart@ideasonboard.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/i2c/aptina-pll.*

AQUACOMPUTER D5 NEXT PUMP SENSOR DRIVER

Mail

Aleksa Savic <savicaleksa83@gmail.com>, Jack Doan <me@jackdoan.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/aquacomputer_d5next drivers/hwmon/aquacomputer_d5next.c

AQUANTIA ETHERNET DRIVER (atlantic)

Mail

Igor Russkikh <irusskikh@marvell.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Web-page

<https://www.marvell.com/>

Patchwork

<https://patchwork.kernel.org/project/netdevbpf/list/>

Files

networking/device_drivers/ethernet/aquantia/atlantic drivers/net/ethernet/
aquantia/atlantic/

AQUANTIA ETHERNET DRIVER PTP SUBSYSTEM

Mail

Egor Pomozov <epomozov@marvell.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Web-page

<http://www.aquantia.com>

Files

drivers/net/ethernet/aquantia/atlantic/aq_ptp*

AR0521 ON SEMICONDUCTOR CAMERA SENSOR DRIVER

Mail

Krzysztof Hałas <khalasa@piap.pl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/i2c/onnar0521.yaml
drivers/media/i2c/ar0521.c

ARASAN NAND CONTROLLER DRIVER

Mail

Miquel Raynal <miquel.raynal@bootlin.com>

Reviewer

Michał Simek <michal.simek@amd.com>

Mailing list

linux-mtd@lists.infradead.org

Status

Maintained

Files

Documentation/devicetree/bindings/mtd/arasan,nand-controller.yaml
drivers/mtd/nand/raw/arasan-nand-controller.c

ARC FRAMEBUFFER DRIVER**Mail**

Jaya Kumar <jayalk@intworks.biz>

Status

Maintained

Files

drivers/video/fbdev/arcfb.c drivers/video/fbdev/core/fb_defio.c

ARC PGU DRM DRIVER**Mail**

Alexey Brodtkin <abrodtkin@synopsys.com>

Status

Supported

Files

Documentation/devicetree/bindings/display/snps,arcpgu.txt drivers/
gpu/drm/tiny/arcpgu.c

ARCNET NETWORK LAYER**Mail**

Michael Grzeschik <m.grzeschik@pengutronix.de>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/arcnet/ include/uapi/linux/if_arcnet.h

ARM AND ARM64 SoC SUB-ARCHITECTURES (COMMON PARTS)**Mail**

Arnd Bergmann <arnd@arndb.de>, Olof Johansson <olof@lixom.net>,
soc@kernel.org

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

P

process/maintainer-soc

chat

<irc://irc.libera.chat/armlinux>

SCM

<git://git.kernel.org/pub/scm/linux/kernel/git/soc/soc.git>

Files

Documentation/process/maintainer-soc*.rst arch/arm/boot/dts/Makefile
arch/arm64/boot/dts/Makefile

ARM ARCHITECTED TIMER DRIVER

Mail

Mark Rutland <mark.rutland@arm.com>, Marc Zyngier <maz@kernel.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

arch/arm/include/asm/arch_timer.h arch/arm64/include/asm/arch_timer.
h drivers/clocksource/arm_arch_timer.c

ARM GENERIC INTERRUPT CONTROLLER DRIVERS

Mail

Marc Zyngier <maz@kernel.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/interrupt-controller/arm,gic*
arch/arm/include/asm/arch_gicv3.h arch/arm64/include/asm/arch_gicv3.
h drivers/irqchip/irq-gic*.h include/linux/irqchip/arm-gic*.h
include/linux/irqchip/arm-vgic-info.h

ARM HDLCD DRM DRIVER

Mail

Liviu Dudau <liviu.dudau@arm.com>

Status

Supported

Files

Documentation/devicetree/bindings/display/arm,hdlcd.yaml drivers/
gpu/drm/arm/hdlcd_*

ARM INTEGRATOR, VERSATILE AND REALVIEW SUPPORT

Mail

Linus Walleij <linus.walleij@linaro.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/arm/arm,integrator.yaml
Documentation/devicetree/bindings/arm/arm,realview.yaml
Documentation/devicetree/bindings/arm/arm,versatile.yaml
Documentation/devicetree/bindings/arm/arm,vexpress-juno.yaml
Documentation/devicetree/bindings/auxdisplay/arm,versatile-lcd.
yaml Documentation/devicetree/bindings/clock/arm,syscon-icst.
yaml Documentation/devicetree/bindings/i2c/arm,i2c-versatile.
yaml Documentation/devicetree/bindings/interrupt-controller/arm,
versatile-fpga-irq.txt Documentation/devicetree/bindings/mtd/
mtd-phymap.yaml arch/arm/boot/dts/arm/arm-realview-* arch/arm/
boot/dts/arm/integrator* arch/arm/boot/dts/arm/versatile* arch/
arm/mach-versatile/ drivers/bus/arm-integrator-lm.c drivers/clock/
versatile/ drivers/i2c/busses/i2c-versatile.c drivers/irqchip/
irq-versatile-fpga.c drivers/mtd/maps/phymap-versatile.* drivers/
power/reset/arm-versatile-reboot.c drivers/soc/versatile/

ARM KOMEDA DRM-KMS DRIVER

Mail

Liviu Dudau <liviu.dudau@arm.com>

Status

Supported

SCM

[git git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/arm,komeda.yaml

gpu/komeda-kms drivers/gpu/drm/arm/display/include/ drivers/gpu/
drm/arm/display/komeda/

ARM MALI PANFROST DRM DRIVER

Mail

Boris Brezillon <boris.brezillon@collabora.com>, Rob Herring
<robh@kernel.org>

Reviewer

Steven Price <steven.price@arm.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Supported

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

gpu/panfrost drivers/gpu/drm/panfrost/ include/uapi/drm/panfrost_drm.h

ARM MALI-DP DRM DRIVER

Mail

Liviu Dudau <liviu.dudau@arm.com>

Status

Supported

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/arm,malidp.yaml gpu/afbc
drivers/gpu/drm/arm/

ARM MFM AND FLOPPY DRIVERS

Mail

Ian Molton <spyro@f2s.com>

Status

Maintained

Files

arch/arm/include/asm/floppy.h arch/arm/mach-rpc/floppydma.S

ARM PMU PROFILING AND DEBUGGING

Mail

Will Deacon <will@kernel.org>, Mark Rutland <mark.rutland@arm.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/arm/pmu.yaml Documentation/
devicetree/bindings/perf/ arch/arm*/include/asm/hw_breakpoint.h
arch/arm*/include/asm/perf_event.h arch/arm*/kernel/hw_breakpoint.c
arch/arm*/kernel/perf_* drivers/perf/ include/linux/perf/arm_pmu*.h

ARM PORT

Mail

Russell King <linux@armlinux.org.uk>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Odd Fixes

Web-page

<http://www.armlinux.org.uk/>

SCM

git [git://git.armlinux.org.uk/~rmk/linux-arm.git](https://git.armlinux.org.uk/~rmk/linux-arm.git)

Files

arch/arm/

Excluded

arch/arm/boot/dts/

ARM PRIMECELL AACI PL041 DRIVER

Mail

Russell King <linux@armlinux.org.uk>

Status

Odd Fixes

Files

sound/arm/aaci.*

ARM PRIMECELL BUS SUPPORT

Mail

Russell King <linux@armlinux.org.uk>

Status

Odd Fixes

Files

drivers/amba/ include/linux/amba/bus.h

ARM PRIMECELL KMI PL050 DRIVER

Mail

Russell King <linux@armlinux.org.uk>

Status

Odd Fixes

Files

drivers/input/serio/ambakmi.* include/linux/amba/kmi.h

ARM PRIMECELL MMCI PL180/1 DRIVER

Mail

Russell King <linux@armlinux.org.uk>

Status

Odd Fixes

Files

drivers/mmc/host/mmci.* include/linux/amba/mmci.h

ARM PRIMECELL PL35X NAND CONTROLLER DRIVER

Mail

Miquel Raynal <miquel.raynal@bootlin.com>

Reviewer

Michal Simek <michal.simek@amd.com>

Mailing list

linux-mtd@lists.infradead.org

Status

Maintained

Files

Documentation/devicetree/bindings/mtd/arm,pl353-nand-r2p1.yaml
drivers/mtd/nand/raw/pl35x-nand-controller.c

ARM PRIMECELL PL35X SMC DRIVER

Mail

Miquel Raynal <miquel.raynal@bootlin.com>

Reviewer

Michal Simek <michal.simek@amd.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/memory-controllers/arm,pl35x-smc.
yaml drivers/memory/pl353-smc.c

ARM PRIMECELL SSP PL022 SPI DRIVER

Mail

Linus Walleij <linus.walleij@linaro.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/spi/spi-pl022.yaml drivers/spi/
spi-pl022.c

ARM PRIMECELL UART PL010 AND PL011 DRIVERS

Mail

Russell King <linux@armlinux.org.uk>

Status

Odd Fixes

Files

drivers/tty/serial/amba-pl01*.c include/linux/amba/serial.h

ARM PRIMECELL VIC PL190/PL192 DRIVER

Mail

Linus Walleij <linus.walleij@linaro.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/interrupt-controller/arm,vic.yaml
drivers/irqchip/irq-vic.c

ARM SMC WATCHDOG DRIVER

Mail

Julius Werner <jwerner@chromium.org>

Reviewer

Evan Benn <evanbenn@chromium.org>

Status

Maintained

Files

Documentation/devicetree/bindings/watchdog/arm-smc-wdt.yaml drivers/
watchdog/arm_smc_wdt.c

ARM SMMU DRIVERS

Mail

Will Deacon <will@kernel.org>

Reviewer

Robin Murphy <robin.murphy@arm.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/iommu/arm,smmu* drivers/iommu/arm/
drivers/iommu/io-pgtable-arm*

ARM SUB-ARCHITECTURES

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

chat

<irc://irc.libera.chat/armlinux>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/soc/soc.git](https://git.kernel.org/pub/scm/linux/kernel/git/soc/soc.git)

Files

arch/arm/mach-*/ arch/arm/plat-*/

ARM/ACTIONS SEMI ARCHITECTURE

Mail

Andreas Färber <afaerber@suse.de>, Manivannan Sadhasivam <manivannan.sadhasivam@linaro.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-actions@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/arm/actions.yaml Documentation/
devicetree/bindings/clock/actions,owl-cmu.txt Documentation/
devicetree/bindings/dma/owl-dma.yaml Documentation/devicetree/
bindings/i2c/i2c-owl.yaml Documentation/devicetree/bindings/
interrupt-controller/actions,owl-sirq.yaml Documentation/devicetree/
bindings/mmc/owl-mmc.yaml Documentation/devicetree/bindings/net/
actions,owl-ethernet.yaml Documentation/devicetree/bindings/pinctrl/
actions,* Documentation/devicetree/bindings/power/actions,owl-sps.
txt Documentation/devicetree/bindings/timer/actions,owl-timer.txt
arch/arm/boot/dts/actions/ arch/arm/mach-actions/ arch/arm64/boot/
dts/actions/ drivers/clocksource/timer-owl*
drivers/dma/owl-dma.c drivers/i2c/busses/i2c-owl.c drivers/irqchip/
irq-owl-sirq.c drivers/mmc/host/owl-mmc.c drivers/net/ethernet/
actions/ drivers/pinctrl/actions/* drivers/pmdomain/actions/ include/
dt-bindings/power/owl-* include/dt-bindings/reset/actions,* include/
linux/soc/actions/

Regex

owl

ARM/Allwinner SoC Clock Support

Mail

Emilio López <emilio@elopez.com.ar>

Status

Maintained

Files

drivers/clocksource/sunxi/

ARM/Allwinner sunXi SoC support

Mail

Chen-Yu Tsai <wens@csie.org>, Jernej Skrabec <jernej.skrabec@gmail.com>, Samuel Holland <samuel@sholland.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-sunxi@lists.linux.dev

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/sunxi/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/sunxi/linux.git)

Files

arch/arm/mach-sunxi/ arch/arm64/boot/dts/allwinner/ drivers/clock/
sunxi-ng/ drivers/pinctrl/sunxi/ drivers/soc/sunxi/

Regex

allwinner sun[x456789]i sun[25]0i

ARM/AMD PENSANDO ARM64 ARCHITECTURE

Mail

Brad Larson <blarson@amd.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Supported

Files

Documentation/devicetree/bindings/*/amd,pensando* arch/arm64/boot/
dts/amd/elba*

ARM/Amlogic Meson SoC CLOCK FRAMEWORK

Mail

Neil Armstrong <neil.armstrong@linaro.org>, Jerome Brunet
<jbrunet@baylibre.com>

Mailing list

linux-amlogic@lists.infradead.org

Status

Maintained

Files

Documentation/devicetree/bindings/clock/amlogic* drivers/clock/meson/
include/dt-bindings/clock/amlogic,a1* include/dt-bindings/clock/
gxbb* include/dt-bindings/clock/meson*

ARM/Amlogic Meson SoC Crypto Drivers

Mail

Corentin Labbe <clabbe@baylibre.com>

Mailing list

linux-crypto@vger.kernel.org, linux-amlogic@lists.infradead.org

Status

Maintained

Files

Documentation/devicetree/bindings/crypto/amlogic* drivers/crypto/
amlogic/

ARM/Amlogic Meson SoC Sound Drivers

Mail

Jerome Brunet <jbrunet@baylibre.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/sound/amlogic* sound/soc/meson/

ARM/Amlogic Meson SoC support

Mail

Neil Armstrong <neil.armstrong@linaro.org>, Kevin Hilman
<khilman@baylibre.com>

Reviewer

Jerome Brunet <jbrunet@baylibre.com>, Martin Blumenstingl <martin.blumenstingl@googlemail.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-amlogic@lists.infradead.org

Status

Maintained

Web-page

<http://linux-meson.com/>

Files

Documentation/devicetree/bindings/phy/amlogic* arch/arm/boot/dts/
amlogic/ arch/arm/mach-meson/ arch/arm64/boot/dts/amlogic/ drivers/
pmdomain/amlogic/ drivers/mmc/host/meson* drivers/phy/amlogic/
drivers/pinctrl/meson/ drivers/rtc/rtc-meson* drivers/soc/amlogic/

Regex

meson

ARM/Annapurna Labs ALPINE ARCHITECTURE

Mail

Tsahee Zidenberg <tsahee@annapurnalabs.com>, Antoine Tenart <ate-nart@kernel.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

arch/arm/boot/dts/amazon/ arch/arm/mach-alpine/ arch/arm64/boot/dts/
amazon/ drivers/*/alpine*

ARM/APPLE MACHINE SOUND DRIVERS

Mail

Martin Povišer <povik+lin@cutebit.org>

Mailing list

asahi@lists.linux.dev, alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/sound/adi,ssm3515.yaml
Documentation/devicetree/bindings/sound/apple,* sound/soc/apple/*
sound/soc/codecs/cs42l83-i2c.c sound/soc/codecs/ssm3515.c

ARM/APPLE MACHINE SUPPORT

Mail

Hector Martin <marcan@marcan.st>, Sven Peter <sven@svenpeter.dev>

Reviewer

Alyssa Rosenzweig <alyssa@rosenzweig.io>

Mailing list

asahi@lists.linux.dev, linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Web-page

<https://asahilinux.org>

bugs<https://github.com/AsahiLinux/linux/issues>**chat**<irc://irc.oftc.net/asahi-dev>**SCM**git <https://github.com/AsahiLinux/linux.git>**Files**

```

Documentation/devicetree/bindings/arm/apple.yaml      Documentation/
devicetree/bindings/arm/apple/*      Documentation/devicetree/bindings/
clock/apple,ncs.yaml      Documentation/devicetree/bindings/cpufreq/
apple,cluster-cpufreq.yaml      Documentation/devicetree/bindings/
dma/apple,admac.yaml      Documentation/devicetree/bindings/
i2c.yaml      Documentation/devicetree/bindings/interrupt-controller/
apple,*      Documentation/devicetree/bindings/iommu/apple,dart.
yaml      Documentation/devicetree/bindings/iommu/apple,sart.
yaml      Documentation/devicetree/bindings/mailbox/apple,mailbox.
yaml      Documentation/devicetree/bindings/net/bluetooth/brcm,
bcm4377-bluetooth.yaml      Documentation/devicetree/bindings/nvme/
apple,nvme-ans.yaml      Documentation/devicetree/bindings/nvmem/apple,
efuses.yaml      Documentation/devicetree/bindings/pci/apple,pcie.
yaml      Documentation/devicetree/bindings/pinctrl/apple,pinctrl.yaml
Documentation/devicetree/bindings/power/apple*      Documentation/
devicetree/bindings/pwm/apple,s5l-fpwm.yaml      Documentation/
devicetree/bindings/watchdog/apple,wdt.yaml      arch/arm64/boot/dts/
apple/  drivers/bluetooth/hci_bcm4377.c  drivers/clock/clock-apple-ncs.
c  drivers/cpufreq/apple-soc-cpufreq.c  drivers/dma/apple-admac.
c  drivers/pmdomain/apple/  drivers/i2c/busses/i2c-pasemi-core.c
drivers/i2c/busses/i2c-pasemi-platform.c  drivers/iommu/apple-dart.
c  drivers/iommu/io-pgtable-dart.c  drivers/irqchip/irq-apple-aic.c
drivers/nvme/host/apple.c  drivers/nvmem/apple-efuses.c  drivers/
pinctrl/pinctrl-apple-gpio.c  drivers/pwm/pwm-apple.c  drivers/
soc/apple/*  drivers/watchdog/apple_wdt.c  include/dt-bindings/
interrupt-controller/apple-aic.h include/dt-bindings/pinctrl/apple.h
include/linux/soc/apple/*

```

ARM/ARTPEC MACHINE SUPPORT**Mail**

Jesper Nilsson <jesper.nilsson@axis.com>, Lars Persson
 <lars.persson@axis.com>

Mailing listlinux-arm-kernel@axis.com**Status**

Maintained

Files

```

Documentation/devicetree/bindings/pinctrl/axis,artpec6-pinctrl.
txt arch/arm/boot/dts/axis/ arch/arm/mach-artpec drivers/clock/axis

```


drivers/crypto/axis drivers/mmc/host/usdhi6rol0.c drivers/pinctrl/
pinctrl-artpec*

ARM/ASPEED I2C DRIVER

Mail

Brendan Higgins <brendanhiggins@google.com>

Reviewer

Benjamin Herrenschmidt <benh@kernel.crashing.org>, Joel Stanley
<joel@jms.id.au>

Mailing list

linux-i2c@vger.kernel.org, openbmc@lists.ozlabs.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/i2c/aspeed,i2c.yaml Documentation/
devicetree/bindings/interrupt-controller/aspeed,ast2400-i2c-ic.txt
drivers/i2c/busses/i2c-aspeed.c drivers/irqchip/irq-aspeed-i2c-ic.c

ARM/ASPEED MACHINE SUPPORT

Mail

Joel Stanley <joel@jms.id.au>

Reviewer

Andrew Jeffery <andrew@codeconstruct.com.au>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-aspeed@lists.ozlabs.org (moderated for non-subscribers)

Status

Supported

Patchwork

<https://patchwork.ozlabs.org/project/linux-aspeed/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/joel/bmc.git](https://git.kernel.org/pub/scm/linux/kernel/git/joel/bmc.git)

Files

Documentation/devicetree/bindings/arm/aspeed/ arch/arm/boot/dts/
aspeed/ arch/arm/mach-aspeed/

Regex

aspeed

ARM/BITMAIN ARCHITECTURE

Mail

Manivannan Sadhasivam <manivannan.sadhasivam@linaro.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/arm/bitmain.yaml Documentation/
devicetree/bindings/clock/bitmain,bm1880-clk.yaml Documentation/
devicetree/bindings/pinctrl/bitmain,bm1880-pinctrl.txt arch/
arm64/boot/dts/bitmain/ drivers/clock/clock-bm1880.c drivers/pinctrl/
pinctrl-bm1880.c

ARM/CALXEDA HIGHBANK ARCHITECTURE

Mail

Andre Przywara <andre.przywara@arm.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

arch/arm/boot/dts/calxeda/ arch/arm/mach-highbank/

ARM/CAVIUM THUNDER NETWORK DRIVER

Mail

Sunil Goutham <sgoutham@marvell.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Supported

Files

drivers/net/ethernet/cavium/thunder/

ARM/CIRRUS LOGIC BK3 MACHINE SUPPORT

Mail

Lukasz Majewski <lukma@denx.de>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

arch/arm/mach-ep93xx/ts72xx.c

ARM/CIRRUS LOGIC CLPS711X ARM ARCHITECTURE

Mail

Alexander Shiyan <shc_work@mail.ru>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Odd Fixes

Regex

clps711x

ARM/CIRRUS LOGIC EP93XX ARM ARCHITECTURE

Mail

Hartley Sweeten <hsweeten@visionengravers.com>, Alexander Sverdlin
<alexander.sverdlin@gmail.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/iio/adc/cirrus,ep9301-adc.yaml
Documentation/devicetree/bindings/sound/cirrus,ep9301-* arch/arm/
boot/compressed/misc-ep93xx.h arch/arm/mach-ep93xx/ drivers/iio/adc/
ep93xx_adc.c

ARM/CLKDEV SUPPORT

Mail

Russell King <linux@armlinux.org.uk>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://git.armlinux.org.uk/~rmk/linux-arm.git](https://git.armlinux.org.uk/~rmk/linux-arm.git) clkdev

Files

drivers/clockdev/clockdev.c

ARM/CONEXANT DIGICOLOR MACHINE SUPPORT

Mail

Baruch Siach <baruch@tkos.co.il>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

arch/arm/boot/dts/cnxt/

Regex

digicolor

ARM/CORESIGHT FRAMEWORK AND DRIVERS

Mail

Suzuki K Poulose <suzuki.poulose@arm.com>

Reviewer

Mike Leach <mike.leach@linaro.org>, James Clark <james.clark@arm.com>

Mailing list

coresight@lists.linaro.org (moderated for non-subscribers), linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/coresight/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/coresight/linux.git)

Files

Documentation/ABI/testing/sysfs-bus-coresight-devices-
Documentation/devicetree/bindings/arm/arm,coresight-*.yaml

Documentation/devicetree/bindings/arm/arm,embedded-trace-extension.
yaml Documentation/devicetree/bindings/arm/arm,
trace-buffer-extension.yaml Documentation/devicetree/bindings/
arm/qcom,coresight-*.yaml Documentation/trace/coresight/* drivers/
hwtracing/coresight/* include/dt-bindings/arm/coresight-cti-dt.h
include/linux/coresight* include/uapi/linux/coresight* samples/
coresight/* tools/perf/Documentation/arm-coresight.txt tools/
perf/arch/arm/util/auxtrace.c tools/perf/arch/arm/util/cs-etm.
c tools/perf/arch/arm/util/cs-etm.h tools/perf/arch/arm/util/
pmu.c tools/perf/tests/shell/*coresight* tools/perf/tests/shell/
coresight/* tools/perf/tests/shell/lib/*coresight* tools/perf/util/
cs-etm-decoder/* tools/perf/util/cs-etm.*

ARM/CORTINA SYSTEMS GEMINI ARM ARCHITECTURE

Mail

Hans Ulli Kroll <ulli.kroll@googlemail.com>, Linus Walleij <linus.walleij@linaro.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://github.com/ulli-kroll/linux.git](https://github.com/ulli-kroll/linux.git)

Files

Documentation/devicetree/bindings/arm/gemini.yaml Documentation/
devicetree/bindings/net/cortina,gemini-ethernet.yaml Documentation/
devicetree/bindings/pinctrl/cortina,gemini-pinctrl.txt
Documentation/devicetree/bindings rtc/faraday,ftrtc010.yaml arch/
arm/boot/dts/gemini/ arch/arm/mach-gemini/ drivers/crypto/gemini/
drivers/net/ethernet/cortina/ drivers/pinctrl/pinctrl-gemini.c
drivers/rtc/rtc-ftrtc010.c

ARM/CZ.NIC TURRIS SUPPORT

Mail

Marek Behún <kabel@kernel.org>

Status

Maintained

Web-page

<https://www.turris.cz/>

Files

Documentation/ABI/testing/debugfs-moxtet Documentation/ABI/
testing/sysfs-bus-moxtet-devices Documentation/ABI/testing/
sysfs-firmware-turris-mox-rwtm Documentation/devicetree/bindings/
bus/moxtet.txt Documentation/devicetree/bindings/firmware/

```

cznic,turris-mox-rwtm.txt      Documentation/devicetree/bindings/
gpio/gpio-moxtet.txt          Documentation/devicetree/bindings/leds/
cznic,turris-omnia-leds.yaml   Documentation/devicetree/bindings/
watchdog/armada-37xx-wdt.txt   drivers/bus/moxtet.c           drivers/
firmware/turris-mox-rwtm.c     drivers/gpio/gpio-moxtet.c     drivers/
leds/leds-turris-omnia.c       drivers/mailbox/armada-37xx-rwtm-mailbox.c
drivers/watchdog/armada_37xx_wdt.c include/dt-bindings/bus/moxtet.h
include/linux/armada-37xx-rwtm-mailbox.h include/linux/moxtet.h

```

ARM/FARADAY FA526 PORT

Mail

Hans Ulli Kroll <ulli.kroll@googlemail.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://git.berlios.de/gemini-board](https://git.berlios.de/gemini-board)

Files

arch/arm/mm/*-fa*

ARM/FOOTBRIDGE ARCHITECTURE

Mail

Russell King <linux@armlinux.org.uk>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Web-page

<http://www.armlinux.org.uk/>

Files

arch/arm/include/asm/hardware/dec21285.h arch/arm/mach-footbridge/

ARM/FREESCALE IMX / MXC ARM ARCHITECTURE

Mail

Shawn Guo <shawnguo@kernel.org>, Sascha Hauer
<s.hauer@pengutronix.de>

Reviewer

Pengutronix Kernel Team <kernel@pengutronix.de>, Fabio Estevam <festevam@gmail.com>

Mailing list

imx@lists.linux.dev, linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/shawnguo/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/shawnguo/linux.git)

Files

arch/arm/boot/dts/nxp/imx/ arch/arm/boot/dts/nxp/mxs/ arch/arm64/
boot/dts/freescale/

Excluded

arch/arm64/boot/dts/freescale/fsl-* arch/arm64/boot/dts/freescale/
qoriq-* drivers/media/i2c/

Regex

imx mxs

ARM/FREESCALE LAYERSCAPE ARM ARCHITECTURE

Mail

Shawn Guo <shawnguo@kernel.org>, Li Yang <leoyang.li@nxp.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/shawnguo/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/shawnguo/linux.git)

Files

arch/arm/boot/dts/nxp/ls/ arch/arm64/boot/dts/freescale/fsl-* arch/
arm64/boot/dts/freescale/qoriq-*

ARM/FREESCALE VYBRID ARM ARCHITECTURE

Mail

Shawn Guo <shawnguo@kernel.org>, Sascha Hauer
<s.hauer@pengutronix.de>

Reviewer

Pengutronix Kernel Team <kernel@pengutronix.de>, Stefan Agner <stefan@agner.ch>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/shawnguo/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/shawnguo/linux.git)

Files

arch/arm/boot/dts/nxp/vf/ arch/arm/mach-imx/*vf610*

ARM/GUMSTIX MACHINE SUPPORT**Mail**

Steve Sakoman <sakoman@gmail.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

ARM/HISILICON SOC SUPPORT**Mail**

Wei Xu <xuwei5@hisilicon.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Supported

Web-page

<http://www.hisilicon.com>

SCM

git <https://github.com/hisilicon/linux-hisi.git>

Files

arch/arm/boot/dts/hisilicon/ arch/arm/mach-hisi/ arch/arm64/boot/dts/
hisilicon/

ARM/HP JORNADA 7XX MACHINE SUPPORT**Mail**

Kristoffer Ericson <kristoffer.ericson@gmail.com>

Status

Maintained

Web-page

www.jlime.com

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/kristoffer/linux-hpc.git](https://git.kernel.org/pub/scm/linux/kernel/git/kristoffer/linux-hpc.git)

Files

arch/arm/mach-sa1100/include/mach/jornada720.h arch/arm/mach-sa1100/
jornada720.c

ARM/HPE GXP ARCHITECTURE

Mail

Jean-Marie Verdun <verdun@hpe.com>, Nick Hawkins
<nick.hawkins@hpe.com>

Status

Maintained

Files

Documentation/devicetree/bindings/arm/hpe,gxp.yaml Documentation/
devicetree/bindings/hwmon/hpe,gxp-fan-ctrl.yaml Documentation/
devicetree/bindings/i2c/hpe,gxp-i2c.yaml Documentation/devicetree/
bindings/spi/hpe,gxp-spifi.yaml Documentation/devicetree/bindings/
timer/hpe,gxp-timer.yaml hwmon/gxp-fan-ctrl arch/arm/boot/dts/hpe/
arch/arm/mach-hpe/ drivers/clocksource/timer-gxp.c drivers/hwmon/
gxp-fan-ctrl.c drivers/i2c/busses/i2c-gxp.c drivers/spi/spi-gxp.c
drivers/watchdog/gxp-wdt.c

ARM/IGEP MACHINE SUPPORT

Mail

Enric Balletbo i Serra <eballetbo@gmail.com>, Javier Martinez Canillas
<javier@dowhile0.org>

Mailing list

linux-omap@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated
for non-subscribers)

Status

Maintained

Files

arch/arm/boot/dts/ti/omap/omap3-igep*

ARM/INTEL IXP4XX ARM ARCHITECTURE

Mail

Linus Walleij <linusw@kernel.org>, Imre Kaloz <kaloz@openwrt.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/arm/intel-ixp4xx.yaml
Documentation/devicetree/bindings/gpio/intel,ixp4xx-gpio.
yaml Documentation/devicetree/bindings/interrupt-controller/
intel,ixp4xx-interrupt.yaml Documentation/devicetree/bindings/
memory-controllers/intel,ixp4xx-expansion* Documentation/devicetree/
bindings/rng/intel,ixp46x-rng.yaml Documentation/devicetree/
bindings/timer/intel,ixp4xx-timer.yaml arch/arm/boot/dts/intel/ixp/

```
arch/arm/mach-ixp4xx/  drivers/bus/intel-ixp4xx-eb.c  drivers/char/
hw_random/ixp4xx-rng.c  drivers/clocksource/timer-ixp4xx.c  drivers/
crypto/intel/ixp4xx/ixp4xx_crypto.c          drivers/gpio/gpio-ixp4xx.c
drivers/irqchip/irq-ixp4xx.c  drivers/net/ethernet/xscale/ixp4xx_eth.
c      drivers/net/wan/ixp4xx_hss.c      drivers/soc/ixp4xx/ixp4xx-npe.c
drivers/soc/ixp4xx/ixp4xx-qmgr.c      include/linux/soc/ixp4xx/npe.h
include/linux/soc/ixp4xx/qmgr.h
```

ARM/INTEL KEEMBAY ARCHITECTURE

Mail

Paul J. Murphy <paul.j.murphy@intel.com>, Daniele Alessandrelli
<daniele.alessandrelli@intel.com>

Status

Maintained

Files

```
Documentation/devicetree/bindings/arm/intel,keembay.yaml      arch/
arm64/boot/dts/intel/keembay-evm.dts      arch/arm64/boot/dts/intel/
keembay-soc.dtsi
```

ARM/INTEL XSC3 (MANZANO) ARM CORE

Mail

Lennert Buytenhek <kernel@wantstofly.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

ARM/LG1K ARCHITECTURE

Mail

Chanho Min <chanho.min@lge.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

```
arch/arm64/boot/dts/lg/
```

ARM/LPC18XX ARCHITECTURE

Mail

Vladimir Zapolskiy <vz@mleia.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/i2c/i2c-lpc2k.txt arch/arm/boot/dts/nxp/lpc/lpc43* drivers/i2c/busses/i2c-lpc2k.c drivers/memory/pl172.c drivers/mtd/spi-nor/controllers/nxp-spifi.c drivers/rtc/rtc-lpc24xx.c

Regex

lpc18xx

ARM/LPC32XX SOC SUPPORT

Mail

Vladimir Zapolskiy <vz@mleia.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://github.com/vzapolskiy/linux-lpc32xx.git](https://github.com/vzapolskiy/linux-lpc32xx.git)

Files

Documentation/devicetree/bindings/i2c/i2c-pnx.txt arch/arm/boot/dts/nxp/lpc/lpc32* arch/arm/mach-lpc32xx/ drivers/i2c/busses/i2c-pnx.c drivers/net/ethernet/nxp/lpc_eth.c drivers/usb/host/ohci-nxp.c drivers/watchdog/pnx4008_wdt.c

Regex

lpc32xx

ARM/Marvell Dove/MV78xx0/Orion SOC support

Mail

Andrew Lunn <andrew@lunn.ch>, Sebastian Hesselbarth <sebastian.hesselbarth@gmail.com>, Gregory Clement <gory.clement@bootlin.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git git://git.kernel.org/pub/scm/linux/kernel/git/gclement/mvebu.git

Files

Documentation/devicetree/bindings/arm/marvell/marvell,dove.txt
 Documentation/devicetree/bindings/arm/marvell/marvell,orion5x.txt
 Documentation/devicetree/bindings/soc/dove/ arch/arm/boot/dts/
 marvell/dove* arch/arm/boot/dts/marvell/orion5x* arch/arm/mach-dove/
 arch/arm/mach-mv78xx0/ arch/arm/mach-orion5x/ arch/arm/plat-orion/
 drivers/bus/mvebu-mbus.c drivers/soc/dove/

ARM/Marvell Kirkwood and Armada 370, 375, 38x, 39x, XP, 3700, 7K/8K, CN9130 SOC support**Mail**

Andrew Lunn <andrew@lunn.ch>, Gregory Clement <gregory.clement@bootlin.com>,
 Sebastian Hesselbarth <sebastian.hesselbarth@gmail.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git git://git.kernel.org/pub/scm/linux/kernel/git/gclement/mvebu.git

Files

Documentation/devicetree/bindings/arm/marvell/ arch/arm/boot/dts/
 marvell/armada* arch/arm/boot/dts/marvell/kirkwood* arch/arm/configs/
 mvebu*_defconfig arch/arm/mach-mvebu/ arch/arm64/boot/dts/marvell/
 drivers/clock/mvebu/ drivers/cpufreq/armada-37xx-cpufreq.c drivers/
 cpufreq/armada-8k-cpufreq.c drivers/cpufreq/mvebu-cpufreq.c drivers/
 irqchip/irq-armada-370-xp.c drivers/irqchip/irq-mvebu-* drivers/
 pinctrl/mvebu/ drivers/rtc/rtc-armada38x.c

ARM/Mediatek RTC DRIVER**Mail**

Eddie Huang <eddie.huang@mediatek.com>, Sean Wang
 <sean.wang@mediatek.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-mediatek@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/rtc/rtc-mt2712.txt Documentation/
 devicetree/bindings/rtc/rtc-mt7622.txt drivers/rtc/rtc-mt2712.c
 drivers/rtc/rtc-mt6397.c drivers/rtc/rtc-mt7622.c

ARM/Mediatek SoC support

Mail

Matthias Brugger <matthias.bgg@gmail.com>, AngeloGioacchino Del Regno <angelogioacchino.delregno@collabora.com>

Mailing list

linux-kernel@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-mediatek@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Web-page

<https://mtk.wiki.kernel.org/>

chat

<irc://irc.libera.chat/linux-mediatek>

Files

arch/arm/boot/dts/mediatek/ arch/arm/mach-mediatek/ arch/arm64/boot/dts/mediatek/ drivers/soc/mediatek/

Regex

mtk mt[2678]

Content regex

mediatek

ARM/Mediatek USB3 PHY DRIVER

Mail

Chunfeng Yun <chunfeng.yun@mediatek.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-mediatek@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/phy/mediatek,* drivers/phy/mediatek/

ARM/MICROCHIP (ARM64) SoC support

Mail

Conor Dooley <conor@kernel.org>, Nicolas Ferre <nico-las.ferre@microchip.com>, Claudiu Beznea <claudiu.beznea@tuxon.dev>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Supported

SCM

git <https://git.kernel.org/pub/scm/linux/kernel/git/at91/linux.git>

Files

arch/arm64/boot/dts/microchip/

ARM/Microchip (AT91) SoC support

Mail

Nicolas Ferre <nicolas.ferre@microchip.com>, Alexandre Belloni <alexandre.belloni@bootlin.com>, Claudiu Beznea <claudiu.beznea@tuxon.dev>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Supported

Web-page

<http://www.linux4sam.org>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/at91/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/at91/linux.git)

Files

arch/arm/boot/dts/microchip/at91* arch/arm/boot/dts/microchip/sama*
arch/arm/include/debug/at91.S arch/arm/mach-at91/ drivers/memory/
atmel* drivers/watchdog/sama5d4_wdt.c include/soc/at91/

Excluded

drivers/input/touchscreen/atmel_mxt_ts.c

Regex

at91 atmel

ARM/Microchip Sparx5 SoC support

Mail

Lars Povlsen <lars.povlsen@microchip.com>, Steen
Hegelund <Steen.Hegelund@microchip.com>, Daniel Machon
<daniel.machon@microchip.com>, UNGLinuxDriver@microchip.com

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Supported

Files

arch/arm64/boot/dts/microchip/sparx* drivers/net/ethernet/microchip/
vcap/ drivers/pinctrl/pinctrl-microchip-sgpio.c

Regex

sparx5

ARM/MILBEAUT ARCHITECTURE

Mail

Taichi Sugaya <sugaya.taichi@socionext.com>, Takao Orito
<orito.takao@socionext.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

arch/arm/boot/dts/socionext/milbeaut* arch/arm/mach-milbeaut/

Regex

milbeaut

ARM/MStar/Sigmastar Armv7 SoC support

Mail

Daniel Palmer <daniel@thingy.jp>, Romain Perier <romain.perier@gmail.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Web-page

<http://linux-chenxing.org/>

SCM

git [git://github.com/linux-chenxing/linux.git](https://github.com/linux-chenxing/linux.git)

Files

Documentation/devicetree/bindings/arm/mstar/* Documentation/
 devicetree/bindings/clock/mstar,msc313-mpll.yaml Documentation/
 devicetree/bindings/gpio/mstar,msc313-gpio.yaml arch/arm/boot/
 dts/sigmastar/ arch/arm/mach-mstar/ drivers/clk/mstar/ drivers/
 clocksource/timer-msc313e.c drivers/gpio/gpio-msc313.c drivers/rtc/
 rtc-msc313.c drivers/watchdog/msc313e_wdt.c include/dt-bindings/
 clock/mstar-* include/dt-bindings/gpio/msc313-gpio.h

ARM/NOMADIK/Ux500 ARCHITECTURES**Mail**

Linus Walleij <linus.walleij@linaro.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/linusw/linux-nomadik.git](https://git.kernel.org/pub/scm/linux/kernel/git/linusw/linux-nomadik.git)

Files

Documentation/devicetree/bindings/arm/ste-* Documentation/
 devicetree/bindings/arm/ux500.yaml Documentation/devicetree/
 bindings/arm/ux500/ Documentation/devicetree/bindings/i2c/st,
 nomadik-i2c.yaml arch/arm/boot/dts/st/ste-* arch/arm/mach-nomadik/
 arch/arm/mach-ux500/ drivers/clk/clk-nomadik.c drivers/clocksource/
 clksrc-dbx500-prcmu.c drivers/dma/ste_dma40* drivers/pmdomain/st/
 ste-ux500-pm-domain.c drivers/hwspinlock/u8500_hsem.c drivers/i2c/
 busses/i2c-nomadik.c drivers/iio/adc/ab8500-gpadc.c drivers/mfd/
 ab8500* drivers/mfd/abx500* drivers/mfd/db8500* drivers/pinctrl/
 nomadik/ drivers/rtc/rtc-ab8500.c drivers/rtc/rtc-pl031.c drivers/
 soc/ux500/

ARM/NUVOTON MA35 ARCHITECTURE**Mail**

Jacky Huang <ychuang3@nuvoton.com>, Shan-Chun Hung
 <schung@nuvoton.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Supported

Files

Documentation/devicetree/bindings/*/*/*ma35* Documentation/
 devicetree/bindings/*/*ma35* arch/arm64/boot/dts/nuvoton/*ma35*
 drivers/*/*/*ma35* drivers/*/*ma35*

Content regex

ma35d1

ARM/NUVOTON NPCM ARCHITECTURE

Mail

Avi Fishman <avifishman70@gmail.com>, Tomer Maimon <tmaimon77@gmail.com>, Tali Perry <tali.perry1@gmail.com>

Reviewer

Patrick Venture <venture@google.com>, Nancy Yuen <yuenn@google.com>, Benjamin Fair <benjaminfair@google.com>

Mailing list

openbmc@lists.ozlabs.org (moderated for non-subscribers)

Status

Supported

Files

Documentation/devicetree/bindings/*/npcm* Documentation/
devicetree/bindings/*/npcm* Documentation/devicetree/bindings/
rtc/nuvoton,nct3018y.yaml arch/arm/boot/dts/nuvoton/nuvoton-npcm*
arch/arm/mach-npcm/ arch/arm64/boot/dts/nuvoton/ drivers/*/npcm*
drivers/*/npcm* drivers/rtc/rtc-nct3018y.c include/dt-bindings/
clock/nuvoton,npcm7xx-clock.h include/dt-bindings/clock/nuvoton,
npcm845-clk.h

ARM/NUVOTON NPCM VIDEO ENGINE DRIVER

Mail

Joseph Liu <kwliu@nuvoton.com>, Marvin Lin <kflin@nuvoton.com>

Mailing list

linux-media@vger.kernel.org, openbmc@lists.ozlabs.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/media/nuvoton,npcm-ece.yaml
Documentation/devicetree/bindings/media/nuvoton,npcm-vcd.yaml
userspace-api/media/drivers/npcm-video drivers/media/platform/nuvoton/
include/uapi/linux/npcm-video.h

ARM/NUVOTON WPCM450 ARCHITECTURE

Mail

Jonathan Neuschäfer <j.neuschaefer@gmx.net>

Mailing list

openbmc@lists.ozlabs.org (moderated for non-subscribers)

Status

Maintained

Web-page

<https://github.com/neuschaefer/wpcm450/wiki>

Files

Documentation/devicetree/bindings/*/*wpcm* arch/arm/boot/dts/
nuvoton/nuvoton-wpcm450* arch/arm/configs/wpcm450_defconfig arch/
arm/mach-npcm/wpcm450.c drivers/*/*wpcm* drivers/*/*wpcm*

ARM/NXP S32G ARCHITECTURE

Mail

Chester Lin <chester62515@gmail.com>

Reviewer

Andreas Färber <afaerber@suse.de>, Matthias Brugger <mbrugger@suse.com>, NXP S32 Linux Team <s32@nxp.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

arch/arm64/boot/dts/freescale/s32g*.dts*

ARM/Orion SoC/Technologic Systems TS-78xx platform support

Mail

Alexander Clouter <alex@digriz.org.uk>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Web-page

<http://www.digriz.org.uk/ts78xx/kernel>

Files

arch/arm/mach-orion5x/ts78xx-*

ARM/QUALCOMM CHROMEBOOK SUPPORT

Reviewer

cros-qcom-dts-watchers@chromium.org

Files

arch/arm64/boot/dts/qcom/sc7180* arch/arm64/boot/dts/qcom/sc7280*
arch/arm64/boot/dts/qcom/sdm845-cheza*

ARM/QUALCOMM SUPPORT

Mail

Bjorn Andersson <andersson@kernel.org>, Konrad Dybcio <konrad.dybcio@linaro.org>

Mailing list

linux-arm-msm@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/qcom/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/qcom/linux.git)

Files

Documentation/devicetree/bindings/*/qcom* Documentation/devicetree/
bindings/soc/qcom/ arch/arm/boot/dts/qcom/ arch/arm/configs/
qcom_defconfig arch/arm/mach-qcom/ arch/arm64/boot/dts/qcom/ drivers/
//pm8???-* drivers/*/*/qcom* drivers/*/*/qcom/ drivers/*/qcom*
drivers/*/qcom/ drivers/bluetooth/btqcomsmd.c drivers/clocksource/
timer-qcom.c drivers/cpuidle/cpuidle-qcom-spm.c drivers/extcon/
extcon-qcom* drivers/i2c/busses/i2c-qcom-geni.c drivers/i2c/busses/
i2c-qup.c drivers/iommu/msm* drivers/mfd/ssbi.c drivers/mmc/host/
mmci_qcom* drivers/mmc/host/sdhci-msm.c drivers/pci/controller/dwc/
pcie-qcom.c drivers/phy/qualcomm/ drivers/power/*/msm* drivers/reset/
reset-qcom-* drivers/spi/spi-geni-qcom.c drivers/spi/spi-qcom-qspi.c
drivers/spi/spi-qup.c drivers/tty/serial/msm_serial.c drivers/ufs/
host/ufs-qcom* drivers/usb/dwc3/dwc3-qcom.c include/dt-bindings/*/qcom*
include/linux/*/qcom* include/linux/soc/qcom/

ARM/RDA MICRO ARCHITECTURE

Mail

Manivannan Sadhasivam <manivannan.sadhasivam@linaro.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-unisoc@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/arm/rda.yaml Documentation/
 devicetree/bindings/gpio/gpio-rda.yaml Documentation/devicetree/
 bindings/interrupt-controller/rda,8810pl-intc.yaml Documentation/
 devicetree/bindings/serial/rda,8810pl-uart.yaml Documentation/
 devicetree/bindings/timer/rda,8810pl-timer.yaml arch/arm/boot/
 dts/unisoc/ drivers/clocksource/timer-rda.c drivers/gpio/gpio-rda.c
 drivers/irqchip/irq-rda-intc.c drivers/tty/serial/rda-uart.c

ARM/REALTEK ARCHITECTURE**Mail**

Andreas Färber <afaerber@suse.de>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-realtek-soc@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/arm/realtek.yaml arch/arm/boot/
 dts/realtek/ arch/arm/mach-realtek/ arch/arm64/boot/dts/realtek/

ARM/RISC-V/RENESAS ARCHITECTURE**Mail**

Geert Uytterhoeven <geert+renesas@glider.be>, Magnus Damm <magnus.damm@gmail.com>

Mailing list

linux-renesas-soc@vger.kernel.org

Status

Supported

Patchwork

<http://patchwork.kernel.org/project/linux-renesas-soc/list/>

chat

<irc://irc.libera.chat/renesas-soc>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/geert/renesas-devel.git](https://git.kernel.org/pub/scm/linux/kernel/git/geert/renesas-devel.git) next

Files

Documentation/devicetree/bindings/hwinfo/renesas,prrr.yaml
 Documentation/devicetree/bindings/soc/renesas/ arch/arm/boot/dts/
 renesas/ arch/arm/configs/shmobile_defconfig arch/arm/include/debug/
 renesas-scif.S arch/arm/mach-shmobile/ arch/arm64/boot/dts/renesas/
 arch/riscv/boot/dts/renesas/ drivers/pmdomain/renesas/ drivers/soc/
 renesas/ include/linux/soc/renesas/

Content regex

\brenesas,

ARM/RISPC ARCHITECTURE

Mail

Russell King <linux@armlinux.org.uk>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Web-page

<http://www.armlinux.org.uk/>

Files

arch/arm/include/asm/hardware/ioc.h arch/arm/include/asm/hardware/
iomd.h arch/arm/include/asm/hardware/memc.h arch/arm/mach-rpc/
drivers/net/ethernet/8390/etherh.c drivers/net/ethernet/i825xx/
ether1* drivers/net/ethernet/seeq/ether3* drivers/scsi/arm/

ARM/Rockchip SoC support

Mail

Heiko Stuebner <heiko@sntech.de>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-rockchip@lists.infradead.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/mmind/linux-rockchip.git](https://git.kernel.org/pub/scm/linux/kernel/git/mmind/linux-rockchip.git)

Files

Documentation/devicetree/bindings/i2c/i2c-rk3x.yaml Documentation/
devicetree/bindings/mmc/rockchip-dw-mshc.yaml Documentation/
devicetree/bindings/spi/spi-rockchip.yaml arch/arm/boot/dts/
rockchip/ arch/arm/mach-rockchip/ drivers/*//*rockchip* drivers/
/*rockchip* drivers/clock/rockchip/ drivers/i2c/busses/i2c-rk3x.c
sound/soc/rockchip/

Regex

rockchip

ARM/SAMSUNG S3C, S5P AND EXYNOS ARM ARCHITECTURES**Mail**

Krzysztof Kozłowski <krzysztof.kozlowski@linaro.org>

Reviewer

Alim Akhtar <alim.akhtar@samsung.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-samsung-soc@vger.kernel.org

Status

Maintained

P

[process/maintainer-soc-clean-dts](#)

Patchwork

<https://patchwork.kernel.org/project/linux-samsung-soc/list/>

bugs

<mailto:linux-samsung-soc@vger.kernel.org>

chat

<irc://irc.libera.chat/linux-exynos>

SCM

[git git://git.kernel.org/pub/scm/linux/kernel/git/krzk/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/krzk/linux.git)

Files

Documentation/arch/arm/samsung/ Documentation/devicetree/
bindings/arm/samsung/ Documentation/devicetree/bindings/hwinfo/
samsung,* Documentation/devicetree/bindings/power/pd-samsung.yaml
Documentation/devicetree/bindings/soc/samsung/ arch/arm/boot/
dts/samsung/ arch/arm/mach-exynos*/ arch/arm/mach-s3c/ arch/arm/
mach-s5p*/ arch/arm64/boot/dts/exynos/ drivers/*/s3c24* drivers/*/s3c24*
drivers/*/s3c64xx* drivers/*/s5pv210* drivers/clocksource/
samsung_pwm_timer.c drivers/memory/samsung/ drivers/pwm/pwm-samsung.c
drivers/soc/samsung/ drivers/tty/serial/samsung* include/clocksource/
samsung_pwm.h include/linux/platform_data/s3c* include/linux/
serial_s3c.h include/linux/soc/samsung/

Regex

exynos s3c64xx s5pv210

ARM/SAMSUNG S5P SERIES 2D GRAPHICS ACCELERATION (G2D) SUPPORT**Mail**

Łukasz Stelmach <l.stelmach@samsung.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/platform/samsung/s5p-g2d/

ARM/SAMSUNG S5P SERIES HDMI CEC SUBSYSTEM SUPPORT

Mail

Marek Szyprowski <m.szyprowski@samsung.com>

Mailing list

linux-samsung-soc@vger.kernel.org, linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/cec/samsung,s5p-cec.yaml
drivers/media/cec/platform/s5p/

ARM/SAMSUNG S5P SERIES JPEG CODEC SUPPORT

Mail

Andrzej Pietrasiewicz <andrzejtp2010@gmail.com>, Jacek
Anaszewski <jacek.anaszewski@gmail.com>, Sylwester Nawrocki
<s.nawrocki@samsung.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-
media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/samsung,s5pv210-jpeg.yaml
drivers/media/platform/samsung/s5p-jpeg/

ARM/SAMSUNG S5P SERIES Multi Format Codec (MFC) SUPPORT

Mail

Marek Szyprowski <m.szyprowski@samsung.com>, Andrzej Hajda <an-
drzej.hajda@intel.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-
media@vger.kernel.org

Status

Maintained

Files

drivers/media/platform/samsung/s5p-mfc/

ARM/SOCFPGA ARCHITECTURE

Mail

Dinh Nguyen <dinguyen@kernel.org>

Status

Maintained

Web-page

<http://www.rocketboards.org>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/dinguyen/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/dinguyen/linux.git)

Files

arch/arm/boot/dts/intel/socfpga/ arch/arm/configs/socfpga_defconfig
arch/arm/mach-socfpga/ arch/arm64/boot/dts/altera/ arch/arm64/boot/
dts/intel/

ARM/SOCFPGA CLOCK FRAMEWORK SUPPORT

Mail

Dinh Nguyen <dinguyen@kernel.org>

Status

Maintained

Files

drivers/clock/socfpga/

ARM/SOCFPGA EDAC SUPPORT

Mail

Dinh Nguyen <dinguyen@kernel.org>

Status

Maintained

Files

drivers/edac/altera_edac.[ch]

ARM/SPREADTRUM SoC SUPPORT

Mail

Orson Zhai <orsonzhai@gmail.com>, Baolin Wang <baolin.wang7@gmail.com>,
Chunyan Zhang <zhang.lyra@gmail.com>

Status

Maintained

Files

arch/arm64/boot/dts/sprd

Regex

sprd sc27xx sc2731

ARM/STI ARCHITECTURE

Mail

Patrice Chotard <patrice.chotard@foss.st.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Web-page

<http://www.stlinux.com>

Files

Documentation/devicetree/bindings/i2c/st,sti-i2c.yaml Documentation/
devicetree/bindings/spi/st,ssc-spi.yaml arch/arm/boot/dts/st/sti*
arch/arm/mach-sti/ drivers/ata/ahci_st.c drivers/char/hw_random/
st-rng.c drivers/clocksource/arm_global_timer.c drivers/clocksource/
clksrc_st_lpc.c drivers/cpufreq/sti-cpufreq.c drivers/dma/st_fdma*
drivers/i2c/busses/i2c-st.c drivers/media/platform/st/sti/c8sectpfe/
drivers/media/rc/st_rc.c drivers/mmc/host/sdhci-st.c drivers/phy/
st/phy-miphy28lp.c drivers/phy/st/phy-stih407-usb.c drivers/pinctrl/
pinctrl-st.c drivers/remoteproc/st_remoteproc.c drivers/remoteproc/
st_slim_rproc.c drivers/reset/sti/ drivers/rtc/rtc-st-lpc.c drivers/
tty/serial/st-asc.c drivers/usb/dwc3/dwc3-st.c drivers/usb/host/
ehci-st.c drivers/usb/host/ohci-st.c drivers/watchdog/st_lpc_wdt.c
include/linux/remoteproc/st_slim_rproc.h

ARM/STM32 ARCHITECTURE

Mail

Maxime Coquelin <mcoquelin.stm32@gmail.com>, Alexandre Torgue <alexandre.torgue@foss.st.com>

Mailing list

linux-stm32@st-md-mailman.stormreply.com (moderated for non-subscribers),
linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/atorgue/stm32.git](https://git.kernel.org/pub/scm/linux/kernel/git/atorgue/stm32.git) stm32-next

Files

arch/arm/boot/dts/st/stm32* arch/arm/mach-stm32/ arch/arm64/boot/dts/
st/ drivers/clocksource/armv7m_systick.c

Regex

stm32 stm

ARM/SUNPLUS SP7021 SOC SUPPORT**Mail**

Qin Jian <qinjian@cqplus1.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Web-page

<https://sunplus-tibbo.atlassian.net/wiki/spaces/doc/overview>

Files

Documentation/devicetree/bindings/arm/sunplus,sp7021.yaml
 Documentation/devicetree/bindings/clock/sunplus,sp7021-clkc.
 yaml Documentation/devicetree/bindings/interrupt-controller/
 sunplus,sp7021-intc.yaml Documentation/devicetree/bindings/reset/
 sunplus,reset.yaml arch/arm/boot/dts/sunplus/ arch/arm/configs/
 sp7021_defconfig drivers/clk/clk-sp7021.c drivers/irqchip/
 irq-sp7021-intc.c drivers/reset/reset-sunplus.c include/dt-bindings/
 clock/sunplus,sp7021-clkc.h include/dt-bindings/reset/sunplus,
 sp7021-reset.h

ARM/Synaptics SoC support**Mail**

Jisheng Zhang <jszhang@kernel.org>, Sebastian Hesselbarth <sebastian.hesselbarth@gmail.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

arch/arm/boot/dts/synaptics/ arch/arm/mach-berlin/ arch/arm64/boot/
 dts/synaptics/

ARM/TEGRA HDMI CEC SUBSYSTEM SUPPORT**Mail**

Hans Verkuil <hverkuil-cisco@xs4all.nl>

Mailing list

linux-tegra@vger.kernel.org, linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/cec/nvidia,tegra114-cec.
 yaml drivers/media/cec/platform/tegra/

ARM/TESLA FSD SoC SUPPORT

Mail

Alim Akhtar <alim.akhtar@samsung.com>, linux-fsd@tesla.com

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-samsung-soc@vger.kernel.org

Status

Maintained

Files

arch/arm64/boot/dts/tesla/

ARM/TEXAS INSTRUMENT AEMIF/EMIF DRIVERS

Mail

Santosh Shilimkar <ssantosh@kernel.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

drivers/memory/*emif*

ARM/TEXAS INSTRUMENT KEYSTONE ARCHITECTURE

Mail

Nishanth Menon <nm@ti.com>, Santosh Shilimkar <ssantosh@kernel.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/ti/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/ti/linux.git)

Files

arch/arm/boot/dts/ti/keystone/ arch/arm/mach-keystone/

ARM/TEXAS INSTRUMENT KEYSTONE CLOCK FRAMEWORK

Mail

Santosh Shilimkar <ssantosh@kernel.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

drivers/clock/keystone/

ARM/TEXAS INSTRUMENT KEYSTONE CLOCKSOURCE

Mail

Santosh Shilimkar <ssantosh@kernel.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-kernel@vger.kernel.org

Status

Maintained

Files

drivers/clocksource/timer-keystone.c

ARM/TEXAS INSTRUMENT KEYSTONE RESET DRIVER

Mail

Santosh Shilimkar <ssantosh@kernel.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

drivers/power/reset/keystone-reset.c

ARM/TEXAS INSTRUMENTS K3 ARCHITECTURE

Mail

Nishanth Menon <nm@ti.com>, Vignesh Raghavendra <vigneshr@ti.com>, Tero Kristo <kristo@kernel.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Supported

Files

Documentation/devicetree/bindings/arm/ti/k3.yaml Documentation/
devicetree/bindings/hwinfo/ti,k3-socinfo.yaml arch/arm64/boot/dts/
ti/Makefile arch/arm64/boot/dts/ti/k3-*

ARM/TOSHIBA VISCONTI ARCHITECTURE

Mail

Nobuhiro Iwamatsu <nobuhiro1.iwamatsu@toshiba.co.jp>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/iwamatsu/linux-visconti.git](https://git.kernel.org/pub/scm/linux/kernel/git/iwamatsu/linux-visconti.git)

Files

Documentation/devicetree/bindings/arm/toshiba.yaml Documentation/
devicetree/bindings/clock/toshiba,tmpv770x-pipltct.yaml
Documentation/devicetree/bindings/clock/toshiba,tmpv770x-pismu.yaml
Documentation/devicetree/bindings/gpio/toshiba,gpio-visconti.yaml
Documentation/devicetree/bindings/net/toshiba,visconti-dwmac.yaml
Documentation/devicetree/bindings/pci/toshiba,visconti-pcie.yaml
Documentation/devicetree/bindings/pinctrl/toshiba,visconti-pinctrl.
yaml Documentation/devicetree/bindings/watchdog/toshiba,
visconti-wdt.yaml arch/arm64/boot/dts/toshiba/ drivers/clock/visconti/
drivers/gpio/gpio-visconti.c drivers/net/ethernet/stmicro/stmmac/
dwmac-visconti.c drivers/pci/controller/dwc/pcie-visconti.c drivers/
pinctrl/visconti/ drivers/watchdog/visconti_wdt.c

Regex

visconti

ARM/UNIPHIER ARCHITECTURE

Mail

Kunihiko Hayashi <hayashi.kunihiko@socionext.com>, Masami Hiramatsu
<mhiramat@kernel.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/arm/socionext/uniphier.yaml
Documentation/devicetree/bindings/gpio/socionext,uniphier-gpio.
yaml Documentation/devicetree/bindings/pinctrl/socionext,
uniphier-pinctrl.yaml Documentation/devicetree/bindings/soc/
socionext/socionext,uniphier*.yaml arch/arm/boot/dts/socionext/

```
uniphier*    arch/arm/include/asm/hardware/cache-uniphier.h    arch/
arm/mm/cache-uniphier.c    arch/arm64/boot/dts/socionext/uniphier*
drivers/bus/uniphier-system-bus.c drivers/clock/uniphier/ drivers/dma/
uniphier-mdmac.c drivers/gpio/gpio-uniphier.c drivers/i2c/busses/
i2c-uniphier* drivers/irqchip/irq-uniphier-aidet.c drivers/mmc/host/
uniphier-sd.c drivers/pinctrl/uniphier/ drivers/reset/reset-uniphier.
c drivers/tty/serial/8250/8250_uniphier.c
```

Regex

uniphier

ARM/VERSATILE EXPRESS PLATFORM**Mail**

Liviu Dudau <liviu.dudau@arm.com>, Sudeep Holla <sudeep.holla@arm.com>, Lorenzo Pieralisi <lpieralisi@kernel.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Regex

mps2 vexpress

Files

```
arch/arm/mach-versatile/    arch/arm64/boot/dts/arm/    drivers/
clocksource/timer-versatile.c
```

Excluded

```
drivers/cpufreq/vexpress-spc-cpufreq.c    Documentation/devicetree/
bindings/arm/arm,vexpress-juno.yaml
```

ARM/VFP SUPPORT**Mail**

Russell King <linux@armlinux.org.uk>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Web-page

<http://www.armlinux.org.uk/>

Files

```
arch/arm/vfp/
```

ARM/VT8500 ARM ARCHITECTURE

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Orphan

Files

Documentation/devicetree/bindings/i2c/i2c-wmt.txt arch/arm/
mach-vt8500/ drivers/clocksource/timer-vt8500.c drivers/i2c/busses/
i2c-wmt.c drivers/mmc/host/wmt-sdmmc.c drivers/pwm/pwm-vt8500.c
drivers/rtc/rtc-vt8500.c drivers/tty/serial/vt8500_serial.c drivers/
usb/host/ehci-platform.c drivers/usb/host/uhci-platform.c drivers/
video/fbdev/vt8500lcdfb.* drivers/video/fbdev/wm8505fb* drivers/
video/fbdev/wmt_ge_rops.*

ARM/ZYNQ ARCHITECTURE

Mail

Michal Simek <michal.simek@amd.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Supported

Web-page

<http://wiki.xilinx.com>

SCM

git <https://github.com/Xilinx/linux-xlnx.git>

Files

Documentation/devicetree/bindings/i2c/cdns,i2c-r1p10.yaml
Documentation/devicetree/bindings/i2c/xlnx,xps-iic-2.00.a.
yaml Documentation/devicetree/bindings/memory-controllers/
snps,dw-umctl2-ddrc.yaml Documentation/devicetree/bindings/
memory-controllers/xlnx,zynq-ddrc-a05.yaml Documentation/devicetree/
bindings/soc/xilinx/xilinx.yaml Documentation/devicetree/bindings/
spi/xlnx,zynq-qspi.yaml arch/arm/mach-zynq/ drivers/clocksource/
timer-cadence-ttc.c drivers/cpuidle/cpuidle-zynq.c drivers/edac/
synopsys_edac.c drivers/i2c/busses/i2c-cadence.c drivers/i2c/busses/
i2c-xiic.c drivers/mmc/host/sdhci-of-arasan.c

Regex

zynq xilinx

ARM64 PORT (AARCH64 ARCHITECTURE)

Mail

Catalin Marinas <catalin.marinas@arm.com>, Will Deacon <will@kernel.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/arm64/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/arm64/linux.git)

Files

Documentation/arch/arm64/ arch/arm64/ tools/testing/selftests/arm64/

Excluded

arch/arm64/boot/dts/

ARROW SPEEDCHIPS XRS7000 SERIES ETHERNET SWITCH DRIVER

Mail

George McCollister <george.mccollister@gmail.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/dsa/arrow,xrs700x.yaml
drivers/net/dsa/xrs700x/* net/dsa/tag_xrs700x.c

AS3645A LED FLASH CONTROLLER DRIVER

Mail

Sakari Ailus <sakari.ailus@iki.fi>

Mailing list

linux-leds@vger.kernel.org

Status

Maintained

Files

drivers/leds/flash/leds-as3645a.c

ASAHI KASEI AK7375 LENS VOICE COIL DRIVER

Mail

Tianshu Qiu <tian.shu.qiu@intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/asahi-kasei,ak7375.yaml
drivers/media/i2c/ak7375.c

ASAHI KASEI AK8974 DRIVER

Mail

Linus Walleij <linus.walleij@linaro.org>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<http://www.akm.com/>

Files

drivers/iio/magnetometer/ak8974.c

AOSONG AGS02MA TVOC SENSOR DRIVER

Mail

Anshul Dalal <anshulusr@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/chemical/aosong,ags02ma.yaml
drivers/iio/chemical/ags02ma.c

ASC7621 HARDWARE MONITOR DRIVER

Mail

George Joseph <george.joseph@fairview5.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/asc7621 drivers/hwmon/asc7621.c

ASIX AX88796C SPI ETHERNET ADAPTER

Mail

Łukasz Stelmach <l.stelmach@samsung.com>

Status

Maintained

Files

Documentation/devicetree/bindings/net/asix,ax88796c.yaml drivers/
net/ethernet/asix/ax88796c_*

ASIX PHY DRIVER [RUST]

Mail

FUJITA Tomonori <fujita.tomonori@gmail.com>

Reviewer

Trevor Gross <tmgross@umich.edu>

Mailing list

netdev@vger.kernel.org, rust-for-linux@vger.kernel.org

Status

Maintained

Files

drivers/net/phy/ax88796b_rust.rs

ASPEED CRYPTO DRIVER

Mail

Neal Liu <neal_liu@aspeedtech.com>

Mailing list

linux-aspeed@lists.ozlabs.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/crypto/aspeed,* drivers/crypto/aspeed/

ASPEED PECI CONTROLLER

Mail

Iwona Winiarska <iwona.winiarska@intel.com>

Mailing list

linux-aspeed@lists.ozlabs.org (moderated for non-subscribers),
openbmc@lists.ozlabs.org (moderated for non-subscribers)

Status

Supported

Files

Documentation/devicetree/bindings/peci/peci-aspeed.yaml drivers/peci/controller/peci-aspeed.c

ASPEED PINCTRL DRIVERS

Mail

Andrew Jeffery <andrew@codeconstruct.com.au>

Mailing list

linux-aspeed@lists.ozlabs.org (moderated for non-subscribers),
openbmc@lists.ozlabs.org (moderated for non-subscribers), linux-gpio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pinctrl/aspeed,* drivers/pinctrl/aspeed/

ASPEED SCU INTERRUPT CONTROLLER DRIVER

Mail

Eddie James <eajames@linux.ibm.com>

Mailing list

linux-aspeed@lists.ozlabs.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/interrupt-controller/aspeed,
ast2xxx-scu-ic.txt drivers/irqchip/irq-aspeed-scu-ic.c include/
dt-bindings/interrupt-controller/aspeed-scu-ic.h

ASPEED SD/MMC DRIVER

Mail

Andrew Jeffery <andrew@codeconstruct.com.au>

Mailing list

linux-aspeed@lists.ozlabs.org (moderated for non-subscribers),
openbmc@lists.ozlabs.org (moderated for non-subscribers), linux-mmc@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/mmc/aspeed,sdhci.yaml drivers/mmc/host/sdhci-of-aspeed*

ASPEED SMC SPI DRIVER

Mail

Chin-Ting Kuo <chin-ting_kuo@aspeedtech.com>, Cédric Le Goater
<clg@kaod.org>

Mailing list

linux-aspeed@lists.ozlabs.org (moderated for non-subscribers),
openbmc@lists.ozlabs.org (moderated for non-subscribers), linux-spi@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/spi/aspeed,ast2600-fmc.yaml
drivers/spi/spi-aspeed-smc.c

ASPEED USB UDC DRIVER

Mail

Neal Liu <neal_liu@aspeedtech.com>

Mailing list

linux-aspeed@lists.ozlabs.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/usb/aspeed,ast2600-udc.yaml
drivers/usb/gadget/udc/aspeed_udc.c

ASPEED VIDEO ENGINE DRIVER

Mail

Eddie James <ejames@linux.ibm.com>

Mailing list

linux-media@vger.kernel.org, openbmc@lists.ozlabs.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/media/aspeed-video.txt drivers/
media/platform/aspeed/

ASUS EC HARDWARE MONITOR DRIVER

Mail

Eugene Shalygin <eugene.shalygin@gmail.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

drivers/hwmon/asus-ec-sensors.c

ASUS NOTEBOOKS AND EEEPC ACPI/WMI EXTRAS DRIVERS

Mail

Corentin Chary <corentin.chary@gmail.com>, Luke D. Jones <luke@ljones.dev>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Web-page

<https://asus-linux.org/>

Files

drivers/platform/x86/asus*.c drivers/platform/x86/eeepc*.c

ASUS TF103C DOCK DRIVER

Mail

Hans de Goede <hdegoede@redhat.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/pdx86/platform-drivers-x86.git](https://git.kernel.org/pub/scm/linux/kernel/git/pdx86/platform-drivers-x86.git)

Files

`drivers/platform/x86/asus-tf103c-dock.c`

ASUS WIRELESS RADIO CONTROL DRIVER

Mail

João Paulo Rechi Vita <jprvita@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

`drivers/platform/x86/asus-wireless.c`

ASUS WMI HARDWARE MONITOR DRIVER

Mail

Ed Brindley <kernel@maidavale.org>, Denis Pauk <pauk.denis@gmail.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

`drivers/hwmon/asus_wmi_sensors.c`

ASYMMETRIC KEYS

Mail

David Howells <dhowells@redhat.com>

Mailing list

keyrings@vger.kernel.org

Status

Maintained

Files

crypto/asymmetric-keys crypto/asymmetric_keys/ include/crypto/pkcs7.h
include/crypto/public_key.h include/linux/verification.h

ASYNCHRONOUS TRANSFERS/TRANSFORMS (IOAT) API

Reviewer

Dan Williams <dan.j.williams@intel.com>

Status

Odd fixes

Web-page

<http://sourceforge.net/projects/xscaleiop>

Files

crypto/async-tx-api crypto/async_tx/ include/linux/async_tx.h

AT24 EEPROM DRIVER

Mail

Bartosz Golaszewski <brgl@bgdev.pl>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/brgl/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/brgl/linux.git)

Files

Documentation/devicetree/bindings/eeprom/at24.yaml drivers/misc/
eeprom/at24.c

ATA OVER ETHERNET (AOE) DRIVER

Mail

"Justin Sanders" <justin@coraid.com>

Status

Supported

Web-page

<http://www.openaoe.org/>

Files

Documentation/admin-guide/aoe/ drivers/block/aoe/

ATC260X PMIC MFD DRIVER

Mail

Manivannan Sadhasivam <manivannan.sadhasivam@linaro.org>, Cristian Ciocaltea <cristian.ciocaltea@gmail.com>

Mailing list

linux-actions@lists.infradead.org

Status

Maintained

Files

Documentation/devicetree/bindings/mfd/actions,atc260x.yaml drivers/input/misc/atc260x-onkey.c drivers/mfd/atc260* drivers/power/reset/atc260x-poweroff.c drivers/regulator/atc260x-regulator.c include/linux/mfd/atc260x/*

ATHEROS 71XX/9XXX GPIO DRIVER

Mail

Alban Bedel <albeu@free.fr>

Status

Maintained

Web-page

<https://github.com/AlbanBedel/linux>

SCM

git [git://github.com/AlbanBedel/linux](https://github.com/AlbanBedel/linux)

Files

Documentation/devicetree/bindings/gpio/gpio-ath79.txt drivers/gpio/gpio-ath79.c

ATHEROS 71XX/9XXX USB PHY DRIVER

Mail

Alban Bedel <albeu@free.fr>

Status

Maintained

Web-page

<https://github.com/AlbanBedel/linux>

SCM

git [git://github.com/AlbanBedel/linux](https://github.com/AlbanBedel/linux)

Files

Documentation/devicetree/bindings/phy/phy-ath79-usb.txt drivers/phy/
qualcomm/phy-ath79-usb.c

ATHEROS ATH GENERIC UTILITIES

Mail

Kalle Valo <kvalo@kernel.org>

Mailing list

linux-wireless@vger.kernel.org

Status

Supported

Files

drivers/net/wireless/ath/*

ATHEROS ATH5K WIRELESS DRIVER

Mail

Jiri Slaby <jirislaby@kernel.org>, Nick Kossifidis <mickflemm@gmail.com>,
Luis Chamberlain <mcgrof@kernel.org>

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

Web-page

<https://wireless.wiki.kernel.org/en/users/Drivers/ath5k>

Files

drivers/net/wireless/ath/ath5k/

ATHEROS ATH6KL WIRELESS DRIVER

Mailing list

linux-wireless@vger.kernel.org

Status

Orphan

Web-page

<https://wireless.wiki.kernel.org/en/users/Drivers/ath6kl>

Files

drivers/net/wireless/ath/ath6kl/

ATI_REMOTE2 DRIVER

Mail

Ville Syrjala <syrjala@sci.fi>

Status

Maintained

Files

drivers/input/misc/ati_remote2.c

ATK0110 HWMON DRIVER

Mail

Luca Tettamanti <kronos.it@gmail.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

drivers/hwmon/asus_atk0110.c

ATLX ETHERNET DRIVERS

Mail

Chris Snook <chris.snook@gmail.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Web-page

<http://sourceforge.net/projects/atl1> <http://atl1.sourceforge.net>

Files

drivers/net/ethernet/atheros/

ATM

Mail

Chas Williams <3chas3@gmail.com>

Mailing list

linux-atm-general@lists.sourceforge.net (moderated for non-subscribers), net-dev@vger.kernel.org

Status

Maintained

Web-page

<http://linux-atm.sourceforge.net>

Files

drivers/atm/ include/linux/atm* include/uapi/linux/atm*

ATMEL MACB ETHERNET DRIVER

Mail

Nicolas Ferre <nicolas.ferre@microchip.com>, Claudiu Beznea
<claudiu.beznea@tuxon.dev>

Status

Supported

Files

drivers/net/ethernet/cadence/

ATMEL MAXTOUCH DRIVER

Mail

Nick Dyer <nick@shmanahar.org>

Status

Maintained

SCM

git [git://github.com/ndyer/linux.git](https://github.com/ndyer/linux.git)

Files

Documentation/devicetree/bindings/input/atmel,maxtouch.yaml drivers/
input/touchscreen/atmel_mxt_ts.c

ATOMIC INFRASTRUCTURE

Mail

Will Deacon <will@kernel.org>, Peter Zijlstra <peterz@infradead.org>

Reviewer

Boqun Feng <boqun.feng@gmail.com>, Mark Rutland
<mark.rutland@arm.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

Documentation/atomic_*.txt arch/*/include/asm/atomic*.h include/*/atomic*.h
include/linux/refcount.h scripts/atomic/

ATTO EXPRESSSAS SAS/SATA RAID SCSI DRIVER

Mail

Bradley Grove <linuxdrivers@attotech.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Web-page

<http://www.attotech.com>

Files

drivers/scsi/esas2r

ATUSB IEEE 802.15.4 RADIO DRIVER

Mail

Stefan Schmidt <stefan@datenfreihafen.org>

Mailing list

linux-wpan@vger.kernel.org

Status

Maintained

Files

drivers/net/ieee802154/at86rf230.h drivers/net/ieee802154/atusb.c
drivers/net/ieee802154/atusb.h

AUDIT SUBSYSTEM

Mail

Paul Moore <paul@paul-moore.com>, Eric Paris <eparis@redhat.com>

Mailing list

audit@vger.kernel.org

Status

Supported

Web-page

<https://github.com/linux-audit>

Patchwork

<https://patchwork.kernel.org/project/audit/list>

bugs

<mailto:audit@vger.kernel.org>

P

<https://github.com/linux-audit/audit-kernel/blob/main/README.md>

SCM

git <https://git.kernel.org/pub/scm/linux/kernel/git/pcmoore/audit.git>

Files

include/asm-generic/audit_*.h include/linux/audit.h include/linux/
audit_arch.h include/uapi/linux/audit.h kernel/audit* lib/*audit.c

Content regex

`\baudit_[a-z_0-9]\+\b`

AUXILIARY BUS DRIVER

Mail

Greg Kroah-Hartman <gregkh@linuxfoundation.org>

Reviewer

Dave Ertman <david.m.ertman@intel.com>, Ira Weiny <ira.weiny@intel.com>

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/gregkh/driver-core.git](https://git.kernel.org/pub/scm/linux/kernel/git/gregkh/driver-core.git)

Files

driver-api/auxiliary_bus drivers/base/auxiliary.c include/linux/
auxiliary_bus.h

AUXILIARY DISPLAY DRIVERS

Mail

Miguel Ojeda <ojeda@kernel.org>

Status

Maintained

Files

Documentation/devicetree/bindings/auxdisplay/ drivers/auxdisplay/
include/linux/cfag12864b.h

AVIA HX711 ANALOG DIGITAL CONVERTER IIO DRIVER

Mail

Andreas Klinger <ak@it-klinger.de>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/adc/avia-hx711.yaml drivers/
iio/adc/hx711.c

AX.25 NETWORK LAYER

Mailing list

linux-hams@vger.kernel.org

Status

Orphan

Web-page

<https://linux-ax25.in-berlin.de>

Files

include/net/ax25.h include/uapi/linux/ax25.h net/ax25/

AXENTIA ARM DEVICES

Mail

Peter Rosin <peda@axentia.se>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

arch/arm/boot/dts/microchip/at91-linea.dtsi arch/arm/boot/
dts/microchip/at91-natte.dtsi arch/arm/boot/dts/microchip/
at91-nattis-2-natte-2.dts arch/arm/boot/dts/microchip/at91-tse850-3.
dts

AXENTIA ASOC DRIVERS

Mail

Peter Rosin <peda@axentia.se>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/sound/axentia,* sound/soc/atmel/
tse850-pcm5142.c

AXI-FAN-CONTROL HARDWARE MONITOR DRIVER

Mail

Nuno Sá <nuno.sa@analog.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/hwmon/adi,axi-fan-control.yaml
drivers/hwmon/axi-fan-control.c

AXI SPI ENGINE

Mail

Michael Hennerich <michael.hennerich@analog.com>, Nuno Sá
<nuno.sa@analog.com>

Reviewer

David Lechner <dlechner@baylibre.com>

Mailing list

linux-spi@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/spi/adi,axi-spi-engine.yaml
drivers/spi/spi-axi-spi-engine.c

AXXIA I2C CONTROLLER

Mail

Krzysztof Adamski <krzysztof.adamski@nokia.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/i2c/i2c-axxia.txt drivers/i2c/
busses/i2c-axxia.c

AZ6007 DVB DRIVER

Mail

Mauro Carvalho Chehab <mchehab@kernel.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/usb/dvb-usb-v2/az6007.c

AZTECH FM RADIO RECEIVER DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git git://linuxtv.org/media_tree.git

Files

`drivers/media/radio/radio-aztech*`

B43 WIRELESS DRIVER

Mailing list

linux-wireless@vger.kernel.org, b43-dev@lists.infradead.org

Status

Orphan

Web-page

<https://wireless.wiki.kernel.org/en/users/Drivers/b43>

Files

`drivers/net/wireless/broadcom/b43/`

B43LEGACY WIRELESS DRIVER

Mail

Larry Finger <Larry.Finger@lwfinger.net>

Mailing list

linux-wireless@vger.kernel.org, b43-dev@lists.infradead.org

Status

Maintained

Web-page

<https://wireless.wiki.kernel.org/en/users/Drivers/b43>

Files

`drivers/net/wireless/broadcom/b43legacy/`

BACKLIGHT CLASS/SUBSYSTEM

Mail

Lee Jones <lee@kernel.org>, Daniel Thompson <daniel.thompson@linaro.org>, Jingoo Han <jingooohan1@gmail.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/lee/backlight.git](https://git.kernel.org/pub/scm/linux/kernel/git/lee/backlight.git)

Files

Documentation/ABI/stable/sysfs-class-backlight Documentation/ABI/testing/sysfs-class-backlight Documentation/devicetree/bindings/leds/backlight drivers/video/backlight/ include/linux/backlight.h
include/linux/pwm_backlight.h

BAIKAL-T1 PVT HARDWARE MONITOR DRIVER**Mail**

Serge Semin <fancer.lancer@gmail.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/hwmon/baikal,bt1-pvt.yaml
hwmon/bt1-pvt drivers/hwmon/bt1-pvt.[ch]

BARCO P50 GPIO DRIVER**Mail**

Santosh Kumar Yadav <santoshkumar.yadav@barco.com>, Peter Korsgaard
<peter.korsgaard@barco.com>

Status

Maintained

Files

drivers/platform/x86/barco-p50-gpio.c

BATMAN ADVANCED**Mail**

Marek Lindner <mareklindner@neomailbox.ch>, Simon Wunderlich
<sw@simonwunderlich.de>, Antonio Quartulli <a@unstable.cc>, Sven Eckelmann <sven@narfation.org>

Mailing list

b.a.t.m.a.n@lists.open-mesh.org (moderated for non-subscribers)

Status

Maintained

Web-page

<https://www.open-mesh.org/>

Patchwork

<https://patchwork.open-mesh.org/project/batman/list/>

bugs

<https://www.open-mesh.org/projects/batman-adv/issues>

chat

ircs://irc.hackint.org/batadv

SCM

git <https://git.open-mesh.org/linux-merge.git>

Files

networking/batman-adv include/uapi/linux/batadv_packet.h include/
uapi/linux/batman_adv.h net/batman-adv/

BAYCOM/HDLCDRV DRIVERS FOR AX.25

Mail

Thomas Sailer <t.sailer@alumni.ethz.ch>

Mailing list

linux-hams@vger.kernel.org

Status

Maintained

Web-page

<http://www.baycom.org/~tom/ham/ham.html>

Files

drivers/net/hamradio/baycom*

BCACHE (BLOCK LAYER CACHE)

Mail

Coly Li <colyli@suse.de>, Kent Overstreet <kent.overstreet@linux.dev>

Mailing list

linux-bcache@vger.kernel.org

Status

Maintained

Web-page

<http://bcache.evilpiepirate.org>

chat

irc://irc.oftc.net/bcache

Files

drivers/md/bcache/

BCACHEFS

Mail

Kent Overstreet <kent.overstreet@linux.dev>

Reviewer

Brian Foster <bfoster@redhat.com>

Mailing list

linux-bcachefs@vger.kernel.org

Status

Supported

chat

<irc://irc.oftc.net/bcache>

Files

fs/bcachefs/

BDISP ST MEDIA DRIVER

Mail

Fabien Dessenne <fabien.dessenne@foss.st.com>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/platform/st/sti/bdisp

BECKHOFF CX5020 ETHERCAT MASTER DRIVER

Mail

Dariusz Marcinkiewicz <reksio@newterm.pl>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/ec_bhf.c

BEFS FILE SYSTEM

Mail

Luis de Bethencourt <luisbg@kernel.org>, Salah Triki <salah.triki@gmail.com>

Status

Maintained

SCM

git git://git.kernel.org/pub/scm/linux/kernel/git/luisbg/linux-befs.git

Files

filesystems/befs fs/befs/

BFQ I/O SCHEDULER

Mail

Paolo Valente <paolo.valente@unimore.it>, Jens Axboe <axboe@kernel.dk>

Mailing list

linux-block@vger.kernel.org

Status

Maintained

Files

block/bfq-iosched block/bfq-*

BFS FILE SYSTEM

Mail

"Tigran A. Aivazian" <aivazian.tigran@gmail.com>

Status

Maintained

Files

filesystems/bfs fs/bfs/ include/uapi/linux/bfs_fs.h

BITMAP API

Mail

Yury Norov <yury.norov@gmail.com>

Reviewer

Andy Shevchenko <andriy.shevchenko@linux.intel.com>, Rasmus Villemoes <linux@rasmusvillemoes.dk>

Status

Maintained

Files

include/linux/bitfield.h include/linux/bitmap-str.h include/linux/bitmap.h include/linux/bits.h include/linux/cpumask.h include/linux/find.h include/linux/nodemask.h include/vdso/bits.h lib/bitmap-str.c

lib/bitmap.c lib/cpumask.c lib/cpumask_kunit.c lib/find_bit.c lib/
find_bit_benchmark.c lib/test_bitmap.c tools/include/linux/bitfield.
h tools/include/linux/bitmap.h tools/include/linux/bits.h tools/
include/linux/find.h tools/include/vdso/bits.h tools/lib/bitmap.c
tools/lib/find_bit.c

BLINKM RGB LED DRIVER

Mail

Jan-Simon Moeller <jansimon.moeller@gmx.de>

Status

Maintained

Files

drivers/leds/leds-blinkm.c

BLOCK LAYER

Mail

Jens Axboe <axboe@kernel.dk>

Mailing list

linux-block@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/axboe/linux-block.git](https://git.kernel.org/pub/scm/linux/kernel/git/axboe/linux-block.git)

Files

Documentation/ABI/stable/sysfs-block Documentation/block/ block/
drivers/block/ include/linux/bio.h include/linux/blk* kernel/trace/
blktrace.c lib/sbitmap.c

BLOCK2MTD DRIVER

Mail

Joern Engel <joern@lazybastard.org>

Mailing list

linux-mtd@lists.infradead.org

Status

Maintained

Files

drivers/mtd/devices/block2mtd.c

BLUETOOTH DRIVERS

Mail

Marcel Holtmann <marcel@holtmann.org>, Luiz Augusto von Dentz <luiz.dentz@gmail.com>

Mailing list

linux-bluetooth@vger.kernel.org

Status

Supported

Web-page

<http://www.bluez.org/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/bluetooth/bluetooth.git](https://git.kernel.org/pub/scm/linux/kernel/git/bluetooth/bluetooth.git) git
[git://git.kernel.org/pub/scm/linux/kernel/git/bluetooth/bluetooth-next.git](https://git.kernel.org/pub/scm/linux/kernel/git/bluetooth/bluetooth-next.git)

Files

Documentation/devicetree/bindings/net/bluetooth/ drivers/bluetooth/

BLUETOOTH SUBSYSTEM

Mail

Marcel Holtmann <marcel@holtmann.org>, Johan Hedberg <johan.hedberg@gmail.com>, Luiz Augusto von Dentz <luiz.dentz@gmail.com>

Mailing list

linux-bluetooth@vger.kernel.org

Status

Supported

Web-page

<http://www.bluez.org/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/bluetooth/bluetooth.git](https://git.kernel.org/pub/scm/linux/kernel/git/bluetooth/bluetooth.git) git
[git://git.kernel.org/pub/scm/linux/kernel/git/bluetooth/bluetooth-next.git](https://git.kernel.org/pub/scm/linux/kernel/git/bluetooth/bluetooth-next.git)

Files

include/net/bluetooth/ net/bluetooth/

BONDING DRIVER

Mail

Jay Vosburgh <j.vosburgh@gmail.com>, Andy Gospodarek <andy@greyhouse.net>

Mailing list

netdev@vger.kernel.org

Status

Supported

Web-page

<http://sourceforge.net/projects/bonding/>

Files

networking/bonding drivers/net/bonding/ include/net/bond* include/
uapi/linux/if_bonding.h tools/testing/selftests/drivers/net/bonding/

BOSCH SENSORTEC BMA400 ACCELEROMETER IIO DRIVER**Mail**

Dan Robertson <dan@dlrobertson.com>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/accel/bosch,bma400.yaml
drivers/iio/accel/bma400*

BOSCH SENSORTEC BMI323 IMU IIO DRIVER**Mail**

Jagath Jog J <jagathjog1996@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/imu/bosch,bmi323.yaml drivers/
iio/imu/bmi323/

BPF JIT for ARM**Mail**

Russell King <linux@armlinux.org.uk>, Puranjay Mohan <puranjay12@gmail.com>

Mailing list

bpf@vger.kernel.org

Status

Maintained

Files

arch/arm/net/

BPF JIT for ARM64

Mail

Daniel Borkmann <daniel@iogearbox.net>, Alexei Starovoitov
<ast@kernel.org>, Zi Shen Lim <zlim.lnx@gmail.com>

Mailing list

bpf@vger.kernel.org

Status

Supported

Files

arch/arm64/net/

BPF JIT for LOONGARCH

Mail

Tiezhu Yang <yangtiezhu@loongson.cn>

Reviewer

Hengqi Chen <hengqi.chen@gmail.com>

Mailing list

bpf@vger.kernel.org

Status

Maintained

Files

arch/loongarch/net/

BPF JIT for MIPS (32-BIT AND 64-BIT)

Mail

Johan Almbladh <johan.almbladh@anyfinetworks.com>, Paul Burton <paulburton@kernel.org>

Mailing list

bpf@vger.kernel.org

Status

Maintained

Files

arch/mips/net/

BPF JIT for NFP NICs

Mail

Jakub Kicinski <kuba@kernel.org>

Mailing list

bpf@vger.kernel.org

Status

Odd Fixes

Files

drivers/net/ethernet/netronome/nfp/bpf/

BPF JIT for POWERPC (32-BIT AND 64-BIT)

Mail

Naveen N. Rao <naveen.n.rao@linux.ibm.com>, Michael Ellerman
<mpe@ellerman.id.au>

Mailing list

bpf@vger.kernel.org

Status

Supported

Files

arch/powerpc/net/

BPF JIT for RISC-V (32-bit)

Mail

Luke Nelson <luke.r.nels@gmail.com>, Xi Wang <xi.wang@gmail.com>

Mailing list

bpf@vger.kernel.org

Status

Maintained

Files

arch/riscv/net/

Excluded

arch/riscv/net/bpf_jit_comp64.c

BPF JIT for RISC-V (64-bit)

Mail

Björn Töpel <bjorn@kernel.org>

Mailing list

bpf@vger.kernel.org

Status

Maintained

Files

arch/riscv/net/

Excluded

arch/riscv/net/bpf_jit_comp32.c

BPF JIT for S390

Mail

Ilya Leoshkevich <iii@linux.ibm.com>, Heiko Carstens <hca@linux.ibm.com>, Vasily Gorbik <gor@linux.ibm.com>

Mailing list

bpf@vger.kernel.org

Status

Supported

Files

arch/s390/net/

Excluded

arch/s390/net/pnet.c

BPF JIT for SPARC (32-BIT AND 64-BIT)

Mail

David S. Miller <davem@davemloft.net>

Mailing list

bpf@vger.kernel.org

Status

Odd Fixes

Files

arch/sparc/net/

BPF JIT for X86 32-BIT

Mail

Wang YanQing <udknight@gmail.com>

Mailing list

bpf@vger.kernel.org

Status

Odd Fixes

Files

arch/x86/net/bpf_jit_comp32.c

BPF JIT for X86 64-BIT

Mail

Alexei Starovoitov <ast@kernel.org>, Daniel Borkmann
<daniel@iogearbox.net>

Mailing list

bpf@vger.kernel.org

Status

Supported

Files

arch/x86/net/

Excluded

arch/x86/net/bpf_jit_comp32.c

BPF [BTF]

Mail

Martin KaFai Lau <martin.lau@linux.dev>

Mailing list

bpf@vger.kernel.org

Status

Maintained

Files

include/linux/btf* kernel/bpf/btf.c

BPF [CORE]

Mail

Alexei Starovoitov <ast@kernel.org>, Daniel Borkmann
<daniel@iogearbox.net>

Reviewer

John Fastabend <john.fastabend@gmail.com>

Mailing list

bpf@vger.kernel.org

Status

Maintained

Files

include/linux/bpf* include/linux/filter.h include/linux/tnum.h
kernel/bpf/core.c kernel/bpf/dispatcher.c kernel/bpf/mprog.c kernel/
bpf/syscall.c kernel/bpf/tnum.c kernel/bpf/trampoline.c kernel/bpf/
verifier.c

BPF [DOCUMENTATION] (Related to Standardization)

Reviewer

David Vernet <void@manifold.com>

Mailing list

bpf@vger.kernel.org, bpf@ietf.org

Status

Maintained

Files

Documentation/bpf/standardization/

BPF [GENERAL] (Safe Dynamic Programs and Tools)

Mail

Alexei Starovoitov <ast@kernel.org>, Daniel Borkmann
<daniel@iogearbox.net>, Andrii Nakryiko <andrii@kernel.org>

Reviewer

Martin KaFai Lau <martin.lau@linux.dev>, Song Liu <song@kernel.org>,
Yonghong Song <yonghong.song@linux.dev>, John Fastabend
<john.fastabend@gmail.com>, KP Singh <kpsingh@kernel.org>, Stanislav
Fomichev <sdf@google.com>, Hao Luo <haoluo@google.com>, Jiri Olsa
<jolsa@kernel.org>

Mailing list

bpf@vger.kernel.org

Status

Supported

Web-page

<https://bpf.io/>

Patchwork

<https://patchwork.kernel.org/project/netdevbpf/list/?delegate=121173>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/bpf/bpf.git](https://git.kernel.org/pub/scm/linux/kernel/git/bpf/bpf.git) git
git://git.kernel.org/pub/scm/linux/kernel/git/bpf/bpf-next.git

Files

Documentation/bpf/ networking/filter Documentation/userspace-api/ebpf/
arch/*/net/* include/linux/bpf* include/linux/btf* include/linux/
filter.h include/trace/events/xdp.h include/uapi/linux/bpf* include/
uapi/linux/btf* include/uapi/linux/filter.h kernel/bpf/ kernel/
trace/bpf_trace.c lib/test_bpf.c net/bpf/ net/core/filter.c net/
sched/act_bpf.c net/sched/cls_bpf.c samples/bpf/ scripts/bpf_doc.py
scripts/Makefile.btf scripts/pahole-version.sh tools/bpf/ tools/lib/
bpf/ tools/testing/selftests/bpf/

BPF [ITERATOR]**Mail**

Yonghong Song <yonghong.song@linux.dev>

Mailing list

bpf@vger.kernel.org

Status

Maintained

Files

kernel/bpf/*iter.c

BPF [L7 FRAMEWORK] (sockmap)**Mail**

John Fastabend <john.fastabend@gmail.com>, Jakub Sitnicki
<jakub@cloudflare.com>

Mailing list

netdev@vger.kernel.org, bpf@vger.kernel.org

Status

Maintained

Files

include/linux/skmsg.h net/core/skmsg.c net/core/sock_map.c net/ipv4/
tcp_bpf.c net/ipv4/udp_bpf.c net/unix/unix_bpf.c

BPF [LIBRARY] (libbpf)

Mail

Andrii Nakryiko <andrii@kernel.org>

Mailing list

bpf@vger.kernel.org

Status

Maintained

Files

tools/lib/bpf/

BPF [MISC]

Mailing list

bpf@vger.kernel.org

Status

Odd Fixes

Content regex

(?:\b|_)bpf(?:\b|_)

BPF [NETKIT] (BPF-programmable network device)

Mail

Daniel Borkmann <daniel@iogearbox.net>, Nikolay Aleksandrov <razor@blackwall.org>

Mailing list

bpf@vger.kernel.org, netdev@vger.kernel.org

Status

Supported

Files

drivers/net/netkit.c include/net/netkit.h

BPF [NETWORKING] (struct_ops, reuseport)

Mail

Martin KaFai Lau <martin.lau@linux.dev>

Mailing list

bpf@vger.kernel.org, netdev@vger.kernel.org

Status

Maintained

Files

kernel/bpf/bpf_struct*

BPF [NETWORKING] (tcx & tc BPF, sock_addr)**Mail**

Martin KaFai Lau <martin.lau@linux.dev>, Daniel Borkmann
<daniel@iogearbox.net>

Reviewer

John Fastabend <john.fastabend@gmail.com>

Mailing list

bpf@vger.kernel.org, netdev@vger.kernel.org

Status

Maintained

Files

include/net/tcx.h kernel/bpf/tcx.c net/core/filter.c net/sched/
act_bpf.c net/sched/cls_bpf.c

BPF [RINGBUF]**Mail**

Andrii Nakryiko <andrii@kernel.org>

Mailing list

bpf@vger.kernel.org

Status

Maintained

Files

kernel/bpf/ringbuf.c

BPF [SECURITY & LSM] (Security Audit and Enforcement using BPF)**Mail**

KP Singh <kpsingh@kernel.org>

Reviewer

Florent Revest <revest@chromium.org>, Brendan Jackman <jackmanb@chromium.org>

Mailing list

bpf@vger.kernel.org

Status

Maintained

Files

bpf/prog_lsm include/linux/bpf_lsm.h kernel/bpf/bpf_lsm.c security/
bpf/

BPF [SELFTESTS] (Test Runners & Infrastructure)

Mail

Andrii Nakryiko <andrii@kernel.org>

Reviewer

Mykola Lysenko <mykolal@fb.com>

Mailing list

bpf@vger.kernel.org

Status

Maintained

Files

tools/testing/selftests/bpf/

BPF [STORAGE & CGROUPS]

Mail

Martin KaFai Lau <martin.lau@linux.dev>

Mailing list

bpf@vger.kernel.org

Status

Maintained

Files

kernel/bpf/*storage.c kernel/bpf/bpf_lru* kernel/bpf/cgroup.c

BPF [TOOLING] (bpftool)

Mail

Quentin Monnet <quentin@isovalent.com>

Mailing list

bpf@vger.kernel.org

Status

Maintained

Files

kernel/bpf/disasm.* tools/bpf/bpftool/

BPF [TRACING]**Mail**

Song Liu <song@kernel.org>

Reviewer

Jiri Olsa <jolsa@kernel.org>

Mailing list

bpf@vger.kernel.org

Status

Maintained

Files

kernel/bpf/stackmap.c kernel/trace/bpf_trace.c

BROADCOM ASP 2.0 ETHERNET DRIVER**Mail**

Justin Chen <justin.chen@broadcom.com>, Florian Fainelli <florian.fainelli@broadcom.com>

Mailing list

bcm-kernel-feedback-list@broadcom.com, netdev@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/net/brcm,asp-v2.0.yaml drivers/
net/ethernet/broadcom/asp2/

BROADCOM B44 10/100 ETHERNET DRIVER**Mail**

Michael Chan <michael.chan@broadcom.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/ethernet/broadcom/b44.*

BROADCOM B53/SF2 ETHERNET SWITCH DRIVER

Mail

Florian Fainelli <florian.fainelli@broadcom.com>

Mailing list

netdev@vger.kernel.org, openwrt-devel@lists.openwrt.org (subscribers-only)

Status

Supported

Files

Documentation/devicetree/bindings/net/dsa/brcm,b53.yaml drivers/net/dsa/b53/* drivers/net/dsa/bcm_sf2* include/linux/dsa/brcm.h include/linux/platform_data/b53.h

BROADCOM BCM2711/BCM2835 ARM ARCHITECTURE

Mail

Florian Fainelli <florian.fainelli@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-rpi-kernel@lists.infradead.org (moderated for non-subscribers), linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git <https://github.com/broadcom/stblinux.git>

Files

Documentation/devicetree/bindings/pci/brcm,stb-pcie.yaml drivers/pci/controller/pcie-brcmstb.c drivers/staging/vc04_services

Regex

bcm2711 bcm283* raspberrypi

BROADCOM BCM281XX/BCM11XXX/BCM216XX ARM ARCHITECTURE

Mail

Florian Fainelli <florian.fainelli@broadcom.com>, Ray Jui <rjui@broadcom.com>, Scott Branden <sbranden@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Status

Maintained

SCM

git <https://github.com/broadcom/mach-bcm>

Files

arch/arm/mach-bcm/

Regex

bcm281* bcm113* bcm216* kona

BROADCOM BCM47XX MIPS ARCHITECTURE**Mail**

Hauke Mehrstens <hauke@hauke-m.de>, Rafał Miłecki <zajec5@gmail.com>

Mailing list

linux-mips@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/mips/brcm/ arch/mips/bcm47xx/*
arch/mips/include/asm/mach-bcm47xx/*

BROADCOM BCM4908 ETHERNET DRIVER**Mail**

Rafał Miłecki <rafal@milecki.pl>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/brcm,bcm4908-enet.yaml
drivers/net/ethernet/broadcom/bcm4908_enet.* drivers/net/ethernet/
broadcom/unimac.h

BROADCOM BCM4908 PINMUX DRIVER**Mail**

Rafał Miłecki <rafal@milecki.pl>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pinctrl/brcm,bcm4908-pinctrl.yaml
drivers/pinctrl/bcm/pinctrl-bcm4908.c

BROADCOM BCM5301X ARM ARCHITECTURE

Mail

Florian Fainelli <florian.fainelli@broadcom.com>, Hauke Mehrtens
<hauke@hauke-m.de>, Rafał Miłecki <zajec5@gmail.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

arch/arm/boot/dts/broadcom/bcm-ns.dtsi arch/arm/boot/dts/broadcom/
bcm470* arch/arm/boot/dts/broadcom/bcm5301* arch/arm/boot/dts/
broadcom/bcm953012* arch/arm/mach-bcm/bcm_5301x.c

BROADCOM BCM53573 ARM ARCHITECTURE

Mail

Florian Fainelli <florian.fainelli@broadcom.com>, Rafał Miłecki
<rafal@milecki.pl>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

arch/arm/boot/dts/broadcom/bcm47189* arch/arm/boot/dts/broadcom/
bcm53573*

BROADCOM BCM63XX/BCM33XX UDC DRIVER**Mail**

Kevin Cernekee <cernekee@gmail.com>

Mailing listlinux-usb@vger.kernel.org**Status**

Maintained

Files

drivers/usb/gadget/udc/bcm63xx_udc.*

BROADCOM BCM7XXX ARM ARCHITECTURE**Mail**

Florian Fainelli <florian.fainelli@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing listlinux-arm-kernel@lists.infradead.org (moderated for non-subscribers)**Status**

Maintained

SCMgit <https://github.com/broadcom/stblinux.git>**Files**

Documentation/devicetree/bindings/pci/brcm, stb-pcie.yaml arch/
 arm/boot/dts/broadcom/bcm7*.dts* arch/arm/include/asm/hardware/
 cache-b15-rac.h arch/arm/mach-bcm/*brcmstb* arch/arm/mm/
 cache-b15-rac.c drivers/bus/brcmstb_gisb.c drivers/pci/controller/
 pcie-brcmstb.c

Regex

brcmstb bcm7038 bcm7120

BROADCOM BCMBCA ARM ARCHITECTURE**Mail**

William Zhang <william.zhang@broadcom.com>, Anand Gore
 <anand.gore@broadcom.com>, Kursad Oney <kursad.oney@broadcom.com>,
 Florian Fainelli <florian.fainelli@broadcom.com>, Rafał Miłecki
 <rafal@milecki.pl>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git <https://github.com/broadcom/stblinux.git>

Files

Documentation/devicetree/bindings/arm/bcm/brcm,bcmbca.yaml arch/
arm64/boot/dts/broadcom/bcmbca/*

Regex

bcmbca bcm[9]?47622 bcm[9]?4912 bcm[9]?63138 bcm[9]?63146 bcm[9]?63148
bcm[9]?63158 bcm[9]?63178 bcm[9]?6756 bcm[9]?6813 bcm[9]?6846 bcm[9]?
6855 bcm[9]?6856 bcm[9]?6858 bcm[9]?6878

BROADCOM BDC DRIVER

Mail

Justin Chen <justin.chen@broadcom.com>, Al Cooper <alcooperx@gmail.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/usb/brcm,bdc.yaml drivers/usb/
gadget/udc/bdc/

BROADCOM BMIPS CPUFREQ DRIVER

Mail

Markus Mayer <mmayer@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

Files

drivers/cpufreq/bmips-cpufreq.c

BROADCOM BMIPS MIPS ARCHITECTURE**Mail**

Florian Fainelli <florian.fainelli@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-mips@vger.kernel.org

Status

Maintained

SCM

git <https://github.com/broadcom/stblinux.git>

Files

arch/mips/bmips/* arch/mips/boot/dts/brcm/bcm*.dts* arch/mips/
include/asm/mach-bmips/* arch/mips/kernel/*bmips* drivers/irqchip/
irq-bcm63* drivers/irqchip/irq-bcm7* drivers/irqchip/irq-brcmstb*
drivers/pmdomain/bcm/bcm63xx-power.c include/linux/bcm963xx_nvram.h
include/linux/bcm963xx_tag.h

BROADCOM BNX2 GIGABIT ETHERNET DRIVER**Mail**

Rasesh Mody <rmody@marvell.com>, GR-Linux-NIC-Dev@marvell.com

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/ethernet/broadcom/bnx2.* drivers/net/ethernet/broadcom/
bnx2_*

BROADCOM BNX2FC 10 GIGABIT FCOE DRIVER**Mail**

Saurav Kashyap <skashyap@marvell.com>, Javed Hasan
<jhasan@marvell.com>, GR-QLogic-Storage-Upstream@marvell.com

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Files

drivers/scsi/bnx2fc/

BROADCOM BNX2I 1/10 GIGABIT iSCSI DRIVER

Mail

Nilesh Javali <njavali@marvell.com>, Manish Rangankar <mrangankar@marvell.com>, GR-QLogic-Storage-Upstream@marvell.com

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Files

drivers/scsi/bnx2i/

BROADCOM BNX2X 10 GIGABIT ETHERNET DRIVER

Mail

Ariel Elior <aelior@marvell.com>, Sudarsana Kalluru <skalluru@marvell.com>, Manish Chopra <manishc@marvell.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/ethernet/broadcom/bnx2x/

BROADCOM BNXT_EN 50 GIGABIT ETHERNET DRIVER

Mail

Michael Chan <michael.chan@broadcom.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/firmware/broadcom/tee_bnxt_fw.c drivers/net/ethernet/
broadcom/bnxt/ include/linux/firmware/broadcom/tee_bnxt_fw.h

BROADCOM BCM80211 IEEE802.11 WIRELESS DRIVERS

Mail

Arend van Spriel <arend.vanspriel@broadcom.com>

Mailing list

linux-wireless@vger.kernel.org, brcm80211@lists.linux.dev, brcm80211-dev-list.pdl@broadcom.com

Status

Supported

Files

drivers/net/wireless/broadcom/brcm80211/
platform_data/brcmfmac.h include/linux/

BROADCOM BCMSTB GPIO DRIVER

Mail

Doug Berger <opendmb@gmail.com>, Florian Fainelli <florian.fainelli@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Status

Supported

Files

Documentation/devicetree/bindings/gpio/brcm,brcmstb-gpio.yaml
drivers/gpio/gpio-brcmstb.c

BROADCOM BCMSTB I2C DRIVER

Mail

Kamal Dasu <kamal.dasu@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/i2c/brcm,brcmstb-i2c.yaml drivers/
i2c/busses/i2c-brcmstb.c

BROADCOM BCMSTB UART DRIVER

Mail

Al Cooper <alcooperx@gmail.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-serial@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/serial/brcm,bcm7271-uart.yaml
drivers/tty/serial/8250/8250_bcm7271.c

BROADCOM BCMSTB USB EHCI DRIVER

Mail

Justin Chen <justin.chen@broadcom.com>, Al Cooper <alcooperx@gmail.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/usb/brcm,bcm7445-ehci.yaml
drivers/usb/host/ehci-brcm.*

BROADCOM BCMSTB USB PIN MAP DRIVER

Mail

Al Cooper <alcooperx@gmail.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/usb/brcm,usb-pinmap.yaml drivers/
usb/misc/brcmstb-usb-pinmap.c

BROADCOM BRCMSTB USB2 and USB3 PHY DRIVER**Mail**

Justin Chen <justin.chen@broadcom.com>, Al Cooper <alcooperx@gmail.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

drivers/phy/broadcom/phy-brcm-usb*

BROADCOM Broadband SoC High Speed SPI Controller DRIVER**Mail**

William Zhang <william.zhang@broadcom.com>, Kursad Oney <kursad.oney@broadcom.com>, Jonas Gorski <jonas.gorski@gmail.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-spi@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/spi/brcm,bcm63xx-hsspi.yaml
drivers/spi/spi-bcm63xx-hsspi.c drivers/spi/spi-bcmbca-hsspi.c

BROADCOM BCM6348/BCM6358 SPI controller DRIVER**Mail**

Jonas Gorski <jonas.gorski@gmail.com>

Mailing list

linux-spi@vger.kernel.org

Status

Odd Fixes

Files

Documentation/devicetree/bindings/spi/brcm,bcm63xx-spi.yaml drivers/
spi/spi-bcm63xx.c

BROADCOM ETHERNET PHY DRIVERS

Mail

Florian Fainelli <florian.fainelli@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/net/broadcom-bcm87xx.txt drivers/net/phy/bcm*.ch drivers/net/phy/broadcom.c include/linux/brcmphy.h

BROADCOM GENET ETHERNET DRIVER

Mail

Doug Berger <opendmb@gmail.com>, Florian Fainelli <florian.fainelli@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/net/brcm,bcmgenet.yaml
Documentation/devicetree/bindings/net/brcm,unimac-mdio.yaml drivers/net/ethernet/broadcom/genet/ drivers/net/ethernet/broadcom/unimac.h
drivers/net/mdio/mdio-bcm-unimac.c include/linux/platform_data/bcmgenet.h include/linux/platform_data/mdio-bcm-unimac.h

BROADCOM IPROC ARM ARCHITECTURE

Mail

Ray Jui <rjui@broadcom.com>, Scott Branden <sbranden@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git <https://github.com/broadcom/stblinux.git>

Files

arch/arm64/boot/dts/broadcom/northstar2/* arch/arm64/boot/dts/
broadcom/stingray/* drivers/clock/bcm/clock-ns* drivers/clock/bcm/clock-sr*
drivers/pinctrl/bcm/pinctrl-ns* include/dt-bindings/clock/bcm-sr*

Regex

iproc cygnus bcm[-_]nsp bcm9113* bcm9583* bcm9585* bcm9586* bcm988312
bcm113* bcm583* bcm585* bcm586* bcm88312 hr2 stingray

BROADCOM IPROC GBIT ETHERNET DRIVER**Mail**

Rafał Milecki <rafal@milecki.pl>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/brcm,amac.yaml drivers/net/
ethernet/broadcom/bgmac* drivers/net/ethernet/broadcom/unimac.h

BROADCOM KONA GPIO DRIVER**Mail**

Ray Jui <rjui@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Status

Supported

Files

Documentation/devicetree/bindings/gpio/brcm,kona-gpio.yaml drivers/
gpio/gpio-bcm-kona.c

BROADCOM MPI3 STORAGE CONTROLLER DRIVER

Mail

Sathya Prakash Veerichetty <sathya.prakash@broadcom.com>,
Kashyap Desai <kashyap.desai@broadcom.com>, Sumit Sax-
ena <sumit.saxena@broadcom.com>, Sreekanth Reddy
<sreekanth.reddy@broadcom.com>

Mailing list

mpi3mr-linuxdrv.pdl@broadcom.com, linux-scsi@vger.kernel.org

Status

Supported

Web-page

<https://www.broadcom.com/support/storage>

Files

drivers/scsi/mpi3mr/

BROADCOM NETXTREME-E ROCE DRIVER

Mail

Selvin Xavier <selvin.xavier@broadcom.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Supported

Web-page

<http://www.broadcom.com>

Files

drivers/infiniband/hw/bnxt_re/ include/uapi/rdma/bnxt_re-abi.h

BROADCOM NVRAM DRIVER

Mail

Rafał Miłecki <zajec5@gmail.com>

Mailing list

linux-mips@vger.kernel.org

Status

Maintained

Files

drivers/firmware/broadcom/*

BROADCOM PMB (POWER MANAGEMENT BUS) DRIVER**Mail**

Rafał Milecki <rafal@milecki.pl>, Florian Fainelli <florian.fainelli@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

SCM

git <https://github.com/broadcom/stblinux.git>

Files

drivers/pmdomain/bcm/bcm-pmb.c include/dt-bindings/soc/bcm-pmb.h

BROADCOM SPECIFIC AMBA DRIVER (BCMA)**Mail**

Rafał Milecki <zajec5@gmail.com>

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

Files

drivers/bcma/ include/linux/bcma/

BROADCOM SPI DRIVER**Mail**

Kamal Dasu <kamal.dasu@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Status

Maintained

Files

Documentation/devicetree/bindings/spi/brcm,spi-bcm-qspi.yaml
drivers/spi/spi-bcm-qspi.* drivers/spi/spi-brcmstb-qspi.c drivers/
spi/spi-iproc-qspi.c

BROADCOM STB AVS CPUFREQ DRIVER

Mail

Markus Mayer <mmayer@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/cpufreq/brcm, stb-avs-cpu-freq.txt
drivers/cpufreq/brcmstb*

BROADCOM STB AVS TMON DRIVER

Mail

Markus Mayer <mmayer@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/thermal/brcm,avs-tmon.yaml
drivers/thermal/broadcom/brcmstb*

BROADCOM STB DPFE DRIVER

Mail

Markus Mayer <mmayer@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/memory-controllers/brcm,dpfe-cpu.
yaml drivers/memory/brcmstb_dpfe.c

BROADCOM STB NAND FLASH DRIVER

Mail

Brian Norris <computersforpeace@gmail.com>, Kamal Dasu <ka-mal.dasu@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-mtd@lists.infradead.org

Status

Maintained

Files

drivers/mtd/nand/raw/brcmnand/ include/linux/platform_data/brcmnand.h

BROADCOM STB PCIE DRIVER

Mail

Jim Quinlan <jim2101024@gmail.com>, Nicolas Saenz Julienne <nsaenz@kernel.org>, Florian Fainelli <florian.fainelli@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-pci@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pci/brcm, stb-pcie.yaml drivers/pci/controller/pcie-brcmstb.c

BROADCOM SYSTEMPORT ETHERNET DRIVER

Mail

Florian Fainelli <florian.fainelli@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/net/brcm,systemport.yaml drivers/
net/ethernet/broadcom/bcmsysport.* drivers/net/ethernet/broadcom/
unimac.h

BROADCOM TG3 GIGABIT ETHERNET DRIVER

Mail

Pavan Chebbi <pavan.chebbi@broadcom.com>, Michael Chan
<mchan@broadcom.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/ethernet/broadcom/tg3.*

BROADCOM VK DRIVER

Mail

Scott Branden <scott.branden@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-
list@broadcom.com>

Status

Supported

Files

drivers/misc/bcm-vk/ include/uapi/linux/misc/bcm_vk.h

BROCADE BFA FC SCSI DRIVER

Mail

Anil Gurumurthy <anil.gurumurthy@qlogic.com>, Sudarsana Kalluru <su-
darsana.kalluru@qlogic.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Files

drivers/scsi/bfa/

BROCADE BNA 10 GIGABIT ETHERNET DRIVER**Mail**

Rasesh Mody <rmody@marvell.com>, Sudarsana Kalluru
<skalluru@marvell.com>, GR-Linux-NIC-Dev@marvell.com

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

`drivers/net/ethernet/brocade/bna/`

BSG (block layer generic sg v4 driver)**Mail**

FUJITA Tomonori <fujita.tomonori@lab.ntt.co.jp>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Files

`block/bsg.c include/linux/bsg.h include/uapi/linux/bsg.h`

BT87X AUDIO DRIVER**Mail**

Clemens Ladisch <clemens@ladisch.de>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

SCM

`git git://git.kernel.org/pub/scm/linux/kernel/git/tiwai/sound.git`

Files

`sound/cards/bt87x sound/pci/bt87x.c`

BT8XXGPIO DRIVER

Mail

Michael Buesch <m@bues.ch>

Status

Maintained

Web-page

<http://bu3sch.de/btgpio.php>

Files

drivers/gpio/gpio-bt8xx.c

BTRFS FILE SYSTEM

Mail

Chris Mason <clm@fb.com>, Josef Bacik <josef@toxicpanda.com>, David Sterba <dsterba@suse.com>

Mailing list

linux-btrfs@vger.kernel.org

Status

Maintained

Web-page

<https://btrfs.readthedocs.io>

Patchwork

<https://patchwork.kernel.org/project/linux-btrfs/list/>

chat

<irc://irc.libera.chat/btrfs>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/kdave/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/kdave/linux.git)

Files

filesystems/btrfs fs/btrfs/ include/linux/btrfs* include/trace/events/btrfs.h include/uapi/linux/btrfs*

BTTV VIDEO4LINUX DRIVER

Mail

Mauro Carvalho Chehab <mchehab@kernel.org>

Mailing list

linux-media@vger.kernel.org

Status

Odd fixes

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/driver-api/media/drivers/bttv* drivers/media/pci/
bt8xx/bttv*

BUS FREQUENCY DRIVER FOR SAMSUNG EXYNOS**Mail**

Chanwoo Choi <cw00.choi@samsung.com>

Mailing list

linux-pm@vger.kernel.org, linux-samsung-soc@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/chanwoo/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/chanwoo/linux.git)

Files

Documentation/devicetree/bindings/interconnect/samsung,exynos-bus.
yaml drivers/devfreq/exynos-bus.c

BUSLOGIC SCSI DRIVER**Mail**

Khalid Aziz <khalid@gonehiking.org>

Mailing list

linux-scsi@vger.kernel.org

Status

Maintained

Files

drivers/scsi/BusLogic.* drivers/scsi/FlashPoint.*

BXCAN CAN NETWORK DRIVER**Mail**

Dario Binacchi <dario.binacchi@amarulasolutions.com>

Mailing list

linux-can@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/can/st,stm32-bxcan.yaml
drivers/net/can/bxcan.c

C-MEDIA CMI8788 DRIVER

Mail

Clemens Ladisch <clemens@ladisch.de>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tiwai/sound.git](https://git.kernel.org/pub/scm/linux/kernel/git/tiwai/sound.git)

Files

sound/pci/oxygen/

C-SKY ARCHITECTURE

Mail

Guo Ren <guoren@kernel.org>

Mailing list

linux-csky@vger.kernel.org

Status

Supported

SCM

git <https://github.com/c-sky/csky-linux.git>

Files

Documentation/devicetree/bindings/csky/ Documentation/devicetree/
bindings/interrupt-controller/csky,* Documentation/devicetree/
bindings/timer/csky,* arch/csky/ drivers/clocksource/timer-gx6605s.c
drivers/clocksource/timer-mp-csky.c drivers/irqchip/irq-csky-*

Regex

csky

Content regex

csky

CA8210 IEEE-802.15.4 RADIO DRIVER

Mailing list

linux-wpan@vger.kernel.org

Status

Orphan

Web-page

<https://github.com/Cascoda/ca8210-linux.git>

Files

Documentation/devicetree/bindings/net/ieee802154/ca8210.txt drivers/
net/ieee802154/ca8210.c

CACHEFILES: FS-CACHE BACKEND FOR CACHING ON MOUNTED FILESYSTEMS

Mail

David Howells <dhowells@redhat.com>

Mailing list

netfs@lists.linux.dev

Status

Supported

Files

filesystems/caching/cache/files fs/cache/files/

CACHESTAT: PAGE CACHE STATS FOR A FILE

Mail

Nhat Pham <nphamcs@gmail.com>, Johannes Weiner <hannes@cmpxchg.org>

Mailing list

linux-mm@kvack.org

Status

Maintained

Files

tools/testing/selftests/cachestat/test_cachestat.c

CADENCE MIPI-CSI2 BRIDGES

Mail

Maxime Ripard <mripard@kernel.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/cdns,*.txt Documentation/
devicetree/bindings/media/cdns,csi2rx.yaml drivers/media/platform/
cadence/cdns-csi2*

CADENCE NAND DRIVER

Mailing list

linux-mtd@lists.infradead.org

Status

Orphan

Files

Documentation/devicetree/bindings/mtd/cadence-nand-controller.txt
drivers/mtd/nand/raw/cadence-nand-controller.c

CADENCE USB3 DRD IP DRIVER

Mail

Peter Chen <peter.chen@kernel.org>, Pawel Laszczak <pawell@cadence.com>

Reviewer

Roger Quadros <rogerq@kernel.org>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/peter.chen/usb.git](https://git.kernel.org/pub/scm/linux/kernel/git/peter.chen/usb.git)

Files

Documentation/devicetree/bindings/usb/cdns,usb3.yaml drivers/usb/cdns3/

Excluded

drivers/usb/cdns3/cdnsp*

CADENCE USBHS DRIVER

Mail

Pawel Laszczak <pawell@cadence.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

drivers/usb/gadget/udc/cdns2

CADENCE USBSSP DRD IP DRIVER

Mail

Pawel Laszczak <pawell@cadence.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/peter.chen/usb.git](https://git.kernel.org/pub/scm/linux/kernel/git/peter.chen/usb.git)

Files

drivers/usb/cdns3/

Excluded

drivers/usb/cdns3/cdns3*

CADET FM/AM RADIO RECEIVER DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/radio/radio-cadet*

CAFE CMOS INTEGRATED CAMERA CONTROLLER DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/admin-guide/media/cafec_cic* drivers/media/platform/
marvell/

CAIF NETWORK LAYER

Mailing list

netdev@vger.kernel.org

Status

Orphan

Files

Documentation/networking/caif/ drivers/net/caif/ include/net/caif/
include/uapi/linux/caif/ net/caif/

CAKE QDISC

Mail

Toke Høiland-Jørgensen <toke@toke.dk>

Mailing list

cake@lists.bufferbloat.net (moderated for non-subscribers)

Status

Maintained

Files

net/sched/sch_cake.c

CAN NETWORK DRIVERS

Mail

Wolfgang Grandegger <wg@grandegger.com>, Marc Kleine-Budde
<mkl@pengutronix.de>

Mailing list

linux-can@vger.kernel.org

Status

Maintained

Web-page

<https://github.com/linux-can>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/mkl/linux-can.git](https://git.kernel.org/pub/scm/linux/kernel/git/mkl/linux-can.git) git
[git://git.kernel.org/pub/scm/linux/kernel/git/mkl/linux-can-next.git](https://git.kernel.org/pub/scm/linux/kernel/git/mkl/linux-can-next.git)

Files

Documentation/devicetree/bindings/net/can/ Documentation/devicetree/
bindings/phy/ti,tcan104x-can.yaml drivers/net/can/ drivers/phy/
phy-can-transceiver.c include/linux/can/bittiming.h include/linux/
can/dev.h include/linux/can/length.h include/linux/can/platform/
include/linux/can/rx-offload.h include/uapi/linux/can/error.h
include/uapi/linux/can/netlink.h include/uapi/linux/can/vxcan.h

CAN NETWORK LAYER

Mail

Oliver Hartkopp <socketcan@hartkopp.net>, Marc Kleine-Budde
<mkl@pengutronix.de>

Mailing list

linux-can@vger.kernel.org

Status

Maintained

Web-page

<https://github.com/linux-can>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/mkl/linux-can.git](https://git.kernel.org/pub/scm/linux/kernel/git/mkl/linux-can.git) git
[git://git.kernel.org/pub/scm/linux/kernel/git/mkl/linux-can-next.git](https://git.kernel.org/pub/scm/linux/kernel/git/mkl/linux-can-next.git)

Files

networking/can include/linux/can/can-ml.h include/linux/can/core.
 h include/linux/can/skb.h include/net/netns/can.h include/uapi/
 linux/can.h include/uapi/linux/can/bcm.h include/uapi/linux/can/gw.h
 include/uapi/linux/can/isotp.h include/uapi/linux/can/raw.h net/can/

CAN-J1939 NETWORK LAYER**Mail**

Robin van der Gracht <robin@protonic.nl>, Oleksij Rempel
 <o.rempel@pengutronix.de>

Reviewer

kernel@pengutronix.de

Mailing list

linux-can@vger.kernel.org

Status

Maintained

Files

networking/j1939 include/uapi/linux/can/j1939.h net/can/j1939/

CANAAN/KENDRYTE K210 SOC FPIOA DRIVER**Mail**

Damien Le Moal <dlemoal@kernel.org>

Mailing list

linux-riscv@lists.infradead.org, linux-gpio@vger.kernel.org (pinctrl driver)

Files

Documentation/devicetree/bindings/pinctrl/canaan,k210-fpioa.yaml
 drivers/pinctrl/pinctrl-k210.c

CANAAN/KENDRYTE K210 SOC RESET CONTROLLER DRIVER**Mail**

Damien Le Moal <dlemoal@kernel.org>

Mailing list

linux-kernel@vger.kernel.org, linux-riscv@lists.infradead.org

Status

Maintained

Files

Documentation/devicetree/bindings/reset/canaan,k210-rst.yaml
 drivers/reset/reset-k210.c

CANAAN/KENDRYTE K210 SOC SYSTEM CONTROLLER DRIVER

Mail

Damien Le Moal <dlemoal@kernel.org>

Mailing list

linux-riscv@lists.infradead.org

Status

Maintained

Files

Documentation/devicetree/bindings/mfd/canaan,k210-sysctl.yaml
drivers/soc/canaan/ include/soc/canaan/

CAPABILITIES

Mail

Serge Hallyn <serge@hallyn.com>

Mailing list

linux-security-module@vger.kernel.org

Status

Supported

Files

include/linux/capability.h include/uapi/linux/capability.h kernel/
capability.c security/commoncap.c

CAPELLA MICROSYSTEMS LIGHT SENSOR DRIVER

Mail

Kevin Tsai <ktsai@capellamicro.com>

Status

Maintained

Files

drivers/iio/light/cm*

CARL9170 LINUX COMMUNITY WIRELESS DRIVER

Mail

Christian Lamparter <chunkeey@gmail.com>

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

Web-page

<https://wireless.wiki.kernel.org/en/users/Drivers/carl9170>

Files

drivers/net/wireless/ath/carl9170/

CAVIUM I2C DRIVER**Mail**

Robert Richter <rric@kernel.org>

Status

Odd Fixes

Web-page

<http://www.marvell.com>

Files

drivers/i2c/busses/i2c-octeon* drivers/i2c/busses/i2c-thunderx*

CAVIUM LIQUIDIO NETWORK DRIVER**Mailing list**

netdev@vger.kernel.org

Status

Orphan

Web-page

<http://www.marvell.com>

Files

drivers/net/ethernet/cavium/liquidio/

CAVIUM MMC DRIVER**Mail**

Robert Richter <rric@kernel.org>

Status

Odd Fixes

Web-page

<http://www.marvell.com>

Files

drivers/mmc/host/cavium*

CAVIUM OCTEON-TX CRYPTO DRIVER

Mail

George Cherian <gcherian@marvell.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Supported

Web-page

<http://www.marvell.com>

Files

drivers/crypto/cavium/cpt/

CAVIUM THUNDERX2 ARM64 SOC

Mail

Robert Richter <rric@kernel.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Odd Fixes

Files

Documentation/devicetree/bindings/arm/cavium-thunder2.txt arch/
arm64/boot/dts/cavium/thunder2-99xx*

CBS/ETF/TAPRIO QDISCS

Mail

Vinicius Costa Gomes <vinicius.gomes@intel.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

net/sched/sch_cbs.c net/sched/sch_etf.c net/sched/sch_taprio.c

CC2520 IEEE-802.15.4 RADIO DRIVER

Mail

Stefan Schmidt <stefan@datenfreihafen.org>

Mailing list

linux-wpan@vger.kernel.org

Status

Odd Fixes

Files

Documentation/devicetree/bindings/net/ieee802154/cc2520.txt drivers/
net/ieee802154/cc2520.c

CCREE ARM TRUSTZONE CRYPTOCELL REE DRIVER

Mail

Gilad Ben-Yossef <gilad@benyossef.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Supported

Web-page

[https://developer.arm.com/products/system-ip/trustzone-cryptocell/
cryptocell-700-family](https://developer.arm.com/products/system-ip/trustzone-cryptocell/cryptocell-700-family)

Files

drivers/crypto/ccree/

CCTRNG ARM TRUSTZONE CRYPTOCELL TRUE RANDOM NUMBER GENERATOR (TRNG) DRIVER

Mail

Hadar Gat <hadar.gat@arm.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Supported

Web-page

[https://developer.arm.com/products/system-ip/trustzone-cryptocell/
cryptocell-700-family](https://developer.arm.com/products/system-ip/trustzone-cryptocell/cryptocell-700-family)

Files

Documentation/devicetree/bindings/rng/arm-cctrng.yaml drivers/char/
hw_random/cctrng.c drivers/char/hw_random/cctrng.h

CEC FRAMEWORK

Mail

Hans Verkuil <hverkuil-cisco@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Web-page

<http://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/ABI/testing/debugfs-cec-error-inj Documentation/
devicetree/bindings/media/cec/cec-common.yaml driver-api/media/cec-core
Documentation/userspace-api/media/cec drivers/media/cec/ drivers/
media/rc/keymaps/rc-cec.c include/media/cec-notifier.h include/media/
cec.h include/uapi/linux/cec-funcs.h include/uapi/linux/cec.h

CEC GPIO DRIVER

Mail

Hans Verkuil <hverkuil-cisco@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Web-page

<http://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/cec/cec-gpio.yaml drivers/
media/cec/platform/cec-gpio/

CELL BROADBAND ENGINE ARCHITECTURE

Mail

Arnd Bergmann <arnd@arndb.de>

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Supported

Web-page

<http://www.ibm.com/developerworks/power/cell/>

Files

arch/powerpc/include/asm/cell*.h arch/powerpc/include/asm/spu*.h
arch/powerpc/include/uapi/asm/spu*.h arch/powerpc/platforms/cell/

CELLWISE CW2015 BATTERY DRIVER**Mail**

Tobias Schramm <t.schramm@manjaro.org>

Status

Maintained

Files

Documentation/devicetree/bindings/power/supply/cw2015_battery.yaml
drivers/power/supply/cw2015_battery.c

CEPH COMMON CODE (LIBCEPH)**Mail**

Ilya Dryomov <idryomov@gmail.com>, Xiubo Li <xiubli@redhat.com>

Reviewer

Jeff Layton <jlayton@kernel.org>

Mailing list

ceph-devel@vger.kernel.org

Status

Supported

Web-page

<http://ceph.com/>

SCM

git <https://github.com/ceph/ceph-client.git>

Files

include/linux/ceph/ include/linux/crush/ net/ceph/

CEPH DISTRIBUTED FILE SYSTEM CLIENT (CEPH)**Mail**

Xiubo Li <xiubli@redhat.com>, Ilya Dryomov <idryomov@gmail.com>

Reviewer

Jeff Layton <jlayton@kernel.org>

Mailing list

ceph-devel@vger.kernel.org

Status

Supported

Web-page

<http://ceph.com/>

SCM

git <https://github.com/ceph/ceph-client.git>

Files

filesystems/ceph fs/ceph/

CERTIFICATE HANDLING

Mail

David Howells <dhowells@redhat.com>, David Woodhouse
<dwmw2@infradead.org>

Mailing list

keyrings@vger.kernel.org

Status

Maintained

Files

admin-guide/module-signing certs/ scripts/sign-file.c tools/certs/

CFAG12864B LCD DRIVER

Mail

Miguel Ojeda <ojeda@kernel.org>

Status

Maintained

Files

drivers/auxdisplay/cfag12864b.c include/linux/cfag12864b.h

CFAG12864BFB LCD FRAMEBUFFER DRIVER

Mail

Miguel Ojeda <ojeda@kernel.org>

Status

Maintained

Files

drivers/auxdisplay/cfag12864bfb.c include/linux/cfag12864b.h

CHAR and MISC DRIVERS

Mail

Arnd Bergmann <arnd@arndb.de>, Greg Kroah-Hartman
<gregkh@linuxfoundation.org>

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/gregkh/char-misc.git](https://git.kernel.org/pub/scm/linux/kernel/git/gregkh/char-misc.git)

Files

drivers/char/ drivers/misc/ include/linux/miscdevice.h

Excluded

drivers/char/agp/ drivers/char/hw_random/ drivers/char/ipmi/ drivers/
char/random.c drivers/char/tpm/

CHARGERLAB POWER-Z HARDWARE MONITOR DRIVER

Mail

Thomas Weißschuh <linux@weissschuh.net>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/powerz drivers/hwmon/powerz.c

CHECKPATCH

Mail

Andy Whitcroft <apw@canonical.com>, Joe Perches <joe@perches.com>

Reviewer

Dwaipayan Ray <dwaipayanray1@gmail.com>, Lukas Bulwahn
<lukas.bulwahn@gmail.com>

Status

Maintained

Files

scripts/checkpatch.pl

CHECKPATCH DOCUMENTATION

Mail

Dwaipayan Ray <dwaipayanray1@gmail.com>, Lukas Bulwahn
<lukas.bulwahn@gmail.com>

Reviewer

Joe Perches <joe@perches.com>

Status

Maintained

Files

dev-tools/checkpatch

CHINESE DOCUMENTATION

Mail

Alex Shi <alexs@kernel.org>, Yanteng Si <siyanteng@loongson.cn>

Status

Maintained

Files

Documentation/translations/zh_CN/

CHIPIDEA USB HIGH SPEED DUAL ROLE CONTROLLER

Mail

Peter Chen <peter.chen@kernel.org>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

SCM

git git://git.kernel.org/pub/scm/linux/kernel/git/peter.chen/usb.git

Files

drivers/usb/chipidea/

CHIPONE ICN8318 I2C TOUCHSCREEN DRIVER

Mail

Hans de Goede <hdegoede@redhat.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/input/touchscreen/chipone,
icn8318.yaml drivers/input/touchscreen/chipone_icn8318.c

CHIPONE ICN8505 I2C TOUCHSCREEN DRIVER**Mail**

Hans de Goede <hdegoede@redhat.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/input/touchscreen/chipone_icn8505.c

CHROME HARDWARE PLATFORM SUPPORT**Mail**

Benson Leung <bleung@chromium.org>, Tzung-Bi Shih <tzungbi@kernel.org>

Mailing list

chrome-platform@lists.linux.dev

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/chrome-platform/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/chrome-platform/linux.git)

Files

drivers/platform/chrome/

CHROMEOS EC CODEC DRIVER**Mail**

Cheng-Yi Chiang <cychiang@chromium.org>, Tzung-Bi Shih
<tzungbi@kernel.org>

Reviewer

Guenter Roeck <groeck@chromium.org>

Mailing list

chrome-platform@lists.linux.dev

Status

Maintained

Files

Documentation/devicetree/bindings/sound/google,cros-ec-codec.yaml
sound/soc/codecs/cros_ec_codec.*

CHROMEOS EC SUBDRIVERS

Mail

Benson Leung <bleung@chromium.org>

Reviewer

Guenter Roeck <groeck@chromium.org>

Mailing list

chrome-platform@lists.linux.dev

Status

Maintained

Files

drivers/power/supply/cros_usbpd-charger.c

Regex

cros_ec cros-ec

CHROMEOS EC UART DRIVER

Mail

Bhanu Prakash Maiya <bhanumaiya@chromium.org>

Reviewer

Benson Leung <bleung@chromium.org>, Tzung-Bi Shih <tzungbi@kernel.org>

Status

Maintained

Files

drivers/platform/chrome/cros_ec_uart.c

CHROMEOS EC USB PD NOTIFY DRIVER

Mail

Prashant Malani <pmalani@chromium.org>

Mailing list

chrome-platform@lists.linux.dev

Status

Maintained

Files

drivers/platform/chrome/cros_usbpd_notify.c
platform_data/cros_usbpd_notify.h

include/linux/

CHROMEOS EC USB TYPE-C DRIVER

Mail

Prashant Malani <pmalani@chromium.org>

Mailing list

chrome-platform@lists.linux.dev

Status

Maintained

Files

drivers/platform/chrome/cros_ec_typec.* drivers/platform/chrome/
cros_typec_switch.c drivers/platform/chrome/cros_typec_vdm.*

CHROMEOS HPS DRIVER

Mail

Dan Callaghan <dcallagh@chromium.org>

Reviewer

Sami Kyöstilä <skyostil@chromium.org>

Status

Maintained

Files

drivers/platform/chrome/cros_hps_i2c.c

CHRONTEL CH7322 CEC DRIVER

Mail

Joe Tessler <jrt@google.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/chrontel,ch7322.yaml
drivers/media/cec/i2c/ch7322.c

CIRRUS LOGIC AUDIO CODEC DRIVERS

Mail

James Schulman <james.schulman@cirrus.com>, David Rhodes
<david.rhodes@cirrus.com>, Richard Fitzgerald <rf@opensource.cirrus.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers),
patches@opensource.cirrus.com

Status

Maintained

Files

Documentation/devicetree/bindings/sound/cirrus,cs* drivers/mfd/
cs42l43* drivers/pinctrl/cirrus/pinctrl-cs42l43* drivers/spi/
spi-cs42l43* include/dt-bindings/sound/cs* include/linux/mfd/cs42l43*
include/sound/cs* sound/pci/hda/cirrus* sound/pci/hda/cs* sound/pci/
hda/hda_cs_dsp_ctl.* sound/soc/codecs/cs*

CIRRUS LOGIC DSP FIRMWARE DRIVER

Mail

Simon Trimmer <simont@opensource.cirrus.com>, Charles
Keepax <ckeepax@opensource.cirrus.com>, Richard Fitzgerald
<rf@opensource.cirrus.com>

Mailing list

patches@opensource.cirrus.com

Status

Supported

Web-page

<https://github.com/CirrusLogic/linux-drivers/wiki>

SCM

git <https://github.com/CirrusLogic/linux-drivers.git>

Files

drivers/firmware/cirrus/* include/linux/firmware/cirrus/*

CIRRUS LOGIC EP93XX ETHERNET DRIVER

Mail

Hartley Sweeten <hsweeten@visionengravers.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/cirrus/ep93xx_eth.c

CIRRUS LOGIC LOCHNAGAR DRIVER

Mail

Charles Keepax <ckkeepax@opensource.cirrus.com>, Richard Fitzgerald <rf@opensource.cirrus.com>

Mailing list

patches@opensource.cirrus.com

Status

Supported

Files

Documentation/devicetree/bindings/clock/cirrus,lochnagar.yaml
Documentation/devicetree/bindings/hwmon/cirrus,lochnagar.yaml
Documentation/devicetree/bindings/mfd/cirrus,lochnagar.yaml
Documentation/devicetree/bindings/pinctrl/cirrus,lochnagar.yaml
Documentation/devicetree/bindings/sound/cirrus,lochnagar.yaml
hwmon/lochnagar drivers/clk/clk-lochnagar.c drivers/hwmon/lochnagar-hwmon.c drivers/mfd/lochnagar-i2c.c drivers/pinctrl/cirrus/pinctrl-lochnagar.c drivers/regulator/lochnagar-regulator.c include/dt-bindings/clock/lochnagar.h include/dt-bindings/pinctrl/lochnagar.h include/linux/mfd/lochnagar* sound/soc/codecs/lochnagar-sc.c

CIRRUS LOGIC MADERA CODEC DRIVERS

Mail

Charles Keepax <ckkeepax@opensource.cirrus.com>, Richard Fitzgerald <rf@opensource.cirrus.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers),
patches@opensource.cirrus.com

Status

Supported

Web-page

<https://github.com/CirrusLogic/linux-drivers/wiki>

SCM

git <https://github.com/CirrusLogic/linux-drivers.git>

Files

Documentation/devicetree/bindings/mfd/cirrus,madera.yaml
Documentation/devicetree/bindings/pinctrl/cirrus,madera.yaml
Documentation/devicetree/bindings/sound/cirrus,madera.yaml drivers/gpio/gpio-madera* drivers/irqchip/irq-madera* drivers/mfd/cs47l* drivers/mfd/madera* drivers/pinctrl/cirrus/* include/dt-bindings/sound/madera* include/linux/irqchip/irq-madera* include/linux/mfd/madera/* include/sound/madera* sound/soc/codecs/cs47l* sound/soc/codecs/madera*

CISCO FCOE HBA DRIVER

Mail

Satish Kharat <satishkh@cisco.com>, Sesidhar Baddela <sebad-del@cisco.com>, Karan Tilak Kumar <kartilak@cisco.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Files

drivers/scsi/fnic/

CISCO SCSI HBA DRIVER

Mail

Karan Tilak Kumar <kartilak@cisco.com>, Sesidhar Baddela <sebad-del@cisco.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Files

drivers/scsi/snic/

CISCO VIC ETHERNET NIC DRIVER

Mail

Christian Benvenuti <benve@cisco.com>, Satish Kharat <satishkh@cisco.com>

Status

Supported

Files

drivers/net/ethernet/cisco/enic/

CISCO VIC LOW LATENCY NIC DRIVER

Mail

Christian Benvenuti <benve@cisco.com>, Nelson Escobar <neescoba@cisco.com>

Status

Supported

Files

drivers/infiniband/hw/usnic/

CLANG CONTROL FLOW INTEGRITY SUPPORT

Mail

Sami Tolvanen <samitolvanen@google.com>, Kees Cook
<keescook@chromium.org>

Reviewer

Nathan Chancellor <nathan@kernel.org>

Mailing list

llvm@lists.linux.dev

Status

Supported

bugs

<https://github.com/ClangBuiltLinux/linux/issues>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/kees/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/kees/linux.git) for-next/hardening

Files

include/linux/cfi.h kernel/cfi.c

CLANG-FORMAT FILE

Mail

Miguel Ojeda <ojeda@kernel.org>

Status

Maintained

Files

.clang-format

CLANG/LLVM BUILD SUPPORT

Mail

Nathan Chancellor <nathan@kernel.org>

Reviewer

Nick Desaulniers <ndesaulniers@google.com>, Bill Wendling
<morbo@google.com>, Justin Stitt <justinstitt@google.com>

Mailing list

llvm@lists.linux.dev

Status

Supported

Web-page

<https://clangbuiltlinux.github.io/>

bugs

<https://github.com/ClangBuiltLinux/linux/issues>

chat

<irc://irc.libera.chat/clangbuiltdlinux>

Files

kbld/llvm include/linux/compiler-clang.h scripts/Makefile.clang
scripts/clang-tools/

Content regex

`\b(?:clang|llvm)\b`

CLK API

Mail

Russell King <linux@armlinux.org.uk>

Mailing list

linux-clk@vger.kernel.org

Status

Maintained

Files

include/linux/clock.h

CLOCKSOURCE, CLOKEVENT DRIVERS

Mail

Daniel Lezcano <daniel.lezcano@linaro.org>, Thomas Gleixner
<tglx@linutronix.de>

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git](https://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git) timers/core

Files

Documentation/devicetree/bindings/timer/ drivers/clocksource/

CLOSURES

Mail

Kent Overstreet <kent.overstreet@linux.dev>

Mailing list

linux-bcachefs@vger.kernel.org

Status

Supported

chat

<irc://irc.oftc.net/bcache>

Files

include/linux/closure.h lib/closure.c

CMPC ACPI DRIVER**Mail**

Thadeu Lima de Souza Cascardo <cascardo@holoscopio.com>, Daniel Oliveira Nascimento <don@syst.com.br>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Supported

Files

drivers/platform/x86/classmate-laptop.c

COBALT MEDIA DRIVER**Mail**

Hans Verkuil <hverkuil-cisco@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Web-page

<https://linuxtv.org>

SCM

git git://linuxtv.org/media_tree.git

Files

drivers/media/pci/cobalt/

COCCINELLE/Semantic Patches (SmPL)**Mail**

Julia Lawall <Julia.Lawall@inria.fr>, Nicolas Palix <nicolas.palix@imag.fr>

Mailing list

cocci@inria.fr (moderated for non-subscribers)

Status

Supported

Web-page

<https://coccinelle.gitlabpages.inria.fr/website/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/jlawall/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/jlawall/linux.git)

Files

dev-tools/coccinelle scripts/coccicheck scripts/coccinelle/

CODA FILE SYSTEM

Mail

Jan Harkes <jaharkes@cs.cmu.edu>, coda@cs.cmu.edu

Mailing list

codelist@coda.cs.cmu.edu

Status

Maintained

Web-page

<http://www.coda.cs.cmu.edu/>

Files

filesystems/coda fs/coda/ include/linux/coda*.h include/uapi/linux/
coda*.h

CODA V4L2 MEM2MEM DRIVER

Mail

Philipp Zabel <p.zabel@pengutronix.de>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/coda.yaml drivers/media/
platform/chips-media/coda

CODE OF CONDUCT

Mail

Greg Kroah-Hartman <gregkh@linuxfoundation.org>

Status

Supported

Files

process/code-of-conduct-interpretation process/code-of-conduct

COMEDI DRIVERS

Mail

Ian Abbott <abbotti@mev.co.uk>, H Hartley Sweeten
<hsweeten@visionengravers.com>

Status

Odd Fixes

Files

drivers/comedi/ include/linux/comedi/ include/uapi/linux/comedi.h

COMMON CLK FRAMEWORK

Mail

Michael Turquette <mturquette@baylibre.com>, Stephen Boyd
<sboyd@kernel.org>

Mailing list

linux-clk@vger.kernel.org

Status

Maintained

Patchwork

<http://patchwork.kernel.org/project/linux-clk/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/clk/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/clk/linux.git)

Files

Documentation/devicetree/bindings/clock/ drivers/clk/ include/
dt-bindings/clock/ include/linux/clk-pr* include/linux/clk/ include/
linux/of_clk.h

Excluded

drivers/clk/clkdev.c

COMMON INTERNET FILE SYSTEM CLIENT (CIFS and SMB3)

Mail

Steve French <sfrench@samba.org>

Reviewer

Paulo Alcantara <pc@manguebit.com> (DFS, global name space), Ron-
nie Sahlberg <ronniesahlberg@gmail.com> (directory leases, sparse files),
Shyam Prasad N <sprasad@microsoft.com> (multichannel), Tom Talpey
<tom@talpey.com> (RDMA, smbdirect)

Mailing list

linux-cifs@vger.kernel.org, samba-technical@lists.samba.org (moderated for
non-subscribers)

Status

Supported

Web-page

<https://wiki.samba.org/index.php/LinuxCIFS>

SCM

git [git://git.samba.org/sfrench/cifs-2.6.git](https://git.samba.org/sfrench/cifs-2.6.git)

Files

Documentation/admin-guide/cifs/ fs/smb/client/ fs/smb/common/
include/uapi/linux/cifs

COMPACTPCI HOTPLUG CORE

Mail

Scott Murray <scott@spiteful.org>

Mailing list

linux-pci@vger.kernel.org

Status

Maintained

Files

drivers/pci/hotplug/cpci_hotplug*

COMPACTPCI HOTPLUG GENERIC DRIVER

Mail

Scott Murray <scott@spiteful.org>

Mailing list

linux-pci@vger.kernel.org

Status

Maintained

Files

drivers/pci/hotplug/cpcihp_generic.c

COMPACTPCI HOTPLUG ZIATECH ZT5550 DRIVER

Mail

Scott Murray <scott@spiteful.org>

Mailing list

linux-pci@vger.kernel.org

Status

Maintained

Files

drivers/pci/hotplug/cpcihp_zt5550.*

COMPAL LAPTOP SUPPORT

Mail

Cezary Jackiewicz <cezary.jackiewicz@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/compal-laptop.c

COMPILER ATTRIBUTES

Mail

Miguel Ojeda <ojeda@kernel.org>

Status

Maintained

Files

include/linux/compiler_attributes.h

COMPUTE EXPRESS LINK (CXL)

Mail

Davidlohr Bueso <dave@stgolabs.net>, Jonathan Cameron
<jonathan.cameron@huawei.com>, Dave Jiang <dave.jiang@intel.com>,
Alison Schofield <alison.schofield@intel.com>, Vishal Verma
<vishal.l.verma@intel.com>, Ira Weiny <ira.weiny@intel.com>, Dan Williams
<dan.j.williams@intel.com>

Mailing list

linux-cxl@vger.kernel.org

Status

Maintained

Files

drivers/cxl/ include/linux/cxl-event.h include/uapi/linux/cxl_mem.h
tools/testing/cxl/

COMPUTE EXPRESS LINK PMU (CPMU)

Mail

Jonathan Cameron <jonathan.cameron@huawei.com>

Mailing list

linux-cxl@vger.kernel.org

Status

Maintained

Files

admin-guide/perf/cxl drivers/perf/cxl_pmu.c

CONEXANT ACCESSRUNNER USB DRIVER

Mailing list

accessrunner-general@lists.sourceforge.net

Status

Orphan

Web-page

<http://accessrunner.sourceforge.net/>

Files

drivers/usb/atm/cxacru.c

CONFIDENTIAL COMPUTING THREAT MODEL FOR X86 VIRTUALIZATION (SNP/TDX)

Mail

Elena Reshetova <elena.reshetova@intel.com>, Carlos Bilbao <carlos.bilbao@amd.com>

Status

Maintained

Files

security/snp-tdx-threat-model

CONFIGFS

Mail

Joel Becker <jlbec@evilplan.org>, Christoph Hellwig <hch@lst.de>

Status

Supported

SCM

[git git://git.infradead.org/users/hch/configfs.git](https://git.infradead.org/users/hch/configfs.git)

Files

fs/configfs/ include/linux/configfs.h samples/configfs/

CONSOLE SUBSYSTEM

Mail

Greg Kroah-Hartman <gregkh@linuxfoundation.org>

Status

Supported

Files

drivers/video/console/ include/linux/console*

CONTEXT TRACKING

Mail

Frederic Weisbecker <frederic@kernel.org>, "Paul E. McKenney" <paulmck@kernel.org>

Status

Maintained

Files

include/linux/context_tracking* kernel/context_tracking.c

CONTROL GROUP (CGROUP)

Mail

Tejun Heo <tj@kernel.org>, Zefan Li <lizefan.x@bytedance.com>, Johannes Weiner <hannes@cmpxchg.org>

Mailing list

cgroups@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tj/cgroup.git](https://git.kernel.org/pub/scm/linux/kernel/git/tj/cgroup.git)

Files

Documentation/admin-guide/cgroup-v1/ admin-guide/cgroup-v2 include/linux/cgroup* kernel/cgroup/ tools/testing/selftests/cgroup/

CONTROL GROUP - BLOCK IO CONTROLLER (BLKIO)

Mail

Tejun Heo <tj@kernel.org>, Josef Bacik <josef@toxicpanda.com>, Jens Axboe <axboe@kernel.dk>

Mailing list

cgroups@vger.kernel.org, linux-block@vger.kernel.org

SCM

git [git://git.kernel.dk/linux-block](https://git.kernel.dk/linux-block)

Files

admin-guide/cgroup-v1/blkio-controller block/bfq-cgroup.c block/
blk-cgroup.c block/blk-iocost.c block/blk-iolatency.c block/
blk-throttle.c include/linux/blk-cgroup.h

CONTROL GROUP - CPUSET**Mail**

Waiman Long <longman@redhat.com>, Zefan Li <lizefan.x@bytedance.com>

Mailing list

cgroups@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tj/cgroup.git](https://git.kernel.org/pub/scm/linux/kernel/git/tj/cgroup.git)

Files

admin-guide/cgroup-v1/cpusets include/linux/cpuset.h kernel/cgroup/
cpuset.c tools/testing/selftests/cgroup/test_cpuset.c tools/testing/
selftests/cgroup/test_cpuset_prs.sh

CONTROL GROUP - MEMORY RESOURCE CONTROLLER (MEMCG)**Mail**

Johannes Weiner <hannes@cmpxchg.org>, Michal Hocko
<mhocko@kernel.org>, Roman Gushchin <roman.gushchin@linux.dev>,
Shakeel Butt <shakeel.butt@linux.dev>

Reviewer

Muchun Song <muchun.song@linux.dev>

Mailing list

cgroups@vger.kernel.org, linux-mm@kvack.org

Status

Maintained

Files

mm/memcontrol.c mm/swap_cgroup.c samples/cgroup/* tools/testing/
selftests/cgroup/memcg_protection.m tools/testing/selftests/cgroup/
test_hugetlb_memcg.c tools/testing/selftests/cgroup/test_kmem.c
tools/testing/selftests/cgroup/test_memcontrol.c

CORETEMP HARDWARE MONITORING DRIVER

Mail

Fenghua Yu <fenghua.yu@intel.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/coretemp drivers/hwmon/coretemp.c

CORSAIR-CPRO HARDWARE MONITOR DRIVER

Mail

Marius Zachmann <mail@mariuszachmann.de>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

drivers/hwmon/corsair-cpro.c

CORSAIR-PSU HARDWARE MONITOR DRIVER

Mail

Wilken Gottwalt <wilken.gottwalt@posteo.net>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/corsair-psu drivers/hwmon/corsair-psu.c

COUNTER SUBSYSTEM

Mail

William Breathitt Gray <william.gray@linaro.org>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/wbg/counter.git](https://git.kernel.org/pub/scm/linux/kernel/git/wbg/counter.git)

Files

Documentation/ABI/testing/sysfs-bus-counter driver-api/generic-counter
drivers/counter/ include/linux/counter.h include/uapi/linux/counter.
h tools/counter/

COUNTER WATCH EVENTS TOOL

Mail

Fabrice Gasnier <fabrice.gasnier@foss.st.com>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

tools/counter/counter_watch_events.c

CP2615 I2C DRIVER

Mail

Bence Csókás <bence98@sch.bme.hu>

Status

Maintained

Files

drivers/i2c/busses/i2c-cp2615.c

CPU FREQUENCY DRIVERS - VEXPRESS SPC ARM BIG LITTLE

Mail

Viresh Kumar <viresh.kumar@linaro.org>, Sudeep Holla
<sudeep.holla@arm.com>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

Web-page

<http://www.arm.com/products/processors/technologies/biglittleprocessing.php>

Files

drivers/cpufreq/vexpress-spc-cpufreq.c

CPU FREQUENCY SCALING FRAMEWORK

Mail

"Rafael J. Wysocki" <rafael@kernel.org>, Viresh Kumar
<viresh.kumar@linaro.org>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

bugs

<https://bugzilla.kernel.org>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/rafael/linux-pm.git](https://git.kernel.org/pub/scm/linux/kernel/git/rafael/linux-pm.git) git
git://git.kernel.org/pub/scm/linux/kernel/git/vireshk/pm.git (For ARM Updates)

Files

admin-guide/pm/cpufreq admin-guide/pm/intel_pstate Documentation/
cpu-freq/ Documentation/devicetree/bindings/cpufreq/ drivers/cpufreq/
include/linux/cpufreq.h include/linux/sched/cpufreq.h kernel/sched/
cpufreq*.c tools/testing/selftests/cpufreq/

CPU HOTPLUG

Mail

Thomas Gleixner <tglx@linutronix.de>, Peter Zijlstra <peterz@infradead.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git](https://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git) smp/core

Files

include/linux/cpu.h include/linux/cpufreq.h include/linux/smpboot.
h kernel/cpu.c kernel/smpboot.*

CPU IDLE TIME MANAGEMENT FRAMEWORK

Mail

"Rafael J. Wysocki" <rafael@kernel.org>, Daniel Lezcano
<daniel.lezcano@linaro.org>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

bugs

<https://bugzilla.kernel.org>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/rafael/linux-pm.git](https://git.kernel.org/pub/scm/linux/kernel/git/rafael/linux-pm.git)

Files

admin-guide/pm/cpuidle driver-api/pm/cpuidle drivers/cpuidle/ include/
linux/cpuidle.h

CPU POWER MONITORING SUBSYSTEM

Mail

Thomas Renninger <trenn@suse.com>, Shuah Khan <shuah@kernel.org>,
Shuah Khan <skhan@linuxfoundation.org>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

Files

tools/power/cpupower/

CPUID/MSR DRIVER

Mail

"H. Peter Anvin" <hpa@zytor.com>

Status

Maintained

Files

arch/x86/kernel/cpuid.c arch/x86/kernel/msr.c

CPUIDLE DRIVER - ARM BIG LITTLE

Mail

Lorenzo Pieralisi <lpieralisi@kernel.org>, Daniel Lezcano
<daniel.lezcano@linaro.org>

Mailing list

linux-pm@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for
non-subscribers)

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/rafael/linux-pm.git](https://git.kernel.org/pub/scm/linux/kernel/git/rafael/linux-pm.git)

Files

drivers/cpuidle/cpuidle-big_little.c

CPUIDLE DRIVER - ARM EXYNOS

Mail

Daniel Lezcano <daniel.lezcano@linaro.org>, Kukjin Kim <kgene@kernel.org>

Reviewer

Krzysztof Kozlowski <krzysztof.kozlowski@linaro.org>

Mailing list

linux-pm@vger.kernel.org, linux-samsung-soc@vger.kernel.org

Status

Maintained

Files

arch/arm/mach-exynos/pm.c drivers/cpuidle/cpuidle-exynos.c include/
linux/platform_data/cpuidle-exynos.h

CPUIDLE DRIVER - ARM PSCI

Mail

Lorenzo Pieralisi <lpieralisi@kernel.org>, Sudeep Holla
<sudeep.holla@arm.com>

Mailing list

linux-pm@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for
non-subscribers)

Status

Supported

Files

drivers/cpuidle/cpuidle-psci.c

CPUIDLE DRIVER - ARM PSCI PM DOMAIN

Mail

Ulf Hansson <ulf.hansson@linaro.org>

Mailing list

linux-pm@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for
non-subscribers)

Status

Supported

Files

drivers/cpuidle/cpuidle-psci-domain.c drivers/cpuidle/cpuidle-psci.h

CPUIDLE DRIVER - DT IDLE PM DOMAIN

Mail

Ulf Hansson <ulf.hansson@linaro.org>

Mailing list

linux-pm@vger.kernel.org

Status

Supported

Files

drivers/cpuidle/dt_idle_genpd.c drivers/cpuidle/dt_idle_genpd.h

CPUIDLE DRIVER - RISC-V SBI

Mail

Anup Patel <anup@brainfault.org>

Mailing list

linux-pm@vger.kernel.org, linux-riscv@lists.infradead.org

Status

Maintained

Files

drivers/cpuidle/cpuidle-riscv-sbi.c

CRAMFS FILESYSTEM

Mail

Nicolas Pitre <nico@fluxnic.net>

Status

Maintained

Files

filesystems/cramfs fs/cramfs/

CREATIVE SB0540

Mail

Bastien Nocera <hadess@hadess.net>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/hid/hid-creative-sb0540.c

CRYPTO API

Mail

Herbert Xu <herbert@gondor.apana.org.au>, "David S. Miller"
<davem@davemloft.net>

Mailing list

linux-crypto@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/herbert/cryptodev-2.6.git](https://git.kernel.org/pub/scm/linux/kernel/git/herbert/cryptodev-2.6.git) git
[git://git.kernel.org/pub/scm/linux/kernel/git/herbert/crypto-2.6.git](https://git.kernel.org/pub/scm/linux/kernel/git/herbert/crypto-2.6.git)

Files

Documentation/crypto/ Documentation/devicetree/bindings/crypto/
arch/*/crypto/ crypto/ drivers/crypto/ include/crypto/ include/linux/
crypto* lib/crypto/

CRYPTO SPEED TEST COMPARE

Mail

Wang Jinchao <wangjinchao@xfusion.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Maintained

Files

tools/crypto/tcrypt/tcrypt_speed_compare.py

CRYPTOGRAPHIC RANDOM NUMBER GENERATOR

Mail

Neil Horman <nhorman@tuxdriver.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Maintained

Files

crypto/ansi_cprng.c crypto/rng.c

CS3308 MEDIA DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Odd Fixes

Web-page

<http://linuxtv.org>

SCM

git git://linuxtv.org/media_tree.git

Files

drivers/media/i2c/cs3308.c

CS5535 Audio ALSA driver

Mail

Jaya Kumar <jayakumar.alsa@gmail.com>

Status

Maintained

Files

sound/pci/cs5535audio/

CTU CAN FD DRIVER

Mail

Pavel Pisa <pisa@cmp.felk.cvut.cz>, Ondrej Ille <ondrej.ille@gmail.com>

Mailing list

linux-can@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/can/ctu,ctucanfd.yaml drivers/
net/can/ctucanfd/

CVE ASSIGNMENT CONTACT

Mail

CVE Assignment Team <cve@kernel.org>

Status

Maintained

Files

[process/cve](#)

CW1200 WLAN driver

Status

Orphan

Files

[drivers/net/wireless/st/cw1200/](#)

CX18 VIDEO4LINUX DRIVER

Mail

Andy Walls <awalls@md.metrocast.net>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

[git git://linuxtv.org/media_tree.git](#)

Files

[drivers/media/pci/cx18/ include/uapi/linux/ivtv*](#)

CX2341X MPEG ENCODER HELPER MODULE

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

[git git://linuxtv.org/media_tree.git](#)

Files

drivers/media/common/cx2341x* include/media/drv-intf/cx2341x.h

CX24120 MEDIA DRIVER

Mail

Jemma Denson <jdenson@gmail.com>, Patrick Boettcher
<patrick.boettcher@posteo.de>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/dvb-frontends/cx24120*

CX88 VIDEO4LINUX DRIVER

Mail

Mauro Carvalho Chehab <mchehab@kernel.org>

Mailing list

linux-media@vger.kernel.org

Status

Odd fixes

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/driver-api/media/drivers/cx88* drivers/media/pci/cx88/

CXD2820R MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/dvb-frontends/cxd2820r*

CXGB3 ETHERNET DRIVER (CXGB3)**Mail**

Raju Rangoju <rajur@chelsio.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Web-page

<http://www.chelsio.com>

Files

drivers/net/ethernet/chelsio/cxgb3/

CXGB3 ISCSI DRIVER (CXGB3I)**Mail**

Varun Prakash <varun@chelsio.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Web-page

<http://www.chelsio.com>

Files

drivers/scsi/cxgbi/cxgb3i

CXGB4 CRYPTO DRIVER (chcr)**Mail**

Ayush Sawal <ayush.sawal@chelsio.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Supported

Web-page

<http://www.chelsio.com>

Files

drivers/crypto/chelsio

CXGB4 ETHERNET DRIVER (CXGB4)

Mail

Raju Rangoju <rajur@chelsio.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Web-page

<http://www.chelsio.com>

Files

drivers/net/ethernet/chelsio/cxgb4/

CXGB4 INLINE CRYPTO DRIVER

Mail

Ayush Sawal <ayush.sawal@chelsio.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Web-page

<http://www.chelsio.com>

Files

drivers/net/ethernet/chelsio/inline_crypto/

CXGB4 ISCSI DRIVER (CXGB4I)

Mail

Varun Prakash <varun@chelsio.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Web-page

<http://www.chelsio.com>

Files

drivers/scsi/cxgbi/cxgb4i

CXGB4 IWARP RNIC DRIVER (IW_CXGB4)**Mail**

Potnuri Bharat Teja <bharat@chelsio.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Supported

Web-page

<http://www.openfabrics.org>

Files

drivers/infiniband/hw/cxgb4/ include/uapi/rdma/cxgb4-abi.h

CXGB4VF ETHERNET DRIVER (CXGB4VF)**Mail**

Raju Rangoju <rajur@chelsio.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Web-page

<http://www.chelsio.com>

Files

drivers/net/ethernet/chelsio/cxgb4vf/

CXL (IBM Coherent Accelerator Processor Interface CAPI) DRIVER**Mail**

Frederic Barrat <fbarrat@linux.ibm.com>, Andrew Donnellan
<ajd@linux.ibm.com>

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Supported

Files

Documentation/ABI/testing/sysfs-class-cxl arch/powerpc/cxl arch/
powerpc/platforms/powernv/pci-cxl.c drivers/misc/cxl/ include/misc/
cxl* include/uapi/misc/cxl.h

CXLFLASH (IBM Coherent Accelerator Processor Interface CAPI Flash) SCSI DRIVER

Mail

Manoj N. Kumar <manoj@linux.ibm.com>, Matthew R. Ochs
<mrochs@linux.ibm.com>, Uma Krishnan <ukrishn@linux.ibm.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Files

arch/powerpc/cxlflash drivers/scsi/cxlflash/ include/uapi/scsi/
cxlflash_ioctl.h

CYBERPRO FB DRIVER

Mail

Russell King <linux@armlinux.org.uk>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Web-page

<http://www.armlinux.org.uk/>

Files

drivers/video/fbdev/cyber2000fb.*

CYCLADES PC300 DRIVER

Status

Orphan

Files

drivers/net/wan/pc300*

CYPRESS CY8C95X0 PINCTRL DRIVER

Mail

Patrick Rudolph <patrick.rudolph@9elements.com>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

drivers/pinctrl/pinctrl-cy8c95x0.c

CYPRESS CY8CTMA140 TOUCHSCREEN DRIVER

Mail

Linus Walleij <linus.walleij@linaro.org>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/input/touchscreen/cy8ctma140.c

CYPRESS STREETFIGHTER TOUCHKEYS DRIVER

Mail

Yassine Oudjana <y.oudjana@protonmail.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/input/cypress-sf.yaml drivers/
input/keyboard/cypress-sf.c

CYPRESS_FIRMWARE MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/common/cypress_firmware*

CYTTSP TOUCHSCREEN DRIVER

Mail

Linus Walleij <linus.walleij@linaro.org>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/input/touchscreen/cyttsp*

D-LINK DIR-685 TOUCHKEYS DRIVER

Mail

Linus Walleij <linus.walleij@linaro.org>

Mailing list

linux-input@vger.kernel.org

Status

Supported

Files

drivers/input/keyboard/dlink-dir685-touchkeys.c

DALLAS/MAXIM DS1685-FAMILY REAL TIME CLOCK

Mail

Joshua Kinard <kumba@gentoo.org>

Status

Maintained

Files

drivers/rtc/rtc-ds1685.c include/linux/rtc/ds1685.h

DAMA SLAVE for AX.25

Mail

Joerg Reuter <jreuter@yaina.de>

Mailing list

linux-hams@vger.kernel.org

Status

Maintained

Web-page

<http://yaina.de/jreuter/> <http://www.qsl.net/dl1bke/>

Files

net/ax25/af_ax25.c net/ax25/ax25_dev.c net/ax25/ax25_ds_* net/
ax25/ax25_in.c net/ax25/ax25_out.c net/ax25/ax25_timer.c net/ax25/
sysctl_net_ax25.c

DATA ACCESS MONITOR**Mail**

SeongJae Park <sj@kernel.org>

Mailing list

damon@lists.linux.dev, linux-mm@kvack.org

Status

Maintained

Web-page

<https://damonitor.github.io>

P

mm/damon/maintainer-profile

SCM

git	git://git.kernel.org/pub/scm/linux/kernel/git/akpm/mm	quilt
	git://git.kernel.org/pub/scm/linux/kernel/git/akpm/25-new	git
	git://git.kernel.org/pub/scm/linux/kernel/git/sj/linux.git	damon/next

Files

Documentation/ABI/testing/sysfs-kernel-mm-damon Documentation/
admin-guide/mm/damon/ Documentation/mm/damon/ include/linux/damon.h
include/trace/events/damon.h mm/damon/ tools/testing/selftests/damon/

DAVICOM FAST ETHERNET (DMFE) NETWORK DRIVER**Mailing list**

netdev@vger.kernel.org

Status

Orphan

Files

networking/device_drivers/ethernet/dec/dmfe drivers/net/ethernet/dec/
tulip/dmfe.c

DC390/AM53C974 SCSI driver**Mail**

Hannes Reinecke <hare@suse.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Maintained

Files

drivers/scsi/am53c974.c

DC395x SCSI driver

Mail

Oliver Neukum <oliver@neukum.org>, Ali Akcaagac <aliakc@web.de>, Jamie Lenehan <lenehan@twibble.org>

Status

Maintained

Files

scsi/dc395x drivers/scsi/dc395x.*

DCCP PROTOCOL

Mailing list

dccp@vger.kernel.org

Status

Orphan

Web-page

<http://www.linuxfoundation.org/collaborate/workgroups/networking/dccp>

Files

include/linux/dccp.h include/linux/tfrc.h include/uapi/linux/dccp.h
net/dccp/

DEBUGOBJECTS:

Mail

Thomas Gleixner <tglx@linutronix.de>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git](https://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git) core/debugobjects

Files

include/linux/debugobjects.h lib/debugobjects.c

DECSTATION PLATFORM SUPPORT

Mail

"Maciej W. Rozycki" <macro@orcam.me.uk>

Mailing list

linux-mips@vger.kernel.org

Status

Maintained

Web-page

<http://www.linux-mips.org/wiki/DECstation>

Files

arch/mips/dec/ arch/mips/include/asm/dec/ arch/mips/include/asm/
mach-dec/

DEFXX FDDI NETWORK DRIVER

Mail

"Maciej W. Rozycki" <macro@orcam.me.uk>

Status

Maintained

Files

drivers/net/fddi/defxx.*

DEFZA FDDI NETWORK DRIVER

Mail

"Maciej W. Rozycki" <macro@orcam.me.uk>

Status

Maintained

Files

drivers/net/fddi/defza.*

DEINTERLACE DRIVERS FOR ALLWINNER H3

Mail

Jernej Skrabec <jernej.skrabec@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/allwinner,
sun8i-h3-deinterlace.yaml drivers/media/platform/sunxi/sun8i-di/

DELL LAPTOP DRIVER

Mail

Matthew Garrett <mjg59@srcf.ucam.org>, Pali Rohár <pali@kernel.org>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/dell/dell-laptop.c

DELL LAPTOP FREEFALL DRIVER

Mail

Pali Rohár <pali@kernel.org>

Status

Maintained

Files

drivers/platform/x86/dell/dell-smo8800.c

DELL LAPTOP RBTN DRIVER

Mail

Pali Rohár <pali@kernel.org>

Status

Maintained

Files

drivers/platform/x86/dell/dell-rbtn.*

DELL LAPTOP SMM DRIVER

Mail

Pali Rohár <pali@kernel.org>

Status

Maintained

Files

Documentation/ABI/obsolete/procfs-i8k drivers/hwmon/dell-smm-hwmon.c
include/uapi/linux/i8k.h

DELL REMOTE BIOS UPDATE DRIVER

Mail

Stuart Hayes <stuart.w.hayes@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

`drivers/platform/x86/dell/dell_rbu.c`

DELL SMBIOS DRIVER

Mail

Pali Rohár <pali@kernel.org>

Mailing list

Dell.Client.Kernel@dell.com, platform-driver-x86@vger.kernel.org

Status

Maintained

Files

`drivers/platform/x86/dell/dell-smbios.*`

DELL SMBIOS SMM DRIVER

Mailing list

Dell.Client.Kernel@dell.com, platform-driver-x86@vger.kernel.org

Status

Maintained

Files

`drivers/platform/x86/dell/dell-smbios-smm.c`

DELL SMBIOS WMI DRIVER

Mailing list

Dell.Client.Kernel@dell.com, platform-driver-x86@vger.kernel.org

Status

Maintained

Files

`drivers/platform/x86/dell/dell-smbios-wmi.c`
`dell-smbios-example.c`

`tools/wmi/`

DELL SYSTEMS MANAGEMENT BASE DRIVER (dcdbas)

Mail

Stuart Hayes <stuart.w.hayes@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

userspace-api/dcdbas drivers/platform/x86/dell/dcdbas.*

DELL WMI DDV DRIVER

Mail

Armin Wolf <W_Armin@gmx.de>

Status

Maintained

Files

Documentation/ABI/testing/debugfs-dell-wmi-ddv Documentation/ABI/testing/sysfs-platform-dell-wmi-ddv wmi/devices/dell-wmi-ddv drivers/platform/x86/dell/dell-wmi-ddv.c

DELL WMI DESCRIPTOR DRIVER

Mailing list

Dell.Client.Kernel@dell.com

Status

Maintained

Files

drivers/platform/x86/dell/dell-wmi-descriptor.c

DELL WMI HARDWARE PRIVACY SUPPORT

Mailing list

Dell.Client.Kernel@dell.com, platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/dell/dell-wmi-privacy.c

DELL WMI NOTIFICATIONS DRIVER

Mail

Matthew Garrett <mjg59@srcf.ucam.org>, Pali Rohár <pali@kernel.org>

Status

Maintained

Files

drivers/platform/x86/dell/dell-wmi-base.c

DELL WMI SYSMAN DRIVER

Mail

Prasanth Ksr <prasanth.ksr@dell.com>

Mailing list

Dell.Client.Kernel@dell.com, platform-driver-x86@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-class-firmware-attributes drivers/
platform/x86/dell/dell-wmi-sysman/

DELTA AHE-50DC FAN CONTROL MODULE DRIVER

Mail

Zev Weiss <zev@bewilderbeest.net>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

drivers/hwmon/pmbus/delta-ahe50dc-fan.c

DELTA DPS920AB PSU DRIVER

Mail

Robert Marko <robert.marko@sartura.hr>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/dps920ab drivers/hwmon/pmbus/dps920ab.c

DELTA NETWORKS TN48M CPLD DRIVERS

Mail

Robert Marko <robert.marko@sartura.hr>

Status

Maintained

Files

Documentation/devicetree/bindings/gpio/delta,tn48m-gpio.yaml
Documentation/devicetree/bindings/mfd/delta,tn48m-cpld.yaml
Documentation/devicetree/bindings/reset/delta,tn48m-reset.yaml
drivers/gpio/gpio-tn48m.c include/dt-bindings/reset/delta,
tn48m-reset.h

DELTA ST MEDIA DRIVER

Mail

Hugues Fruchet <hugues.fruchet@foss.st.com>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/platform/st/sti/delta

DENALI NAND DRIVER

Mailing list

linux-mtd@lists.infradead.org

Status

Orphan

Files

drivers/mtd/nand/raw/denali*

DESIGNWARE EDMA CORE IP DRIVER

Mail

Manivannan Sadhasivam <manivannan.sadhasivam@linaro.org>

Reviewer

Gustavo Pimentel <gustavo.pimentel@synopsys.com>, Serge Semin
<fancer.lancer@gmail.com>

Mailing list

dmaengine@vger.kernel.org

Status

Maintained

Files

drivers/dma/dw-edma/ include/linux/dma/edma.h

DESIGNWARE USB2 DRD IP DRIVER

Mail

Minas Harutyunyan <hminas@synopsys.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/balbi/usb.git](https://git.kernel.org/pub/scm/linux/kernel/git/balbi/usb.git)

Files

drivers/usb/dwc2/

DESIGNWARE USB3 DRD IP DRIVER

Mail

Thinh Nguyen <Thinh.Nguyen@synopsys.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

drivers/usb/dwc3/

DESIGNWARE XDATA IP DRIVER

Mail

Gustavo Pimentel <gustavo.pimentel@synopsys.com>

Mailing list

linux-pci@vger.kernel.org

Status

Maintained

Files

misc-devices/dw-xdata-pcie drivers/misc/dw-xdata-pcie.c

DEVANTECH SRF ULTRASONIC RANGER IIO DRIVER

Mail

Andreas Klinger <ak@it-klinger.de>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-bus-iio-distance-srf08 drivers/iio/proximity/srf*.c

DEVICE COREDUMP (DEV_COREDUMP)

Mail

Johannes Berg <johannes@sipsolutions.net>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

drivers/base/devcoredump.c include/linux/devcoredump.h

DEVICE DEPENDENCY HELPER SCRIPT

Mail

Saravana Kannan <saravanak@google.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

scripts/dev-needs.sh

DEVICE DIRECT ACCESS (DAX)**Mail**

Dan Williams <dan.j.williams@intel.com>, Vishal Verma
<vishal.l.verma@intel.com>, Dave Jiang <dave.jiang@intel.com>

Mailing list

nvdimm@lists.linux.dev, linux-cxl@vger.kernel.org

Status

Supported

Files

drivers/dax/

DEVICE FREQUENCY (DEVFREQ)**Mail**

MyungJoo Ham <myungjoo.ham@samsung.com>, Kyungmin Park <kyung-min.park@samsung.com>, Chanwoo Choi <cw00.choi@samsung.com>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/chanwoo/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/chanwoo/linux.git)

Files

Documentation/devicetree/bindings/devfreq/ Documentation/devicetree/
bindings/interconnect/mediatek,cci.yaml drivers/devfreq/ include/
linux/devfreq.h include/trace/events/devfreq.h

DEVICE FREQUENCY EVENT (DEVFREQ-EVENT)**Mail**

Chanwoo Choi <cw00.choi@samsung.com>

Mailing list

linux-pm@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/chanwoo/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/chanwoo/linux.git)

Files

Documentation/devicetree/bindings/devfreq/event/ drivers/devfreq/
devfreq-event.c drivers/devfreq/event/ include/dt-bindings/pmu/
exynos_ppmu.h include/linux/devfreq-event.h

DEVICE RESOURCE MANAGEMENT HELPERS**Mail**

Hans de Goede <hdegoede@redhat.com>

Reviewer

Matti Vaittinen <mazziesaccount@gmail.com>

Status

Maintained

Files

include/linux/devm-helpers.h

DEVICE-MAPPER (LVM)**Mail**

Alasdair Kergon <agk@redhat.com>, Mike Snitzer <snitzer@kernel.org>, Miku-
las Patocka <mpatocka@redhat.com>, dm-devel@lists.linux.dev

Mailing list

dm-devel@lists.linux.dev

Status

Maintained

Patchwork

<http://patchwork.kernel.org/project/dm-devel/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/device-mapper/linux-dm.git](https://git.kernel.org/pub/scm/linux/kernel/git/device-mapper/linux-dm.git)

Files

Documentation/admin-guide/device-mapper/ drivers/md/Kconfig drivers/
md/Makefile drivers/md/dm* drivers/md/persistent-data/ include/linux/
device-mapper.h include/linux/dm-*.h include/uapi/linux/dm-*.h

DEVLINK**Mail**

Jiri Pirko <jiri@resnulli.us>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

Documentation/networking/devlink include/net/devlink.h include/uapi/
linux/devlink.h net/devlink/

DH ELECTRONICS IMX6 DHCOM/DHCOR BOARD SUPPORT**Mail**

Christoph Niedermaier <cniedermaier@dh-electronics.com>

Mailing list

kernel@dh-electronics.com

Status

Maintained

Files

arch/arm/boot/dts/nxp/imx/imx6*-dhcom-* arch/arm/boot/dts/nxp/imx/
imx6*-dhcor-*

DH ELECTRONICS STM32MP1 DHCOM/DHCOR BOARD SUPPORT**Mail**

Marek Vasut <marex@denx.de>

Mailing list

kernel@dh-electronics.com

Status

Maintained

Files

arch/arm/boot/dts/st/stm32mp1*-dhcom-* arch/arm/boot/dts/st/
stm32mp1*-dhcor-*

DIALOG SEMICONDUCTOR DRIVERS**Mail**

Support Opensource <support.opensource@diasemi.com>

Status

Supported

Web-page

<http://www.dialog-semiconductor.com/products>

Files

Documentation/devicetree/bindings/input/da90??-onkey.txt
Documentation/devicetree/bindings/input/dlg,da72???.txt
Documentation/devicetree/bindings/mfd/da90*.txt Documentation/
devicetree/bindings/mfd/dlg,da90*.yaml Documentation/devicetree/
bindings/regulator/da92*.txt Documentation/devicetree/bindings/
regulator/dlg,da9*.yaml Documentation/devicetree/bindings/regulator/
dlg,slg51000.yaml Documentation/devicetree/bindings/sound/da[79]*.
txt Documentation/devicetree/bindings/thermal/da90??-thermal.txt

```
Documentation/devicetree/bindings/watchdog/dlg,da90??-watchdog.  
yaml Documentation/hwmon/da90???.rst drivers/gpio/gpio-da90???.c  
drivers/hwmon/da90??-hwmon.c drivers/iio/adc/da91??-*.c drivers/  
input/misc/da72??.[ch] drivers/input/misc/da90??_onkey.c drivers/  
input/touchscreen/da9052_tsi.c drivers/leds/leds-da90???.c drivers/  
mfd/da903x.c drivers/mfd/da90??-*.c drivers/mfd/da91??-*.c drivers/  
pinctrl/pinctrl-da90???.c drivers/power/supply/da9052-battery.c  
drivers/power/supply/da91??-*.c drivers/regulator/da90??-regulator.  
[ch] drivers/regulator/slq51000-regulator.[ch] drivers/rtc/rtc-da90?  
?.c drivers/thermal/da90??-thermal.c drivers/video/backlight/da90??  
_bl.c drivers/watchdog/da90??_wdt.c include/dt-bindings/regulator/  
dlg,da9*-regulator.h include/linux/mfd/da903x.h include/linux/mfd/  
da9052/ include/linux/mfd/da9055/ include/linux/mfd/da9062/ include/  
linux/mfd/da9063/ include/linux/mfd/da9150/ include/linux/regulator/  
da9211.h include/sound/da[79]*.h sound/soc/codecs/da[79]*.[ch]
```

DIAMOND SYSTEMS GPIO-MM GPIO DRIVER

Mail

William Breathitt Gray <william.gray@linaro.org>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

drivers/gpio/gpio-gpio-mm.c

DIGITEQ AUTOMOTIVE MGB4 V4L2 DRIVER

Mail

Martin Tuma <martin.tuma@digiteqautomotive.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

admin-guide/media/mgb4 drivers/media/pci/mgb4/

DIOLAN U2C-12 I2C DRIVER

Mail

Guenter Roeck <linux@roeck-us.net>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

drivers/i2c/busses/i2c-diolan-u2c.c

DIRECTORY NOTIFICATION (DNOTIFY)

Mail

Jan Kara <jack@suse.cz>

Reviewer

Amir Goldstein <amir73il@gmail.com>

Mailing list

linux-fsdevel@vger.kernel.org

Status

Maintained

Files

filesystems/dnotify fs/notify/dnotify/ include/linux/dnotify.h

DISK GEOMETRY AND PARTITION HANDLING

Mail

Andries Brouwer <aeb@cw.nl>

Status

Maintained

Web-page

<http://www.win.tue.nl/~aeb/linux/Large-Disk.html> <http://www.win.tue.nl/~aeb/linux/zip/zip-1.html> http://www.win.tue.nl/~aeb/partitions/partition_types-1.html

DISKQUOTA

Mail

Jan Kara <jack@suse.com>

Status

Maintained

Files

filesystems/quota fs/quota/ include/linux/quota*.h include/uapi/linux/quota*.h

DISPLAYLINK USB 2.0 FRAMEBUFFER DRIVER (UDLFB)

Mail

Bernie Thompson <bernie@plugable.com>

Mailing list

linux-fbdev@vger.kernel.org

Status

Maintained

Web-page

<http://plugable.com/category/projects/udlfb/>

Files

fb/udlfb drivers/video/fbdev/udlfb.c include/video/udlfb.h

DISTRIBUTED LOCK MANAGER (DLM)

Mail

Alexander Aring <aahringo@redhat.com>, David Teigland <teigland@redhat.com>

Mailing list

gfs2@lists.linux.dev

Status

Supported

Web-page

<https://pagure.io/dlm>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/teigland/linux-dlm.git](https://git.kernel.org/pub/scm/linux/kernel/git/teigland/linux-dlm.git)

Files

fs/dlm/

DMA BUFFER SHARING FRAMEWORK

Mail

Sumit Semwal <sumit.semwal@linaro.org>, Christian König <christian.koenig@amd.com>

Mailing list

linux-media@vger.kernel.org, dri-devel@lists.freedesktop.org, linaro-mm-sig@lists.linaro.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

driver-api/dma-buf userspace-api/dma-buf-alloc-exchange drivers/dma-buf/

include/linux/*fence.h include/linux/dma-buf.h include/linux/
dma-resv.h

Content regex

\bdma_(?:buf|fence|resv)\b

DMA GENERIC OFFLOAD ENGINE SUBSYSTEM**Mail**

Vinod Koul <vkoul@kernel.org>

Mailing list

dmaengine@vger.kernel.org

Status

Maintained

Patchwork

<https://patchwork.kernel.org/project/linux-dmaengine/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/vkoul/dmaengine.git](https://git.kernel.org/pub/scm/linux/kernel/git/vkoul/dmaengine.git)

Files

Documentation/devicetree/bindings/dma/ Documentation/driver-api/
dmaengine/ drivers/dma/ include/dt-bindings/dma/ include/linux/dma/
include/linux/dmaengine.h include/linux/of_dma.h

DMA MAPPING BENCHMARK**Mail**

Xiang Chen <chenxiang66@hisilicon.com>

Mailing list

iommu@lists.linux.dev

Files

kernel/dma/map_benchmark.c tools/testing/selftests/dma/

DMA MAPPING HELPERS**Mail**

Christoph Hellwig <hch@lst.de>, Marek Szyprowski
<m.szyprowski@samsung.com>

Reviewer

Robin Murphy <robin.murphy@arm.com>

Mailing list

iommu@lists.linux.dev

Status

Supported

Web-page

<http://git.infradead.org/users/hch/dma-mapping.git>

SCM

git [git://git.infradead.org/users/hch/dma-mapping.git](http://git.infradead.org/users/hch/dma-mapping.git)

Files

include/asm-generic/dma-mapping.h include/linux/dma-direct.h include/
linux/dma-map-ops.h include/linux/dma-mapping.h include/linux/
swiotlb.h kernel/dma/

DMA-BUF HEAPS FRAMEWORK

Mail

Sumit Semwal <sumit.semwal@linaro.org>

Reviewer

Benjamin Gaignard <benjamin.gaignard@collabora.com>, Brian Starkey
<Brian.Starkey@arm.com>, John Stultz <jstultz@google.com>, T.J. Mercier
<tjmercier@google.com>

Mailing list

linux-media@vger.kernel.org, dri-devel@lists.freedesktop.org, linaro-mm-sig@lists.linaro.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](http://anongit.freedesktop.org/drm/drm-misc)

Files

drivers/dma-buf/dma-heap.c drivers/dma-buf/heaps/* include/linux/
dma-heap.h include/uapi/linux/dma-heap.h

DMC FREQUENCY DRIVER FOR SAMSUNG EXYNOS5422

Mail

Lukasz Luba <lukasz.luba@arm.com>

Mailing list

linux-pm@vger.kernel.org, linux-samsung-soc@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/memory-controllers/samsung,
exynos5422-dmc.yaml drivers/memory/samsung/exynos5422-dmc.c

DME1737 HARDWARE MONITOR DRIVER

Mail

Juerg Haefliger <juergh@proton.me>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/dme1737 drivers/hwmon/dme1737.c

DMI/SMBIOS SUPPORT

Mail

Jean Delvare <jdelvare@suse.com>

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/jdelvare/staging.git](https://git.kernel.org/pub/scm/linux/kernel/git/jdelvare/staging.git) dmi-for-next

Files

Documentation/ABI/testing/sysfs-firmware-dmi-tables drivers/
firmware/dmi-id.c drivers/firmware/dmi_scan.c include/linux/dmi.h

DOCUMENTATION

Mail

Jonathan Corbet <corbet@lwn.net>

Mailing list

linux-doc@vger.kernel.org

Status

Maintained

P

doc-guide/maintainer-profile

SCM

git [git://git.lwn.net/linux.git](https://git.lwn.net/linux.git) docs-next

Files

Documentation/ scripts/documentation-file-ref-check scripts/
kernel-doc scripts/sphinx-pre-install

Excluded

Documentation/ABI/ Documentation/admin-guide/media/ Documentation/
devicetree/ Documentation/driver-api/media/ Documentation/
firmware-guide/acpi/ Documentation/i2c/ Documentation/netlink/
Documentation/power/ Documentation/spi/ Documentation/userspace-api/
media/

DOCUMENTATION PROCESS

Mail

Jonathan Corbet <corbet@lwn.net>

Mailing list

workflows@vger.kernel.org

Status

Maintained

Files

Documentation/maintainer/ Documentation/process/

DOCUMENTATION REPORTING ISSUES

Mail

Thorsten Leemhuis <linux@leemhuis.info>

Mailing list

linux-doc@vger.kernel.org

Status

Maintained

Files

admin-guide/quickly-build-trimmed-linux admin-guide/reporting-issues

DOCUMENTATION SCRIPTS

Mail

Mauro Carvalho Chehab <mchehab@kernel.org>

Mailing list

linux-doc@vger.kernel.org

Status

Maintained

Files

Documentation/sphinx/parse-headers.pl scripts/
documentation-file-ref-check scripts/sphinx-pre-install

DOCUMENTATION/ITALIAN

Mail

Federico Vaga <federico.vaga@vaga.pv.it>

Mailing list

linux-doc@vger.kernel.org

Status

Maintained

Files

Documentation/translations/it_IT

DOCUMENTATION/JAPANESE**Reviewer**

Akira Yokosawa <akiyks@gmail.com>

Mailing list

linux-doc@vger.kernel.org

Status

Maintained

Files

Documentation/translations/ja_JP

DONGWOON DW9714 LENS VOICE COIL DRIVER**Mail**

Sakari Ailus <sakari.ailus@linux.intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/dongwoon,dw9714.yaml
drivers/media/i2c/dw9714.c

DONGWOON DW9719 LENS VOICE COIL DRIVER**Mail**

Daniel Scally <djrscally@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/i2c/dw9719.c

DONGWOON DW9768 LENS VOICE COIL DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/dongwoon,dw9768.yaml
drivers/media/i2c/dw9768.c

DONGWOON DW9807 LENS VOICE COIL DRIVER

Mail

Sakari Ailus <sakari.ailus@linux.intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/dongwoon,dw9807-vcm.yaml
drivers/media/i2c/dw9807-vcm.c

DOUBLETALK DRIVER

Mail

"James R. Van Zandt" <jrv@vanzandt.mv.com>

Mailing list

blinux-list@redhat.com

Status

Maintained

Files

drivers/char/dtlk.c include/linux/dtlk.h

DPAA2 DATAPATH I/O (DPIO) DRIVER

Mail

Roy Pledge <Roy.Pledge@nxp.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

drivers/soc/fsl/dpio

DPAA2 ETHERNET DRIVER

Mail

Ioana Ciornei <ioana.ciornei@nxp.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

networking/device_drivers/ethernet/freescale/dpaa2/ethernet-driver
networking/device_drivers/ethernet/freescale/dpaa2/mac-phy-support drivers/
net/ethernet/freescale/dpaa2/Kconfig drivers/net/ethernet/freescale/
dpaa2/Makefile drivers/net/ethernet/freescale/dpaa2/dpaa2-eth*
drivers/net/ethernet/freescale/dpaa2/dpaa2-mac* drivers/net/
ethernet/freescale/dpaa2/dpaa2-xsk* drivers/net/ethernet/freescale/
dpaa2/dpkg.h drivers/net/ethernet/freescale/dpaa2/dpmac* drivers/
net/ethernet/freescale/dpaa2/dpni*

DPAA2 ETHERNET SWITCH DRIVER

Mail

Ioana Ciornei <ioana.ciornei@nxp.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

networking/device_drivers/ethernet/freescale/dpaa2/switch-driver drivers/
net/ethernet/freescale/dpaa2/dpaa2-switch* drivers/net/ethernet/
freescale/dpaa2/dpsw*

DPLL SUBSYSTEM

Mail

Vadim Fedorenko <vadim.fedorenko@linux.dev>, Arkadiusz Kubalewski <arkadiusz.kubalewski@intel.com>, Jiri Pirko <jiri@resnulli.us>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

driver-api/dpll drivers/dpll/* include/linux/dpll.h include/uapi/linux/dpll.h

DRBD DRIVER

Mail

Philipp Reisner <philipp.reisner@linbit.com>, Lars Ellenberg <lars.ellenberg@linbit.com>, Christoph Böhmwalder <christoph.boehmwalder@linbit.com>

Mailing list

drbd-dev@lists.linbit.com

Status

Supported

Web-page

<http://www.drbd.org>

SCM

git [git://git.linbit.com/linux-drbd.git](https://git.linbit.com/linux-drbd.git) git [git://git.linbit.com/drbd-8.4.git](https://git.linbit.com/drbd-8.4.git)

Files

Documentation/admin-guide/blockdev/ drivers/block/drbd/ include/linux/drbd* lib/lru_cache.c

DRIVER COMPONENT FRAMEWORK

Mailing list

dri-devel@lists.freedesktop.org

Files

drivers/base/component.c include/linux/component.h

DRIVER CORE, KOBJECTS, DEBUGFS AND SYSFS

Mail

Greg Kroah-Hartman <gregkh@linuxfoundation.org>

Reviewer

"Rafael J. Wysocki" <rafael@kernel.org>

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/gregkh/driver-core.git](https://git.kernel.org/pub/scm/linux/kernel/git/gregkh/driver-core.git)

Files

core-api/kobject drivers/base/ fs/debugfs/ fs/sysfs/ include/linux/
debugfs.h include/linux/fwnode.h include/linux/kobj* include/linux/
property.h lib/kobj*

DRIVERS FOR OMAP ADAPTIVE VOLTAGE SCALING (AVS)

Mail

Nishanth Menon <nm@ti.com>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

Files

drivers/soc/ti/smartreflex.c include/linux/power/smartreflex.h

DRM ACCEL DRIVERS FOR INTEL VPU

Mail

Jacek Lawrynowicz <jacek.lawrynowicz@linux.intel.com>, Stanislaw Gruszka
<stanislaw.gruszka@linux.intel.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Supported

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

drivers/accel/ivpu/ include/uapi/drm/ivpu_accel.h

DRM COMPUTE ACCELERATORS DRIVERS AND FRAMEWORK

Mail

Oded Gabbay <ogabbay@kernel.org>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

chat

<irc://irc.oftc.net/dri-devel>

SCM

git <https://git.kernel.org/pub/scm/linux/kernel/git/ogabbay/accel.git>

Files

Documentation/accel/ drivers/accel/ include/drm/drm_accel.h

DRM DRIVER FOR ALLWINNER DE2 AND DE3 ENGINE

Mail

Maxime Ripard <mripard@kernel.org>, Chen-Yu Tsai <wens@csie.org>

Reviewer

Jernej Skrabec <jernej.skrabec@gmail.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Supported

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

drivers/gpu/drm/sun4i/sun8i*

DRM DRIVER FOR ARM PL111 CLCD

Status

Orphan

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

drivers/gpu/drm/pl111/

DRM DRIVER FOR ARM VERSATILE TFT PANELS

Mail

Linus Walleij <linus.walleij@linaro.org>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/panel/arm,
versatile-tft-panel.yaml drivers/gpu/drm/panel/panel-arm-versatile.c

DRM DRIVER FOR ASPEED BMC GFX

Mail

Joel Stanley <joel@jms.id.au>

Mailing list

linux-aspeed@lists.ozlabs.org (moderated for non-subscribers)

Status

Supported

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/gpu/aspeed-gfx.txt drivers/gpu/
drm/aspeed/

DRM DRIVER FOR AST SERVER GRAPHICS CHIPS

Mail

Dave Airlie <airlied@redhat.com>

Reviewer

Thomas Zimmermann <tzimmermann@suse.de>, Jocelyn Falempe
<jfalempe@redhat.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Supported

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

drivers/gpu/drm/ast/

DRM DRIVER FOR BOCHS VIRTUAL GPU

Mail

Gerd Hoffmann <kraxel@redhat.com>

Mailing list

virtualization@lists.linux.dev

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

`drivers/gpu/drm/tiny/bochs.c`

DRM DRIVER FOR BOE HIMAX8279D PANELS

Mail

Jerry Han <hanxu5@huaqin.corp-partner.google.com>

Status

Maintained

Files

`Documentation/devicetree/bindings/display/panel/boe,himax8279d.yaml`
`drivers/gpu/drm/panel/panel-boe-himax8279d.c`

DRM DRIVER FOR CHIPONE ICN6211 MIPI-DSI to RGB CONVERTER BRIDGE

Mail

Jagan Teki <jagan@amarulasolutions.com>

Status

Maintained

Files

`Documentation/devicetree/bindings/display/bridge/chipone,icn6211.yaml`
`drivers/gpu/drm/bridge/chipone-icn6211.c`

DRM DRIVER FOR EBBG FT8719 PANEL

Mail

Joel Selvaraj <jo@jsfamily.in>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

`Documentation/devicetree/bindings/display/panel/ebbg,ft8719.yaml`
`drivers/gpu/drm/panel/panel-ebbg-ft8719.c`

DRM DRIVER FOR FARADAY TVE200 TV ENCODER

Mail

Linus Walleij <linus.walleij@linaro.org>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

drivers/gpu/drm/tve200/

DRM DRIVER FOR FEIXIN K101 IM2BA02 MIPI-DSI LCD PANELS

Mail

Icenowy Zheng <icenowy@aosc.io>

Status

Maintained

Files

Documentation/devicetree/bindings/display/panel/feixin,
k101-im2ba02.yaml drivers/gpu/drm/panel/panel-feixin-k101-im2ba02.c

DRM DRIVER FOR FEIYANG FY07024DI26A30-D MIPI-DSI LCD PANELS

Mail

Jagan Teki <jagan@amarulasolutions.com>

Status

Maintained

Files

Documentation/devicetree/bindings/display/panel/
feiyang,fy07024di26a30d.yaml drivers/gpu/drm/panel/
panel-feiyang-fy07024di26a30d.c

DRM DRIVER FOR FIRMWARE FRAMEBUFFERS

Mail

Thomas Zimmermann <tzimmermann@suse.de>, Javier Martinez Canillas
<javierm@redhat.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

drivers/gpu/drm/drm_aperture.c drivers/gpu/drm/tiny/ofdrm.c drivers/
gpu/drm/tiny/simplydrm.c drivers/video/aperture.c drivers/video/
nomodeset.c include/drm/drm_aperture.h include/linux/aperture.h
include/video/nomodeset.h

DRM DRIVER FOR GENERIC EDP PANELS

Reviewer

Douglas Anderson <dianders@chromium.org>

Files

Documentation/devicetree/bindings/display/panel/panel-edp.yaml
drivers/gpu/drm/panel/panel-edp.c

DRM DRIVER FOR GENERIC USB DISPLAY

Mail

Noralf Trønnes <noralf@tronnes.org>

Status

Maintained

Web-page

<https://github.com/notro/gud/wiki>

SCM

git git://anongit.freedesktop.org/drm/drm-misc

Files

drivers/gpu/drm/gud/ include/drm/gud.h

DRM DRIVER FOR GRAIN MEDIA GM12U320 PROJECTORS

Mail

Hans de Goede <hdegoede@redhat.com>

Status

Maintained

SCM

git git://anongit.freedesktop.org/drm/drm-misc

Files

drivers/gpu/drm/tiny/gm12u320.c

DRM DRIVER FOR HIMAX HX8394 MIPI-DSI LCD panels

Mail

Ondrej Jirman <megi@xff.cz>, Javier Martinez Canillas <javierm@redhat.com>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/panel/himax,hx8394.yaml
drivers/gpu/drm/panel/panel-himax-hx8394.c

DRM DRIVER FOR HX8357D PANELS

Status

Orphan

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/himax,hx8357d.txt
drivers/gpu/drm/tiny/hx8357d.c

DRM DRIVER FOR HYPERV SYNTHETIC VIDEO DEVICE

Mail

Deepak Rawat <drawat.floss@gmail.com>

Mailing list

linux-hyperv@vger.kernel.org, dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

drivers/gpu/drm/hyperv

DRM DRIVER FOR ILITEK ILI9225 PANELS

Mail

David Lechner <david@lechnology.com>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/ilitek,ili9225.txt
drivers/gpu/drm/tiny/ili9225.c

DRM DRIVER FOR ILITEK ILI9486 PANELS

Mail

Kamlesh Gurudasani <kamlesh.gurudasani@gmail.com>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/ilitek,ili9486.yaml
drivers/gpu/drm/tiny/ili9486.c

DRM DRIVER FOR ILITEK ILI9805 PANELS

Mail

Michael Trimarchi <michael@amarulasolutions.com>

Status

Maintained

Files

Documentation/devicetree/bindings/display/panel/ilitek,ili9805.yaml
drivers/gpu/drm/panel/panel-ilitek-ili9805.c

DRM DRIVER FOR JADARD JD9365DA-H3 MIPI-DSI LCD PANELS

Mail

Jagan Teki <jagan@edgeble.ai>

Status

Maintained

Files

Documentation/devicetree/bindings/display/panel/jadard,jd9365da-h3.
yaml drivers/gpu/drm/panel/panel-jadard-jd9365da-h3.c

DRM DRIVER FOR LOGICVC DISPLAY CONTROLLER

Mail

Paul Kocialkowski <paul.kocialkowski@bootlin.com>

Status

Supported

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

drivers/gpu/drm/logicvc/

DRM DRIVER FOR LVDS PANELS

Mail

Laurent Pinchart <laurent.pinchart@ideasonboard.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/lvds.yaml Documentation/
devicetree/bindings/display/panel/panel-lvds.yaml drivers/gpu/drm/
panel/panel-lvds.c

DRM DRIVER FOR MANTIX MLAF057WE51 PANELS

Mail

Guido Günther <agx@sigxcpu.org>

Reviewer

Purism Kernel Team <kernel@puri.sm>

Status

Maintained

Files

Documentation/devicetree/bindings/display/panel/mantix,
mlaf057we51-x.yaml drivers/gpu/drm/panel/panel-mantix-mlaf057we51.c

DRM DRIVER FOR MGA G200 GRAPHICS CHIPS

Mail

Dave Airlie <airlied@redhat.com>

Reviewer

Thomas Zimmermann <tzimmermann@suse.de>, Jocelyn Falemppe
<jfalemppe@redhat.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Supported

SCM

`git git://anongit.freedesktop.org/drm/drm-misc`

Files

`drivers/gpu/drm/mgag200/`

DRM DRIVER FOR MI0283QT

Mail

Noralf Trønnes <noralf@tronnes.org>

Status

Maintained

SCM

`git git://anongit.freedesktop.org/drm/drm-misc`

Files

`Documentation/devicetree/bindings/display/multi-inno,mi0283qt.txt`
`drivers/gpu/drm/tiny/mi0283qt.c`

DRM DRIVER FOR MIPI DBI compatible panels

Mail

Noralf Trønnes <noralf@tronnes.org>

Status

Maintained

Web-page

<https://github.com/notro/panel-mipi-dbi/wiki>

SCM

`git git://anongit.freedesktop.org/drm/drm-misc`

Files

`Documentation/devicetree/bindings/display/panel/panel-mipi-dbi-spi.yaml`
`drivers/gpu/drm/tiny/panel-mipi-dbi.c`

DRM DRIVER FOR MSM ADRENO GPU

Mail

Rob Clark <robdclark@gmail.com>, Abhinav Kumar
 <quic_abhinavk@quicinc.com>, Dmitry Baryshkov
 <dmitry.baryshkov@linaro.org>

Reviewer

Sean Paul <sean@poorly.run>, Marijn Suijten <marijn.suijten@somainline.org>

Mailing list

linux-arm-msm@vger.kernel.org, dri-devel@lists.freedesktop.org, freedreno@lists.freedesktop.org

Status

Maintained

bugs

<https://gitlab.freedesktop.org/drm/msm/-/issues>

SCM

git <https://gitlab.freedesktop.org/drm/msm.git>

Files

Documentation/devicetree/bindings/display/msm/ drivers/gpu/drm/ci/
 xfails/msm* drivers/gpu/drm/msm/ include/uapi/drm/msm_drm.h

DRM DRIVER FOR NOVATEK NT35510 PANELS

Mail

Linus Walleij <linus.walleij@linaro.org>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/panel/novatek,nt35510.
 yaml drivers/gpu/drm/panel/panel-novatek-nt35510.c

DRM DRIVER FOR NOVATEK NT35560 PANELS

Mail

Linus Walleij <linus.walleij@linaro.org>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/panel/sony,acx424akp.yaml
 drivers/gpu/drm/panel/panel-novatek-nt35560.c

DRM DRIVER FOR NOVATEK NT36523 PANELS

Mail

Jianhua Lu <lujianhua000@gmail.com>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/panel/novatek,nt36523.
yaml drivers/gpu/drm/panel/panel-novatek-nt36523.c

DRM DRIVER FOR NOVATEK NT36672A PANELS

Mail

Sumit Semwal <sumit.semwal@linaro.org>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/panel/novatek,nt36672a.
yaml drivers/gpu/drm/panel/panel-novatek-nt36672a.c

DRM DRIVER FOR NVIDIA GEFORCE/QUADRO GPUS

Mail

Karol Herbst <kherbst@redhat.com>, Lyude Paul <lyude@redhat.com>, Danilo Krummrich <dakr@redhat.com>

Mailing list

dri-devel@lists.freedesktop.org, nouveau@lists.freedesktop.org

Status

Supported

Web-page

<https://nouveau.freedesktop.org/>

Patchwork

<https://patchwork.freedesktop.org/project/nouveau/> https://gitlab.freedesktop.org/drm/nouveau/-/merge_requests

bugs

<https://gitlab.freedesktop.org/drm/nouveau/-/issues>

chat

<irc://irc.oftc.net/nouveau>

SCM

git <https://gitlab.freedesktop.org/drm/nouveau.git>

Files

drivers/gpu/drm/nouveau/ include/uapi/drm/nouveau_drm.h

DRM DRIVER FOR OLIMEX LCD-OLINUXINO PANELS**Mail**

Stefan Mavrodiev <stefan@olimex.com>

Status

Maintained

Files

Documentation/devicetree/bindings/display/panel/olimex,
lcd-olinuxino.yaml drivers/gpu/drm/panel/panel-olimex-lcd-olinuxino.
c

DRM DRIVER FOR PARADE PS8640 BRIDGE CHIP**Reviewer**

Douglas Anderson <dianders@chromium.org>

Files

Documentation/devicetree/bindings/display/bridge/ps8640.yaml
drivers/gpu/drm/bridge/parade-ps8640.c

DRM DRIVER FOR PERVASIVE DISPLAYS REPAPER PANELS**Mail**

Noralf Trønnes <noralf@tronnes.org>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/repaper.txt drivers/gpu/
drm/tiny/repaper.c

DRM DRIVER FOR QEMU'S CIRRUS DEVICE

Mail

Dave Airlie <airlied@redhat.com>, Gerd Hoffmann <kraxel@redhat.com>

Mailing list

virtualization@lists.linux.dev

Status

Obsolete

Web-page

<https://www.kraxel.org/blog/2014/10/qemu-using-cirrus-considered-harmful/>

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

`drivers/gpu/drm/tiny/cirrus.c`

DRM DRIVER FOR QXL VIRTUAL GPU

Mail

Dave Airlie <airlied@redhat.com>, Gerd Hoffmann <kraxel@redhat.com>

Mailing list

virtualization@lists.linux.dev, spice-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

`drivers/gpu/drm/qxl/ include/uapi/drm/qxl_drm.h`

DRM DRIVER FOR RAYDIUM RM67191 PANELS

Mail

Robert Chiras <robert.chiras@nxp.com>

Status

Maintained

Files

`Documentation/devicetree/bindings/display/panel/raydium,rm67191.yaml`
`drivers/gpu/drm/panel/panel-raydium-rm67191.c`

DRM DRIVER FOR SAMSUNG DB7430 PANELS

Mail

Linus Walleij <linus.walleij@linaro.org>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/panel/samsung,lms397kf04.
yaml drivers/gpu/drm/panel/panel-samsung-db7430.c

DRM DRIVER FOR SAMSUNG MIPI DSIM BRIDGE

Mail

Inki Dae <inki.dae@samsung.com>, Jagan Teki <jagan@amarulasolutions.com>, Marek Szyprowski <m.szyprowski@samsung.com>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/bridge/samsung,mipi-dsim.
yaml drivers/gpu/drm/bridge/samsung-dsim.c include/drm/bridge/
samsung-dsim.h

DRM DRIVER FOR SAMSUNG S6D27A1 PANELS

Mail

Markuss Broks <markuss.broks@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/display/panel/samsung,s6d27a1.
yaml drivers/gpu/drm/panel/panel-samsung-s6d27a1.c

DRM DRIVER FOR SAMSUNG S6D7AA0 PANELS

Mail

Artur Weber <aweber.kernel@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/display/panel/samsung,s6d7aa0.
yaml drivers/gpu/drm/panel/panel-samsung-s6d7aa0.c

DRM DRIVER FOR SITRONIX ST7586 PANELS

Mail

David Lechner <david@lechnology.com>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/sitronix,st7586.txt
drivers/gpu/drm/tiny/st7586.c

DRM DRIVER FOR SITRONIX ST7701 PANELS

Mail

Jagan Teki <jagan@amarulasolutions.com>

Status

Maintained

Files

Documentation/devicetree/bindings/display/panel/sitronix,st7701.
yaml drivers/gpu/drm/panel/panel-sitronix-st7701.c

DRM DRIVER FOR SITRONIX ST7703 PANELS

Mail

Guido Günther <agx@sigxcpu.org>

Reviewer

Purism Kernel Team <kernel@puri.sm>, Ondrej Jirman <megi@xff.cz>

Status

Maintained

Files

Documentation/devicetree/bindings/display/panel/rocktech,
jh057n00900.yaml drivers/gpu/drm/panel/panel-sitronix-st7703.c

DRM DRIVER FOR SITRONIX ST7735R PANELS

Mail

David Lechner <david@lechnology.com>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/sitronix,st7735r.yaml
drivers/gpu/drm/tiny/st7735r.c

DRM DRIVER FOR SOLOMON SSD130X OLED DISPLAYS

Mail

Javier Martinez Canillas <javierm@redhat.com>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/solomon,ssd-common.yaml
Documentation/devicetree/bindings/display/solomon,ssd13*.yaml
drivers/gpu/drm/solomon/ssd130x*

DRM DRIVER FOR ST-ERICSSON MCDE

Mail

Linus Walleij <linus.walleij@linaro.org>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/ste,mcde.yaml drivers/gpu/
drm/mcde/

DRM DRIVER FOR SYNAPTICS R63353 PANELS

Mail

Michael Trimarchi <michael@amarulasolutions.com>

Status

Maintained

Files

Documentation/devicetree/bindings/display/panel/synaptics,r63353.
yaml drivers/gpu/drm/panel/panel-synaptics-r63353.c

DRM DRIVER FOR TI DLPC3433 MIPI DSI TO DMD BRIDGE

Mail

Jagan Teki <jagan@amarulasolutions.com>

Status

Maintained

Files

Documentation/devicetree/bindings/display/bridge/ti,dlpc3433.yaml
drivers/gpu/drm/bridge/ti-dlpc3433.c

DRM DRIVER FOR TI SN65DSI86 BRIDGE CHIP

Reviewer

Douglas Anderson <dianders@chromium.org>

Files

Documentation/devicetree/bindings/display/bridge/ti,sn65dsi86.yaml
drivers/gpu/drm/bridge/ti-sn65dsi86.c

DRM DRIVER FOR TPO TPG110 PANELS

Mail

Linus Walleij <linus.walleij@linaro.org>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/panel/tpo,tpg110.yaml
drivers/gpu/drm/panel/panel-tpo-tpg110.c

DRM DRIVER FOR USB DISPLAYLINK VIDEO ADAPTERS

Mail

Dave Airlie <airlied@redhat.com>

Reviewer

Sean Paul <sean@poorly.run>, Thomas Zimmermann <tzimmermann@suse.de>

Mailing list

dri-devel@lists.freedesktop.org

Status

Supported

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

drivers/gpu/drm/udl/

DRM DRIVER FOR VIRTUAL KERNEL MODESETTING (VKMS)

Mail

Rodrigo Siqueira <rodrigosiueiramelo@gmail.com>, Melissa Wen
<melissa.srw@gmail.com>, Máira Canal <mairacanal@riseup.net>

Reviewer

Haneen Mohammed <hamohammed.sa@gmail.com>, Daniel Vetter
<daniel@ffwll.ch>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

gpu/vkms drivers/gpu/drm/vkms/

DRM DRIVER FOR VIRTUALBOX VIRTUAL GPU

Mail

Hans de Goede <hdegoede@redhat.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

drivers/gpu/drm/vboxvideo/

DRM DRIVER FOR VMWARE VIRTUAL GPU

Mail

Zack Rusin <zack.rusin@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Supported

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

drivers/gpu/drm/vmwgfx/ include/uapi/drm/vmwgfx_drm.h

DRM DRIVER FOR WIDECIPS WS2401 PANELS

Mail

Linus Walleij <linus.walleij@linaro.org>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/panel/samsung,lms380kf01.
yaml drivers/gpu/drm/panel/panel-widechips-ws2401.c

DRM DRIVERS

Mail

David Airlie <airlied@gmail.com>, Daniel Vetter <daniel@ffwll.ch>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

bugs

<https://gitlab.freedesktop.org/drm>

chat

<irc://irc.oftc.net/dri-devel>

SCM

git [git://anongit.freedesktop.org/drm/drm](https://anongit.freedesktop.org/drm/drm)

Files

Documentation/devicetree/bindings/display/ Documentation/devicetree/
bindings/gpu/ Documentation/gpu/ drivers/gpu/ include/drm/ include/
linux/vga* include/uapi/drm/

DRM DRIVERS AND MISC GPU PATCHES**Mail**

Maarten Lankhorst <maarten.lankhorst@linux.intel.com>, Maxime Ripard
<mripard@kernel.org>, Thomas Zimmermann <tzimmermann@suse.de>

Status

Maintained

Web-page

<https://01.org/linuxgraphics/gfx-docs/maintainer-tools/drm-misc.html>

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/ Documentation/devicetree/
bindings/gpu/ Documentation/gpu/ drivers/gpu/drm/ drivers/gpu/vga/
include/drm/drm include/linux/vga* include/uapi/drm/

Excluded

drivers/gpu/drm/amd/ drivers/gpu/drm/armada/ drivers/gpu/drm/etnaviv/
drivers/gpu/drm/exynos/ drivers/gpu/drm/i915/ drivers/gpu/drm/kmb/
drivers/gpu/drm/mediatek/ drivers/gpu/drm/msm/ drivers/gpu/drm/
nouveau/ drivers/gpu/drm/radeon/ drivers/gpu/drm/renesas/ drivers/
gpu/drm/tegra/

DRM DRIVERS FOR ALLWINNER A10**Mail**

Maxime Ripard <mripard@kernel.org>, Chen-Yu Tsai <wens@csie.org>

Mailing list

dri-devel@lists.freedesktop.org

Status

Supported

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/allwinner* drivers/gpu/
drm/sun4i/

DRM DRIVERS FOR AMLOGIC SOCS

Mail

Neil Armstrong <neil.armstrong@linaro.org>

Mailing list

dri-devel@lists.freedesktop.org, linux-amlogic@lists.infradead.org

Status

Supported

Web-page

<http://linux-meson.com/>

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/amlogic,meson-dw-hdmi.
yaml Documentation/devicetree/bindings/display/amlogic,meson-vpu.
yaml gpu/meson drivers/gpu/drm/ci/xfails/meson* drivers/gpu/drm/
meson/

DRM DRIVERS FOR ATMEL HLCDC

Mail

Sam Ravnborg <sam@ravnborg.org>, Boris Brezillon <bbrezillon@kernel.org>

Mailing list

dri-devel@lists.freedesktop.org

Status

Supported

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/atmel/ drivers/gpu/drm/
atmel-hlcdc/

DRM DRIVERS FOR BRIDGE CHIPS

Mail

Andrzej Hajda <andrzej.hajda@intel.com>, Neil Armstrong
<neil.armstrong@linaro.org>, Robert Foss <rfoss@kernel.org>

Reviewer

Laurent Pinchart <Laurent.pinchart@ideasonboard.com>, Jonas Karlman
<jonas@kwiboo.se>, Jernej Skrabec <jernej.skrabec@gmail.com>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/bridge/ drivers/
gpu/drm/bridge/ drivers/gpu/drm/drm_bridge.c drivers/gpu/drm/
drm_bridge_connector.c include/drm/drm_bridge.h include/drm/
drm_bridge_connector.h

DRM DRIVERS FOR EXYNOS**Mail**

Inki Dae <inki.dae@samsung.com>, Seung-Woo Kim
<sw0312.kim@samsung.com>, Kyungmin Park <kyung-
min.park@samsung.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Supported

SCM

git git://git.kernel.org/pub/scm/linux/kernel/git/daeinki/drm-exynos.git

Files

Documentation/devicetree/bindings/display/exynos/ Documentation/
devicetree/bindings/display/samsung/ drivers/gpu/drm/exynos/ include/
uapi/drm/exynos_drm.h

DRM DRIVERS FOR FREESCALE DCU**Mail**

Stefan Agner <stefan@agner.ch>, Alison Wang <alison.wang@nxp.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Supported

SCM

git git://anongit.freedesktop.org/drm/drm-misc

Files

Documentation/devicetree/bindings/display/fsl,dcu.txt Documentation/
devicetree/bindings/display/fsl,tcon.txt drivers/gpu/drm/fsl-dcu/

DRM DRIVERS FOR FREESCALE IMX 5/6

Mail

Philipp Zabel <p.zabel@pengutronix.de>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc) git [git://git.pengutronix.de/git/pza/linux](https://git.pengutronix.de/git/pza/linux)

Files

Documentation/devicetree/bindings/display/imx/ drivers/gpu/drm/imx/
ipuv3/ drivers/gpu/ipu-v3/

DRM DRIVERS FOR FREESCALE IMX BRIDGE

Mail

Liu Ying <victor.liu@nxp.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

Files

Documentation/devicetree/bindings/display/bridge/fsl,imx8qxp-ldb.
yaml Documentation/devicetree/bindings/display/bridge/fsl,
imx8qxp-pixel-combiner.yaml Documentation/devicetree/bindings/
display/bridge/fsl,imx8qxp-pixel-link.yaml Documentation/devicetree/
bindings/display/bridge/fsl,imx8qxp-pxl2dpi.yaml drivers/gpu/drm/
bridge/imx/

DRM DRIVERS FOR GMA500 (Poulsbo, Moorestown and derivative chipsets)

Mail

Patrik Jakobsson <patrik.r.jakobsson@gmail.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

drivers/gpu/drm/gma500/

DRM DRIVERS FOR HISILICON

Mail

Xinliang Liu <xinliang.liu@linaro.org>, Tian Tao <tiantao6@hisilicon.com>

Reviewer

Xinwei Kong <kong.kongxinwei@hisilicon.com>, Sumit Semwal <sumit.semwal@linaro.org>, Yongqin Liu <yongqin.liu@linaro.org>, John Stultz <jstultz@google.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

`git git://anongit.freedesktop.org/drm/drm-misc`

Files

Documentation/devicetree/bindings/display/hisilicon/ drivers/gpu/
drm/hisilicon/

DRM DRIVERS FOR LIMA

Mail

Qiang Yu <yuq825@gmail.com>

Mailing list

dri-devel@lists.freedesktop.org, lima@lists.freedesktop.org (moderated for non-subscribers)

Status

Maintained

SCM

`git git://anongit.freedesktop.org/drm/drm-misc`

Files

`drivers/gpu/drm/lima/ include/uapi/drm/lima_drm.h`

DRM DRIVERS FOR LOONGSON

Mail

Sui Jingfeng <suijingfeng@loongson.cn>

Mailing list

dri-devel@lists.freedesktop.org

Status

Supported

SCM

`git git://anongit.freedesktop.org/drm/drm-misc`

Files

drivers/gpu/drm/loongson/

DRM DRIVERS FOR MEDIATEK

Mail

Chun-Kuang Hu <chunkuang.hu@kernel.org>, Philipp Zabel
<p.zabel@pengutronix.de>

Mailing list

dri-devel@lists.freedesktop.org, linux-mediatek@lists.infradead.org (moderated
for non-subscribers)

Status

Supported

Files

Documentation/devicetree/bindings/display/mediatek/ drivers/gpu/drm/
ci/xfails/mediatek* drivers/gpu/drm/mediatek/ drivers/phy/mediatek/
phy-mtk-dp.c drivers/phy/mediatek/phy-mtk-hdmi* drivers/phy/mediatek/
phy-mtk-mipi*

DRM DRIVERS FOR NVIDIA TEGRA

Mail

Thierry Reding <thierry.reding@gmail.com>, Mikko Perttunen <mpert-
tunen@nvidia.com>

Mailing list

dri-devel@lists.freedesktop.org, linux-tegra@vger.kernel.org

Status

Supported

SCM

git <https://gitlab.freedesktop.org/drm/tegra.git>

Files

Documentation/devicetree/bindings/display/tegra/nvidia,
tegra20-host1x.yaml Documentation/devicetree/bindings/gpu/host1x/
drivers/gpu/drm/tegra/ drivers/gpu/host1x/ include/linux/host1x.h
include/uapi/drm/tegra_drm.h

DRM DRIVERS FOR RENESAS R-CAR

Mail

Laurent Pinchart <laurent.pinchart@ideasonboard.com>, Kieran Bingham
<kieran.bingham+renesas@ideasonboard.com>

Mailing list

dri-devel@lists.freedesktop.org, linux-renesas-soc@vger.kernel.org

Status

Supported

SCM

git [git://linuxtv.org/pinchartl/media](https://linuxtv.org/pinchartl/media) drm/du/next

Files

Documentation/devicetree/bindings/display/bridge/renesas,
dsi-csi2-tx.yaml Documentation/devicetree/bindings/display/bridge/
renesas,dw-hdmi.yaml Documentation/devicetree/bindings/display/
bridge/renesas,lvds.yaml Documentation/devicetree/bindings/display/
renesas,du.yaml drivers/gpu/drm/renesas/rcar-du/

DRM DRIVERS FOR RENESAS SHMOBILE**Mail**

Laurent Pinchart <laurent.pinchart@ideasonboard.com>, Geert Uytterhoeven
<geert+renesas@glider.be>

Mailing list

dri-devel@lists.freedesktop.org, linux-renesas-soc@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/display/renesas,shmobile-lcdc.
yaml drivers/gpu/drm/renesas/shmobile/ include/linux/platform_data/
shmobi_drm.h

DRM DRIVERS FOR ROCKCHIP**Mail**

Sandy Huang <hjc@rock-chips.com>, Heiko Stübner <heiko@sntech.de>, Andy
Yan <andy.yan@rock-chips.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/rockchip/ drivers/gpu/drm/
ci/xfails/rockchip* drivers/gpu/drm/rockchip/

DRM DRIVERS FOR STI

Mail

Alain Volmat <alain.volmat@foss.st.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/st, stih4xx.txt drivers/
gpu/drm/sti

DRM DRIVERS FOR STM

Mail

Yannick Fertre <yannick.fertre@foss.st.com>, Raphael Gallais-
Pou <raphael.gallais-pou@foss.st.com>, Philippe Cornu
<philippe.cornu@foss.st.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/st, stm32-ltdc.yaml
drivers/gpu/drm/stm

DRM DRIVERS FOR TI KEYSTONE

Mail

Jyri Sarha <jyri.sarha@iki.fi>, Tomi Valkeinen <tomi.valkeinen@ideasonboard.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/ti/ti, am65x-dss.yaml
Documentation/devicetree/bindings/display/ti/ti, j721e-dss.yaml

Documentation/devicetree/bindings/display/ti/ti,k2g-dss.yaml
drivers/gpu/drm/tidss/

DRM DRIVERS FOR TI LCDC

Mail

Jyri Sarha <jyri.sarha@iki.fi>, Tomi Valkeinen <tomi.valkeinen@ideasonboard.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/tilcdc/ drivers/gpu/drm/
tilcdc/

DRM DRIVERS FOR TI OMAP

Mail

Tomi Valkeinen <tomi.valkeinen@ideasonboard.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/ti/ drivers/gpu/drm/
omapdrm/

DRM DRIVERS FOR V3D

Mail

Melissa Wen <mwen@igalia.com>, Maíra Canal <mcanal@igalia.com>

Status

Supported

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/gpu/brcm,bcm-v3d.yaml drivers/gpu/
drm/v3d/ include/uapi/drm/v3d_drm.h

DRM DRIVERS FOR VC4

Mail

Maxime Ripard <mripard@kernel.org>

Status

Supported

SCM

git [git://github.com/anholt/linux](https://github.com/anholt/linux) git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/brcm,bcm2835-*.yaml
drivers/gpu/drm/vc4/ include/uapi/drm/vc4_drm.h

DRM DRIVERS FOR VIVANTE GPU IP

Mail

Lucas Stach <l.stach@pengutronix.de>

Reviewer

Russell King <linux+etnaviv@armlinux.org.uk>, Christian Gmeiner <christian.gmeiner@gmail.com>

Mailing list

etnaviv@lists.freedesktop.org (moderated for non-subscribers), dri-devel@lists.freedesktop.org

Status

Maintained

Files

Documentation/devicetree/bindings/gpu/vivante,gc.yaml drivers/gpu/drm/etnaviv/ include/uapi/drm/etnaviv_drm.h

DRM DRIVERS FOR XEN

Mail

Oleksandr Andrushchenko <oleksandr_andrushchenko@epam.com>

Mailing list

dri-devel@lists.freedesktop.org, xen-devel@lists.xenproject.org (moderated for non-subscribers)

Status

Supported

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

gpu/xen-front drivers/gpu/drm/xen/

DRM DRIVERS FOR XILINX

Mail

Laurent Pinchart <laurent.pinchart@ideasonboard.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/xlnx/ drivers/gpu/drm/
xlnx/

DRM GPU SCHEDULER

Mail

Luben Tuikov <ltuikov89@gmail.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

drivers/gpu/drm/scheduler/ include/drm/gpu_scheduler.h

DRM PANEL DRIVERS

Mail

Neil Armstrong <neil.armstrong@linaro.org>

Reviewer

Jessica Zhang <quic_jesszhan@quicinc.com>, Sam Ravnborg
<sam@ravnborg.org>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/panel/ drivers/gpu/drm/
drm_panel.c drivers/gpu/drm/panel/ include/drm/drm_panel.h

DRM PRIVACY-SCREEN CLASS

Mail

Hans de Goede <hdegoede@redhat.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

drivers/gpu/drm/drm_privacy_screen* include/drm/drm_privacy_screen*

DRM TTM SUBSYSTEM

Mail

Christian Koenig <christian.koenig@amd.com>, Huang Rui
<ray.huang@amd.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

drivers/gpu/drm/ttm/ include/drm/ttm/

DRM AUTOMATED TESTING

Mail

Helen Koike <helen.koike@collabora.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

gpu/automated_testing drivers/gpu/drm/ci/

DSBR100 USB FM RADIO DRIVER

Mail

Alexey Klimov <klimov.linux@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

`drivers/media/radio/dsbr100.c`

DT3155 MEDIA DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Odd Fixes

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

`drivers/media/pci/dt3155/`

DVB_USB_AF9015 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

`drivers/media/usb/dvb-usb-v2/af9015*`

DVB_USB_AF9035 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/usb/dvb-usb-v2/af9035*

DVB_USB_ANYSEE MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/usb/dvb-usb-v2/anysee*

DVB_USB_AU6610 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/usb/dvb-usb-v2/au6610*

DVB_USB_CE6230 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/usb/dvb-usb-v2/ce6230*

DVB_USB_CXUSB MEDIA DRIVER

Mail

Michael Krufky <mkrufky@linuxtv.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org> <http://github.com/mkrufky>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

SCM

git git://linuxtv.org/media_tree.git

Files

drivers/media/usb/dvb-usb/cxusb*

DVB_USB_EC168 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/usb/dvb-usb-v2/ec168*

DVB_USB_GL861 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/usb/dvb-usb-v2/gl861*

DVB_USB_MXL111SF MEDIA DRIVER

Mail

Michael Krufky <mkrufky@linuxtv.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org> <http://github.com/mkrufky>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

SCM

git <git://linuxtv.org/mkrufky/mxl111sf.git>

Files

drivers/media/usb/dvb-usb-v2/mxl111sf*

DVB_USB_RTL28XXU MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/usb/dvb-usb-v2/rtl28xxu*

DVB_USB_V2 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org> <http://palosaari.fi/linux/>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/usb/dvb-usb-v2/dvb_usb* drivers/media/usb/dvb-usb-v2/
usb_urb.c

DYNAMIC DEBUG

Mail

Jason Baron <jbaron@akamai.com>, Jim Cromie <jim.cromie@gmail.com>

Status

Maintained

Files

include/linux/dynamic_debug.h lib/dynamic_debug.c lib/
test_dynamic_debug.c

DYNAMIC INTERRUPT MODERATION

Mail

Tal Gilboa <talgi@nvidia.com>

Status

Maintained

Files

networking/net_dim include/linux/dim.h lib/dim/

DYNAMIC THERMAL POWER MANAGEMENT (DTPM)

Mail

Daniel Lezcano <daniel.lezcano@kernel.org>

Mailing list

linux-pm@vger.kernel.org

Status

Supported

bugs

<https://bugzilla.kernel.org>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/rafael/linux-pm](https://git.kernel.org/pub/scm/linux/kernel/git/rafael/linux-pm)

Files

drivers/powercap/dtpm* include/linux/dtpm.h

DZ DECSTATION DZ11 SERIAL DRIVER

Mail

"Maciej W. Rozycki" <macro@orcam.me.uk>

Status

Maintained

Files

drivers/tty/serial/dz.*

E3X0 POWER BUTTON DRIVER

Mail

Moritz Fischer <moritz.fischer@ettus.com>

Mailing list

usrp-users@lists.ettus.com

Status

Supported

Web-page

<http://www.ettus.com>

Files

Documentation/devicetree/bindings/input/e3x0-button.txt drivers/
input/misc/e3x0-button.c

E4000 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/tuners/e4000*

EARTH_PT1 MEDIA DRIVER

Mail

Akihiro Tsukada <tskd08@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Odd Fixes

Files

drivers/media/pci/pt1/

EARTH_PT3 MEDIA DRIVER

Mail

Akihiro Tsukada <tskd08@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Odd Fixes

Files

drivers/media/pci/pt3/

EC100 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/dvb-frontends/ec100*

ECRYPT FILE SYSTEM

Mail

Tyler Hicks <code@tyhicks.com>

Mailing list

ecryptfs@vger.kernel.org

Status

Odd Fixes

Web-page

<http://ecryptfs.org> <https://launchpad.net/ecryptfs>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tyhicks/ecryptfs.git](https://git.kernel.org/pub/scm/linux/kernel/git/tyhicks/ecryptfs.git)

Files

filesystems/ecryptfs fs/ecryptfs/

EDAC-AMD64

Mail

Yazen Ghannam <yazen.ghannam@amd.com>

Mailing list

linux-edac@vger.kernel.org

Status

Supported

Files

drivers/edac/amd64_edac* drivers/edac/mce_amd*

EDAC-ARMADA

Mail

Jan Luebbe <jlu@pengutronix.de>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/memory-controllers/marvell,
mvebu-sdram-controller.yaml drivers/edac/armada_xp_*

EDAC-AST2500

Mail

Stefan Schaeckeler <sschaeck@cisco.com>

Status

Supported

Files

Documentation/devicetree/bindings/edac/aspeed-sdram-edac.txt
drivers/edac/aspeed_edac.c

EDAC-BLUEFIELD

Mail

Shravan Kumar Ramani <shravankr@nvidia.com>

Status

Supported

Files

drivers/edac/bluefield_edac.c

EDAC-CALXEDA

Mail

Andre Przywara <andre.przywara@arm.com>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

drivers/edac/highbank*

EDAC-CAVIUM OCTEON

Mail

Ralf Baechle <ralf@linux-mips.org>

Mailing list

linux-edac@vger.kernel.org, linux-mips@vger.kernel.org

Status

Supported

Files

drivers/edac/octeon_edac*

EDAC-CAVIUM THUNDERX

Mail

Robert Richter <rric@kernel.org>

Mailing list

linux-edac@vger.kernel.org

Status

Odd Fixes

Files

drivers/edac/thunderx_edac*

EDAC-CORE

Mail

Borislav Petkov <bp@alien8.de>, Tony Luck <tony.luck@intel.com>

Reviewer

James Morse <james.morse@arm.com>, Mauro Carvalho Chehab <mchehab@kernel.org>, Robert Richter <rric@kernel.org>

Mailing list

linux-edac@vger.kernel.org

Status

Supported

SCM

`git git://git.kernel.org/pub/scm/linux/kernel/git/ras/ras.git edac-for-next`

Files

`admin-guide/ras driver-api/edac drivers/edac/ include/linux/edac.h`

EDAC-DMC520

Mail

Lei Wang <lewan@microsoft.com>

Mailing list

linux-edac@vger.kernel.org

Status

Supported

Files

`drivers/edac/dmc520_edac.c`

EDAC-E752X

Mail

Mark Gross <markgross@kernel.org>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

`drivers/edac/e752x_edac.c`

EDAC-E7XXX

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

drivers/edac/e7xxx_edac.c

EDAC-FSL_DDR

Mail

York Sun <york.sun@nxp.com>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

drivers/edac/fsl_ddr_edac.*

EDAC-GHES

Mail

Mauro Carvalho Chehab <mchehab@kernel.org>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

drivers/edac/ghes_edac.c

EDAC-I10NM

Mail

Tony Luck <tony.luck@intel.com>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

drivers/edac/i10nm_base.c

EDAC-I3000

Mailing list

linux-edac@vger.kernel.org

Status

Orphan

Files

drivers/edac/i3000_edac.c

EDAC-I5000

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

drivers/edac/i5000_edac.c

EDAC-I5400

Mail

Mauro Carvalho Chehab <mchehab@kernel.org>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

drivers/edac/i5400_edac.c

EDAC-I7300

Mail

Mauro Carvalho Chehab <mchehab@kernel.org>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

drivers/edac/i7300_edac.c

EDAC-I7CORE

Mail

Mauro Carvalho Chehab <mchehab@kernel.org>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

drivers/edac/i7core_edac.c

EDAC-I82443BXGX

Mail

Tim Small <tim@buttersideup.com>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

drivers/edac/i82443bxgx_edac.c

EDAC-I82975X

Mail

"Arvind R." <arvino55@gmail.com>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

drivers/edac/i82975x_edac.c

EDAC-IE31200

Mail

Jason Baron <jbaron@akamai.com>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

drivers/edac/ie31200_edac.c

EDAC-IGEN6

Mail

Tony Luck <tony.luck@intel.com>

Reviewer

Qiuxu Zhuo <qiuxu.zhuo@intel.com>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

drivers/edac/igen6_edac.c

EDAC-MPC85XX

Mail

Johannes Thumshirn <morbidrsa@gmail.com>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

drivers/edac/mpc85xx_edac.[ch]

EDAC-NPCM

Mail

Marvin Lin <kflin@nuvoton.com>, Stanley Chu <yschu@nuvoton.com>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/memory-controllers/nuvoton,
npcm-memory-controller.yaml drivers/edac/npcm_edac.c

EDAC-PASEMI

Mail

Egor Martovetsky <egor@pasemi.com>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

`drivers/edac/pasemi_edac.c`

EDAC-PND2

Mail

Tony Luck <tony.luck@intel.com>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

`drivers/edac/pnd2_edac.[ch]`

EDAC-QCOM

Mail

Manivannan Sadhasivam <manivannan.sadhasivam@linaro.org>

Mailing list

linux-arm-msm@vger.kernel.org, linux-edac@vger.kernel.org

Status

Maintained

Files

`drivers/edac/qcom_edac.c`

EDAC-R82600

Mail

Tim Small <tim@buttersideup.com>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

`drivers/edac/r82600_edac.c`

EDAC-SBRIDGE

Mail

Tony Luck <tony.luck@intel.com>

Reviewer

Qiuxu Zhuo <qiuxu.zhuo@intel.com>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

drivers/edac/sb_edac.c

EDAC-SKYLAKE

Mail

Tony Luck <tony.luck@intel.com>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

drivers/edac/skx_*.ch

EDAC-TI

Mail

Tero Kristo <kristo@kernel.org>

Mailing list

linux-edac@vger.kernel.org

Status

Odd Fixes

Files

drivers/edac/ti_edac.c

EDIROL UA-101/UA-1000 DRIVER

Mail

Clemens Ladisch <clemens@ladisch.de>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tiwai/sound.git](https://git.kernel.org/pub/scm/linux/kernel/git/tiwai/sound.git)

Files

sound/usb/misc/ua101.c

EFI TEST DRIVER

Mail

Ivan Hu <ivan.hu@canonical.com>, Ard Biesheuvel <ardb@kernel.org>

Mailing list

linux-efi@vger.kernel.org

Status

Maintained

Files

drivers/firmware/efi/test/

EFI VARIABLE FILESYSTEM

Mail

Jeremy Kerr <jk@ozlabs.org>, Ard Biesheuvel <ardb@kernel.org>

Mailing list

linux-efi@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/efi/efi.git](https://git.kernel.org/pub/scm/linux/kernel/git/efi/efi.git)

Files

fs/efivarfs/

EFIFB FRAMEBUFFER DRIVER

Mail

Peter Jones <pjones@redhat.com>

Mailing list

linux-fbdev@vger.kernel.org

Status

Maintained

Files

drivers/video/fbdev/efifb.c

EFS FILESYSTEM

Status

Orphan

Web-page

<http://aeschi.ch.eu.org/efs/>

Files

fs/efs/

EHEA (IBM pSeries eHEA 10Gb ethernet adapter) DRIVER

Mail

Douglas Miller <dougmill@linux.ibm.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/ibm/ehea/

ELM327 CAN NETWORK DRIVER

Mail

Max Staudt <max@enpas.org>

Mailing list

linux-can@vger.kernel.org

Status

Maintained

Files

networking/device_drivers/can/can327 drivers/net/can/can327.c

EM28XX VIDEO4LINUX DRIVER

Mail

Mauro Carvalho Chehab <mchehab@kernel.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/admin-guide/media/em28xx* drivers/media/usb/em28xx/

EMMC CMDQ HOST CONTROLLER INTERFACE (CQHCI) DRIVER

Mail

Adrian Hunter <adrian.hunter@intel.com>, Ritesh Harjani
<riteshh@codeaurora.org>, Asutosh Das <asutoshd@codeaurora.org>

Mailing list

linux-mmc@vger.kernel.org

Status

Supported

Files

drivers/mmc/host/cqhci*

EMS CPC-PCI CAN DRIVER

Mail

Gerhard Uttenthaler <uttenthaler@ems-wuensche.com>, support@ems-wuensche.com

Mailing list

linux-can@vger.kernel.org

Status

Maintained

Files

drivers/net/can/sja1000/ems_pci.c

EMULEX 10Gbps iSCSI - OneConnect DRIVER

Mail

Ketan Mukadam <ketan.mukadam@broadcom.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Web-page

<http://www.broadcom.com>

Files

drivers/scsi/be2iscsi/

EMULEX 10Gbps NIC BE2, BE3-R, Lancer, Skyhawk-R DRIVER (be2net)

Mail

Ajit Khaparde <ajit.khaparde@broadcom.com>, Sriharsha Basavapatna <sriharsha.basavapatna@broadcom.com>, Somnath Kotur <somnath.kotur@broadcom.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Web-page

<http://www.emulex.com>

Files

drivers/net/ethernet/emulex/benet/

EMULEX ONECONNECT ROCE DRIVER

Mail

Selvin Xavier <selvin.xavier@broadcom.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Odd Fixes

Web-page

<http://www.broadcom.com>

Files

drivers/infiniband/hw/ocrdma/ include/uapi/rdma/ocrdma-abi.h

EMULEX/BROADCOM EFCT FC/FCOE SCSI TARGET DRIVER**Mail**

James Smart <james.smart@broadcom.com>, Ram Vegesna
<ram.vegesna@broadcom.com>

Mailing list

linux-scsi@vger.kernel.org, target-devel@vger.kernel.org

Status

Supported

Web-page

<http://www.broadcom.com>

Files

drivers/scsi/elx/

EMULEX/BROADCOM LPFC FC/FCOE SCSI DRIVER**Mail**

James Smart <james.smart@broadcom.com>, Dick Kennedy
<dick.kennedy@broadcom.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Web-page

<http://www.broadcom.com>

Files

drivers/scsi/lpfc/

ENE CB710 FLASH CARD READER DRIVER**Mail**

Michał Mirosław <mirq-linux@rere.qmqm.pl>

Status

Maintained

Files

drivers/misc/cb710/ drivers/mmc/host/cb710-mmc.* include/linux/cb710.
h

ENE KB2426 (ENE0100/ENE020XX) INFRARED RECEIVER

Mail

Maxim Levitsky <maximlevitsky@gmail.com>

Status

Maintained

Files

drivers/media/rc/ene_ir.*

EPAPR HYPERVISOR BYTE CHANNEL DEVICE DRIVER

Mail

Laurentiu Tudor <laurentiu.tudor@nxp.com>

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Maintained

Files

drivers/tty/ehv_bytechan.c

EPSON S1D13XXX FRAMEBUFFER DRIVER

Mail

Kristoffer Ericson <kristoffer.ericson@gmail.com>

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/kristoffer/linux-hpc.git](https://git.kernel.org/pub/scm/linux/kernel/git/kristoffer/linux-hpc.git)

Files

drivers/video/fbdev/s1d13xxxfb.c include/video/s1d13xxxfb.h

EROFS FILE SYSTEM

Mail

Gao Xiang <xiang@kernel.org>, Chao Yu <chao@kernel.org>

Reviewer

Yue Hu <huyue2@coolpad.com>, Jeffle Xu <jefflexu@linux.alibaba.com>

Mailing list

linux-erofs@lists.ozlabs.org

Status

Maintained

Web-page

<https://erofs.docs.kernel.org>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/xiang/erofs.git](https://git.kernel.org/pub/scm/linux/kernel/git/xiang/erofs.git)

Files

Documentation/ABI/testing/sysfs-fs-erofs filesystems/erofs fs/erofs/
include/trace/events/erofs.h

ERRSEQ ERROR TRACKING INFRASTRUCTURE

Mail

Jeff Layton <jlayton@kernel.org>

Status

Maintained

Files

include/linux/errseq.h lib/errseq.c

ESD CAN/USB DRIVERS

Mail

Frank Jungclaus <frank.jungclaus@esd.eu>

Reviewer

socketcan@esd.eu

Mailing list

linux-can@vger.kernel.org

Status

Maintained

Files

drivers/net/can/usb/esd_usb.c

ET131X NETWORK DRIVER

Mail

Mark Einon <mark.einon@gmail.com>

Status

Odd Fixes

Files

drivers/net/ethernet/agere/

ETAS ES58X CAN/USB DRIVER

Mail

Vincent Mailhol <mailhol.vincent@wanadoo.fr>

Mailing list

linux-can@vger.kernel.org

Status

Maintained

Files

networking/devlink/etas_es58x drivers/net/can/usb/etas_es58x/

ETHERNET BRIDGE

Mail

Roopa Prabhu <roopa@nvidia.com>, Nikolay Aleksandrov <razor@blackwall.org>

Mailing list

bridge@lists.linux.dev, netdev@vger.kernel.org

Status

Maintained

Web-page

<http://www.linuxfoundation.org/en/Net:Bridge>

Files

include/linux/netfilter_bridge/ net/bridge/

ETHERNET PHY LIBRARY

Mail

Andrew Lunn <andrew@lunn.ch>, Heiner Kallweit <hkallweit1@gmail.com>

Reviewer

Russell King <linux@armlinux.org.uk>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-class-net-phydev Documentation/
devicetree/bindings/net/ethernet-phy.yaml Documentation/devicetree/
bindings/net/mdio* Documentation/devicetree/bindings/net/qca-ar803x.
yaml networking/phy drivers/net/mdio/ drivers/net/mdio/acpi_mdio.c
drivers/net/mdio/fwnode_mdio.c drivers/net/mdio/of_mdio.c drivers/
net/pcs/ drivers/net/phy/ include/dt-bindings/net/qca-ar803x.h
include/linux/*mdio*.h include/linux/linkmode.h include/linux/mdio/
*.h include/linux/mii.h include/linux/of_net.h include/linux/phy.h

```
include/linux/phy_fixed.h    include/linux/phylib_stubs.h    include/
linux/platform_data/mdio-bcm-unimac.h    include/linux/platform_data/
mdio-gpio.h    include/trace/events/mdio.h    include/uapi/linux/mdio.h
include/uapi/linux/mii.h net/core/of_net.c
```

ETHERNET PHY LIBRARY [RUST]

Mail

FUJITA Tomonori <fujita.tomonori@gmail.com>

Reviewer

Trevor Gross <tmgross@umich.edu>

Mailing list

netdev@vger.kernel.org, rust-for-linux@vger.kernel.org

Status

Maintained

Files

rust/kernel/net/phy.rs

EXEC & BINFORMAT API, ELF

Reviewer

Eric Biederman <ebiederm@xmission.com>, Kees Cook
<keescook@chromium.org>

Mailing list

linux-mm@kvack.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/kees/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/kees/linux.git) for-next/execve

Files

```
userspace-api/ELF fs/*binfmt_*.c fs/exec.c include/linux/binfmts.h
include/linux/elf.h include/uapi/linux/binfmts.h include/uapi/linux/
elf.h tools/testing/selftests/exec/
```

Regex

asm/elf.h binfmt

EXFAT FILE SYSTEM

Mail

Namjae Jeon <linkinjeon@kernel.org>, Sungjong Seo
<sj1557.seo@samsung.com>

Mailing list

linux-fsdevel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/linkinjeon/exfat.git](https://git.kernel.org/pub/scm/linux/kernel/git/linkinjeon/exfat.git)

Files

fs/exfat/

EXT2 FILE SYSTEM

Mail

Jan Kara <jack@suse.com>

Mailing list

linux-ext4@vger.kernel.org

Status

Maintained

Files

filesystems/ext2 fs/ext2/ include/linux/ext2*

EXT4 FILE SYSTEM

Mail

"Theodore Ts'o" <tytso@mit.edu>, Andreas Dilger <adilger.kernel@dilger.ca>

Mailing list

linux-ext4@vger.kernel.org

Status

Maintained

Web-page

<http://ext4.wiki.kernel.org>

Patchwork

<http://patchwork.ozlabs.org/project/linux-ext4/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tytso/ext4.git](https://git.kernel.org/pub/scm/linux/kernel/git/tytso/ext4.git)

Files

Documentation/filesystems/ext4/ fs/ext4/ include/trace/events/ext4.h
include/uapi/linux/ext4.h

Extended Verification Module (EVM)

Mail

Mimi Zohar <zohar@linux.ibm.com>, Roberto Sassu
<roberto.sassu@huawei.com>

Mailing list

linux-integrity@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/zohar/linux-integrity.git](https://git.kernel.org/pub/scm/linux/kernel/git/zohar/linux-integrity.git)

Files

security/integrity/ security/integrity/evm/

EXTENSIBLE FIRMWARE INTERFACE (EFI)

Mail

Ard Biesheuvel <ardb@kernel.org>

Mailing list

linux-efi@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/efi/efi.git](https://git.kernel.org/pub/scm/linux/kernel/git/efi/efi.git)

Files

admin-guide/efi-stub arch/*/include/asm/efi.h arch/*/kernel/efi.c arch/
arm/boot/compressed/efi-header.S arch/x86/platform/efi/ drivers/
firmware/efi/ include/linux/efi*.h

EXTERNAL CONNECTOR SUBSYSTEM (EXTCON)

Mail

MyungJoo Ham <myungjoo.ham@samsung.com>, Chanwoo Choi
<cw00.choi@samsung.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/chanwoo/extcon.git](https://git.kernel.org/pub/scm/linux/kernel/git/chanwoo/extcon.git)

Files

Documentation/devicetree/bindings/extcon/ firmware-guide/acpi/extcon-
intel-int3496 drivers/extcon/ include/linux/extcon.h include/linux/
extcon/

EXTRA BOOT CONFIG

Mail

Masami Hiramatsu <mhiramat@kernel.org>

Mailing list

linux-kernel@vger.kernel.org, linux-trace-kernel@vger.kernel.org

Status

Maintained

Patchwork

<https://patchwork.kernel.org/project/linux-trace-kernel/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/trace/linux-trace.git](https://git.kernel.org/pub/scm/linux/kernel/git/trace/linux-trace.git)

Files

admin-guide/bootconfig fs/proc/bootconfig.c include/linux/bootconfig.
h lib/bootconfig-data.S lib/bootconfig.c tools/bootconfig/* tools/
bootconfig/scripts/*

EXYNOS DP DRIVER

Mail

Jingoo Han <jingooohan1@gmail.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

Files

drivers/gpu/drm/exynos/exynos_dp*

EXYNOS SYSMMU (IOMMU) driver

Mail

Marek Szymkowski <m.szymkowski@samsung.com>

Mailing list

iommu@lists.linux.dev

Status

Maintained

Files

drivers/iommu/exynos-iommu.c

F2FS FILE SYSTEM

Mail

Jaegeuk Kim <jaegeuk@kernel.org>, Chao Yu <chao@kernel.org>

Mailing list

linux-f2fs-devel@lists.sourceforge.net

Status

Maintained

Web-page

<https://f2fs.wiki.kernel.org/>

Patchwork

<https://patchwork.kernel.org/project/f2fs/list/>

bugs

https://bugzilla.kernel.org/enter_bug.cgi?product=File%20System&component=f2fs

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/jaegeuk/f2fs.git](https://git.kernel.org/pub/scm/linux/kernel/git/jaegeuk/f2fs.git)

Files

Documentation/ABI/testing/sysfs-fs-f2fs filesystems/f2fs fs/f2fs/
include/linux/f2fs_fs.h include/trace/events/f2fs.h include/uapi/
linux/f2fs.h

F71805F HARDWARE MONITORING DRIVER

Mail

Jean Delvare <jdelvare@suse.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/f71805f drivers/hwmon/f71805f.c

FADDR2LINE

Mail

Josh Poimboeuf <jpoimboe@kernel.org>

Status

Maintained

Files

scripts/faddr2line

FAILOVER MODULE

Mail

Sridhar Samudrala <sridhar.samudrala@intel.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

networking/failover include/net/failover.h net/core/failover.c

FANOTIFY

Mail

Jan Kara <jack@suse.cz>

Reviewer

Amir Goldstein <amir73il@gmail.com>, Matthew Bobrowski
<repnop@google.com>

Mailing list

linux-fsdevel@vger.kernel.org

Status

Maintained

Files

fs/notify/fanotify/ include/linux/fanotify.h include/uapi/linux/
fanotify.h

FARADAY FOTG210 USB2 DUAL-ROLE CONTROLLER

Mail

Linus Walleij <linus.walleij@linaro.org>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

drivers/usb/fotg210/

FARSYNC SYNCHRONOUS DRIVER

Mail

Kevin Curtis <kevin.curtis@farsite.co.uk>

Status

Supported

Web-page

<http://www.farsite.co.uk/>

Files

drivers/net/wan/farsync.*

FAULT INJECTION SUPPORT

Mail

Akinobu Mita <akinobu.mita@gmail.com>

Status

Supported

Files

Documentation/fault-injection/ lib/fault-inject.c

FBTFT Framebuffer drivers

Mailing list

dri-devel@lists.freedesktop.org, linux-fbdev@vger.kernel.org

Status

Orphan

Files

drivers/staging/fbtft/

FC0011 TUNER DRIVER

Mail

Michael Buesch <m@bues.ch>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/tuners/fc0011.c drivers/media/tuners/fc0011.h

FC2580 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/tuners/fc2580*

FCOE SUBSYSTEM (libfc, libfcoe, fcoe)

Mail

Hannes Reinecke <hare@suse.de>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Web-page

www.Open-FCoE.org

Files

drivers/scsi/fcoe/ drivers/scsi/libfc/ include/scsi/fc/ include/scsi/
libfc.h include/scsi/libfcoe.h include/uapi/scsi/fc/

FILE LOCKING (flock() and fcntl()/lockf())

Mail

Jeff Layton <jlayton@kernel.org>, Chuck Lever <chuck.lever@oracle.com>

Mailing list

linux-fsdevel@vger.kernel.org

Status

Maintained

Files

fs/fcntl.c fs/locks.c include/linux/fcntl.h include/uapi/linux/fcntl.
h

FILESYSTEM DIRECT ACCESS (DAX)

Mail

Dan Williams <dan.j.williams@intel.com>

Reviewer

Matthew Wilcox <willy@infradead.org>, Jan Kara <jack@suse.cz>

Mailing list

linux-fsdevel@vger.kernel.org, nvdimmm@lists.linux.dev

Status

Supported

Files

fs/dax.c include/linux/dax.h include/trace/events/fs_dax.h

FILESYSTEMS (VFS and infrastructure)

Mail

Alexander Viro <viro@zeniv.linux.org.uk>, Christian Brauner
<brauner@kernel.org>

Reviewer

Jan Kara <jack@suse.cz>

Mailing list

linux-fsdevel@vger.kernel.org

Status

Maintained

Files

fs/* include/linux/fs.h include/linux/fs_types.h include/uapi/linux/
fs.h include/uapi/linux/openat2.h

FILESYSTEMS [EXPORTFS]

Mail

Chuck Lever <chuck.lever@oracle.com>, Jeff Layton <jlayton@kernel.org>

Reviewer

Amir Goldstein <amir73il@gmail.com>

Mailing list

linux-fsdevel@vger.kernel.org, linux-nfs@vger.kernel.org

Status

Supported

Files

filesystems/nfs/exporting fs/exportfs/ fs/fhandle.c include/linux/
exportfs.h

FILESYSTEMS [IDMAPPED MOUNTS]

Mail

Christian Brauner <brauner@kernel.org>, Seth Forshee <[sfor-
shee@kernel.org](mailto:sforshee@kernel.org)>

Mailing list

linux-fsdevel@vger.kernel.org

Status

Maintained

Files

filesystems/idmappings fs/mnt_idmapping.c include/linux/mnt_idmapping.*
tools/testing/selftests/mount_setattr/

FILESYSTEMS [IOMAP]

Mail

Christian Brauner <brauner@kernel.org>

Reviewer

Darrick J. Wong <djwong@kernel.org>

Mailing list

linux-xfs@vger.kernel.org, linux-fsdevel@vger.kernel.org

Status

Supported

Files

fs/iomap/ include/linux/iomap.h

FILESYSTEMS [NETFS LIBRARY]

Mail

David Howells <dhowells@redhat.com>

Reviewer

Jeff Layton <jlayton@kernel.org>

Mailing list

netfs@lists.linux.dev, linux-fsdevel@vger.kernel.org

Status

Supported

Files

Documentation/filesystems/caching/ filesystems/netfs_library fs/netfs/
include/linux/fscache*.h include/linux/netfs.h include/trace/events/
fscache.h include/trace/events/netfs.h

FILESYSTEMS [STACKABLE]

Mail

Miklos Szeredi <miklos@szereadi.hu>, Amir Goldstein <amir73il@gmail.com>

Mailing list

linux-fsdevel@vger.kernel.org, linux-unionfs@vger.kernel.org

Status

Maintained

Files

fs/backing-file.c include/linux/backing-file.h

FINTEK F75375S HARDWARE MONITOR AND FAN CONTROLLER DRIVER

Mail

Riku Voipio <riku.voipio@iki.fi>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

drivers/hwmon/f75375s.c include/linux/f75375s.h

FINTEK F81604 USB to 2xCANBUS DEVICE DRIVER

Mail

Ji-Ze Hong (Peter Hong) <peter_hong@fintek.com.tw>

Mailing list

linux-can@vger.kernel.org

Status

Maintained

Files

drivers/net/can/usb/f81604.c

FIREWIRE AUDIO DRIVERS and IEC 61883-1/6 PACKET STREAMING ENGINE

Mail

Clemens Ladisch <clemens@ladisch.de>, Takashi Sakamoto <otakashi@sakamocchi.jp>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tiwai/sound.git](https://git.kernel.org/pub/scm/linux/kernel/git/tiwai/sound.git)

Files

`include/uapi/sound/firewire.h` `sound/firewire/`

FIREWIRE MEDIA DRIVERS (firedtv)

Mail

Stefan Richter <stefanr@s5r6.in-berlin.de>

Mailing list

linux-media@vger.kernel.org, linux1394-devel@lists.sourceforge.net

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/mchehab/linux-media.git](https://git.kernel.org/pub/scm/linux/kernel/git/mchehab/linux-media.git)

Files

`drivers/media/firewire/`

FIREWIRE SBP-2 TARGET

Mail

Chris Boot <bootc@bootc.net>

Mailing list

linux-scsi@vger.kernel.org, target-devel@vger.kernel.org, linux1394-devel@lists.sourceforge.net

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/nab/lio-core-2.6.git](https://git.kernel.org/pub/scm/linux/kernel/git/nab/lio-core-2.6.git) master

Files

`drivers/target/sbp/`

FIREWIRE SUBSYSTEM

Mail

Takashi Sakamoto <o-takashi@sakamocchi.jp>, Takashi Sakamoto
<takaswie@kernel.org>

Mailing list

linux1394-devel@lists.sourceforge.net

Status

Maintained

Web-page

<http://ieee1394.docs.kernel.org/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/ieee1394/linux1394.git](https://git.kernel.org/pub/scm/linux/kernel/git/ieee1394/linux1394.git)

Files

drivers/firewire/ include/linux/firewire.h include/uapi/linux/
firewire*.h tools/firewire/

FIRMWARE FRAMEWORK FOR ARMV8-A**Mail**

Sudeep Holla <sudeep.holla@arm.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

drivers/firmware/arm_ffa/ include/linux/arm_ffa.h

FIRMWARE LOADER (request_firmware)**Mail**

Luis Chamberlain <mcgrof@kernel.org>, Russ Weight
<russ.weight@linux.dev>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

Documentation/firmware_class/ drivers/base/firmware_loader/ include/
linux/firmware.h

FLEXTIMER FTM-QUADDEC DRIVER**Mail**

Patrick Havelange <patrick.havelange@essensium.com>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/counter/ftm-quaddec.txt drivers/
counter/ftm-quaddec.c

FLOPPY DRIVER

Mail

Denis Efremov <efremov@linux.com>

Mailing list

linux-block@vger.kernel.org

Status

Odd Fixes

Files

drivers/block/floppy.c

FLYSKY FSIA6B RC RECEIVER

Mail

Markus Koch <markus@notsyncing.net>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/input/joystick/fsia6b.c

FOCUSRITE SCARLETT2 MIXER DRIVER (Scarlett Gen 2+ and Clarett)

Mail

Geoffrey D. Bennett <g@b4.vu>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Web-page

<https://github.com/geoffreybennett/scarlett-gen2>

bugs

<https://github.com/geoffreybennett/scarlett-gen2/issues>

SCM

git <https://github.com/geoffreybennett/scarlett-gen2.git>

Files

include/uapi/sound/scarlett2.h sound/usb/mixer_scarlett2.c

FORCEDETH GIGABIT ETHERNET DRIVER

Mail

Rain River <rain.1986.08.12@gmail.com>, Zhu Yanjun
<zyjzyj2000@gmail.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/nvidia/*

FORTIFY_SOURCE

Mail

Kees Cook <keescook@chromium.org>

Mailing list

linux-hardening@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/kees/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/kees/linux.git) for-next/hardening

Files

include/linux/fortify-string.h lib/fortify_kunit.c lib/memcpy_kunit.c
lib/strcat_kunit.c lib/strncpy_kunit.c lib/test_fortify/* scripts/
test_fortify.sh

Content regex

\b__NO_FORTIFY\b

FPGA DFL DRIVERS

Mail

Wu Hao <hao.wu@intel.com>

Reviewer

Tom Rix <trix@redhat.com>

Mailing list

linux-fpga@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-bus-dfl* fpga/dfi drivers/fpga/
dfl* drivers/uio/uio_dfl.c include/linux/dfl.h include/uapi/linux/
fpga-dfl.h

FPGA MANAGER FRAMEWORK

Mail

Moritz Fischer <mdf@kernel.org>, Wu Hao <hao.wu@intel.com>, Xu Yilun <yilun.xu@intel.com>

Reviewer

Tom Rix <trix@redhat.com>

Mailing list

linux-fpga@vger.kernel.org

Status

Maintained

Patchwork

<http://patchwork.kernel.org/project/linux-fpga/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/fpga/linux-fpga.git](https://git.kernel.org/pub/scm/linux/kernel/git/fpga/linux-fpga.git)

Files

Documentation/devicetree/bindings/fpga/ Documentation/driver-api/
fpga/ Documentation/fpga/ drivers/fpga/ include/linux/fpga/

FPU EMULATOR

Mail

Bill Metzenthen <billm@melbpc.org.au>

Status

Maintained

Web-page

<https://floatingpoint.billm.au/>

Files

arch/x86/math-emu/

FRAMEBUFFER CORE

Mail

Daniel Vetter <daniel@ffwll.ch>

Status

Odd Fixes

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

drivers/video/fbdev/core/

FRAMEBUFFER LAYER**Mail**

Helge Deller <deller@gmx.de>

Mailing list

linux-fbdev@vger.kernel.org, dri-devel@lists.freedesktop.org

Status

Maintained

Patchwork

<http://patchwork.kernel.org/project/linux-fbdev/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/deller/linux-fbdev.git](https://git.kernel.org/pub/scm/linux/kernel/git/deller/linux-fbdev.git)

Files

Documentation/fb/ drivers/video/ include/linux/fb.h include/uapi/
linux/fb.h include/uapi/video/ include/video/

FREESCALE CAAM (Cryptographic Acceleration and Assurance Module) DRIVER**Mail**

Horia Geantă <horia.geanta@nxp.com>, Pankaj Gupta
<pankaj.gupta@nxp.com>, Gaurav Jain <gaurav.jain@nxp.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/crypto/fsl,sec-v4.0* drivers/
crypto/caam/

FREESCALE COLDFIRE M5441X MMC DRIVER**Mail**

Angelo Dureghello <angelo.dureghello@timesys.com>

Mailing list

linux-mmc@vger.kernel.org

Status

Maintained

Files

drivers/mmc/host/sdhci-esdhc-mcf.c include/linux/platform_data/
mmc-esdhc-mcf.h

FREESCALE DIU FRAMEBUFFER DRIVER

Mail

Timur Tabi <timur@kernel.org>

Mailing list

linux-fbdev@vger.kernel.org

Status

Maintained

Files

drivers/video/fbdev/fsl-diu-fb.*

FREESCALE DMA DRIVER

Mail

Li Yang <leoyang.li@nxp.com>, Zhang Wei <zw@zh-kernel.org>

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Maintained

Files

drivers/dma/fsldma.*

FREESCALE DSPI DRIVER

Mail

Vladimir Oltean <olteanv@gmail.com>

Mailing list

linux-spi@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/spi/spi-fsl-dspi.txt drivers/spi/
spi-fsl-dspi.c include/linux/spi/spi-fsl-dspi.h

FREESCALE eDMA DRIVER

Mail

Frank Li <Frank.Li@nxp.com>

Mailing list

imx@lists.linux.dev, dmaengine@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/dma/fsl,edma.yaml drivers/dma/
fsl-edma*.*

FREESCALE ENETC ETHERNET DRIVERS**Mail**

Claudiu Manoil <claudiu.manoil@nxp.com>, Vladimir Oltean
<vladimir.oltean@nxp.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/freescale/enetc/

FREESCALE eTSEC ETHERNET DRIVER (GIANFAR)**Mail**

Claudiu Manoil <claudiu.manoil@nxp.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/fsl-tsec-phy.txt drivers/net/
ethernet/freescale/gianfar*

FREESCALE GPMI NAND DRIVER**Mail**

Han Xu <han.xu@nxp.com>

Mailing list

linux-mtd@lists.infradead.org

Status

Maintained

Files

drivers/mtd/nand/raw/gpmi-nand/*

FREESCALE I2C CPM DRIVER

Mail

Jochen Friedrich <jochen@scram.de>

Mailing list

linuxppc-dev@lists.ozlabs.org, linux-i2c@vger.kernel.org

Status

Maintained

Files

`drivers/i2c/busses/i2c-cpm.c`

FREESCALE IMX / MXC FEC DRIVER

Mail

Wei Fang <wei.fang@nxp.com>

Reviewer

Shenwei Wang <shenwei.wang@nxp.com>, Clark Wang <xiaoning.wang@nxp.com>

Mailing list

imx@lists.linux.dev, netdev@vger.kernel.org

Status

Maintained

Files

`Documentation/devicetree/bindings/net/fsl,fec.yaml` `drivers/net/ethernet/freescale/fec.h` `drivers/net/ethernet/freescale/fec_main.c`
`drivers/net/ethernet/freescale/fec_ptp.c`

FREESCALE IMX / MXC FRAMEBUFFER DRIVER

Mail

Sascha Hauer <s.hauer@pengutronix.de>

Reviewer

Pengutronix Kernel Team <kernel@pengutronix.de>

Mailing list

linux-fbdev@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

`drivers/video/fbdev/imxfb.c`

FREESCALE IMX DDR PMU DRIVER

Mail

Frank Li <Frank.li@nxp.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

admin-guide/perf/imx-ddr Documentation/devicetree/bindings/perf/
fsl-imx-ddr.yaml drivers/perf/fsl_imx8_ddr_perf.c

FREESCALE IMX I2C DRIVER

Mail

Oleksij Rempel <o.rempel@pengutronix.de>

Reviewer

Pengutronix Kernel Team <kernel@pengutronix.de>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/i2c/i2c-imx.yaml drivers/i2c/
busses/i2c-imx.c

FREESCALE IMX LPI2C DRIVER

Mail

Dong Aisheng <aisheng.dong@nxp.com>

Mailing list

linux-i2c@vger.kernel.org, imx@lists.linux.dev

Status

Maintained

Files

Documentation/devicetree/bindings/i2c/i2c-imx-lpi2c.yaml drivers/
i2c/busses/i2c-imx-lpi2c.c

FREESCALE MPC I2C DRIVER

Mail

Chris Packham <chris.packham@alliedtelesis.co.nz>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/i2c/i2c-mpc.yaml drivers/i2c/
busses/i2c-mpc.c

FREESCALE QORIQ DPAA ETHERNET DRIVER

Mail

Madalin Bucur <madalin.bucur@nxp.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/freescale/dpaa

FREESCALE QORIQ DPAA FMAN DRIVER

Mail

Madalin Bucur <madalin.bucur@nxp.com>

Reviewer

Sean Anderson <sean.anderson@seco.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/fsl-fman.txt drivers/net/
ethernet/freescale/fman

FREESCALE QORIQ PTP CLOCK DRIVER

Mail

Yangbo Lu <yangbo.lu@nxp.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/ptp/ptp-qoriq.txt drivers/net/
ethernet/freescale/dpaa2/dpaa2-ptp* drivers/net/ethernet/freescale/
dpaa2/dprtc* drivers/net/ethernet/freescale/enetc/enetc_ptp.c
drivers/ptp/ptp_qoriq.c drivers/ptp/ptp_qoriq_debugfs.c include/
linux/fsl/ptp_qoriq.h

FREESCALE QUAD SPI DRIVER

Mail

Han Xu <han.xu@nxp.com>

Mailing list

linux-spi@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/spi/fsl,spi-fsl-qspi.yaml drivers/
spi/spi-fsl-qspi.c

FREESCALE QUICC ENGINE LIBRARY

Mail

Qiang Zhao <qiang.zhao@nxp.com>

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Maintained

Files

drivers/soc/fsl/qe/ include/soc/fsl/qe/

FREESCALE QUICC ENGINE QMC DRIVER

Mail

Herve Codina <herve.codina@bootlin.com>

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Maintained

Files

Documentation/devicetree/bindings/soc/fsl/cpm_qe/fsl,cpm1-scc-qmc.
yaml drivers/soc/fsl/qe/qmc.c include/soc/fsl/qe/qmc.h

FREESCALE QUICC ENGINE TSA DRIVER

Mail

Herve Codina <herve.codina@bootlin.com>

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Maintained

Files

Documentation/devicetree/bindings/soc/fsl/cpm_qe/fsl,cpm1-tsa.
yaml drivers/soc/fsl/qe/tsa.c drivers/soc/fsl/qe/tsa.h include/
dt-bindings/soc/cpm1-fsl,tsa.h

FREESCALE QUICC ENGINE UCC ETHERNET DRIVER

Mail

Li Yang <leoyang.li@nxp.com>

Mailing list

netdev@vger.kernel.org, linuxppc-dev@lists.ozlabs.org

Status

Maintained

Files

drivers/net/ethernet/freescale/ucc_geth*

FREESCALE QUICC ENGINE UCC HDLC DRIVER

Mail

Zhao Qiang <qiang.zhao@nxp.com>

Mailing list

netdev@vger.kernel.org, linuxppc-dev@lists.ozlabs.org

Status

Maintained

Files

`drivers/net/wan/fsl_ucc_hdlc*`

FREESCALE QUICC ENGINE UCC UART DRIVER

Mail

Timur Tabi <timur@kernel.org>

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Maintained

Files

`drivers/tty/serial/ucc_uart.c`

FREESCALE SOC DRIVERS

Mail

Li Yang <leoyang.li@nxp.com>

Mailing list

linuxppc-dev@lists.ozlabs.org, linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

`Documentation/devicetree/bindings/misc/fsl,dpaa2-console.yaml`
`Documentation/devicetree/bindings/soc/fsl/` `drivers/soc/fsl/` `include/linux/fsl/` `include/soc/fsl/`

FREESCALE SOC FS_ENET DRIVER

Mail

Pantelis Antoniou <pantelis.antoniou@gmail.com>

Mailing list

linuxppc-dev@lists.ozlabs.org, netdev@vger.kernel.org

Status

Maintained

Files

`drivers/net/ethernet/freescale/fs_enet/`

FREESCALE SOC SOUND DRIVERS

Mail

Shengjiu Wang <shengjiu.wang@gmail.com>, Xiubo Li <Xiubo.Lee@gmail.com>

Reviewer

Fabio Estevam <festevam@gmail.com>, Nicolin Chen <nicoleot-suka@gmail.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers), linuxppc-dev@lists.ozlabs.org

Status

Maintained

Files

`sound/soc/fsl/fsl* sound/soc/fsl/imx*`

FREESCALE SOC SOUND QMC DRIVER

Mail

Herve Codina <herve.codina@bootlin.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers), linuxppc-dev@lists.ozlabs.org

Status

Maintained

Files

`Documentation/devicetree/bindings/sound/fsl,qmc-audio.yaml` `sound/soc/fsl/fsl_qmc_audio.c`

FREESCALE USB PERIPHERAL DRIVERS

Mail

Li Yang <leoyang.li@nxp.com>

Mailing list

linux-usb@vger.kernel.org, linuxppc-dev@lists.ozlabs.org

Status

Maintained

Files

drivers/usb/gadget/udc/fsl*

FREESCALE USB PHY DRIVER

Mail

Ran Wang <ran.wang_1@nxp.com>

Mailing list

linux-usb@vger.kernel.org, linuxppc-dev@lists.ozlabs.org

Status

Maintained

Files

drivers/usb/phy/phy-fsl-usb*

FREEVXFS FILESYSTEM

Mail

Christoph Hellwig <hch@infradead.org>

Status

Maintained

Web-page

<ftp://ftp.openlinux.org/pub/people/hch/vxfs>

Files

fs/freevxfs/

FREEZER

Mail

"Rafael J. Wysocki" <rafael@kernel.org>, Pavel Machek <pavel@ucw.cz>

Mailing list

linux-pm@vger.kernel.org

Status

Supported

Files

power/freezing-of-tasks include/linux/freezer.h kernel/freezer.c

FSCRYPT: FILE SYSTEM LEVEL ENCRYPTION SUPPORT

Mail

Eric Biggers <ebiggers@kernel.org>, Theodore Y. Ts'o <tytso@mit.edu>, Jaegeuk Kim <jaegeuk@kernel.org>

Mailing list

linux-fscrypt@vger.kernel.org

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/linux-fscrypt/list/>

SCM

git <https://git.kernel.org/pub/scm/fs/fscrypt/linux.git>

Files

filesystems/fscrypt fs/crypto/ include/linux/fscrypt.h include/uapi/linux/fscrypt.h

FSI SUBSYSTEM

Mail

Jeremy Kerr <jk@ozlabs.org>, Joel Stanley <joel@jms.id.au>

Reviewer

Alistair Popple <alistair@popple.id.au>, Eddie James <eajames@linux.ibm.com>

Mailing list

linux-fsi@lists.ozlabs.org

Status

Supported

Patchwork

<http://patchwork.ozlabs.org/project/linux-fsi/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/joel/fsi.git](https://git.kernel.org/pub/scm/linux/kernel/git/joel/fsi.git)

Files

drivers/fsi/ include/linux/fsi*.h include/trace/events/fsi*.h

FSI-ATTACHED I2C DRIVER

Mail

Eddie James <eajames@linux.ibm.com>

Mailing list

linux-i2c@vger.kernel.org, openbmc@lists.ozlabs.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/i2c/i2c-fsi.txt drivers/i2c/
busses/i2c-fsi.c

FSI-ATTACHED SPI DRIVER**Mail**

Eddie James <ejames@linux.ibm.com>

Mailing list

linux-spi@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/fsi/ibm,fsi2spi.yaml drivers/spi/
spi-fsi.c

FSNOTIFY: FILESYSTEM NOTIFICATION INFRASTRUCTURE**Mail**

Jan Kara <jack@suse.cz>

Reviewer

Amir Goldstein <amir73il@gmail.com>

Mailing list

linux-fsdevel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/jack/linux-fs.git](https://git.kernel.org/pub/scm/linux/kernel/git/jack/linux-fs.git) fsnotify

Files

fs/notify/ include/linux/fsnotify*.h

FSVERITY: READ-ONLY FILE-BASED AUTHENTICITY PROTECTION**Mail**

Eric Biggers <ebiggers@kernel.org>, Theodore Y. Ts'o <tytso@mit.edu>

Mailing list

fsverity@lists.linux.dev

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/fsverity/list/>

SCM

git <https://git.kernel.org/pub/scm/fs/fsverity/linux.git>

Files

filesystems/fsverity fs/verity/ include/linux/fsverity.h include/uapi/
linux/fsverity.h

FT260 FTDI USB-HID TO I2C BRIDGE DRIVER

Mail

Michael Zaidman <michael.zaidman@gmail.com>

Mailing list

linux-i2c@vger.kernel.org, linux-input@vger.kernel.org

Status

Maintained

Files

drivers/hid/hid-ft260.c

FUJITSU LAPTOP EXTRAS

Mail

Jonathan Woithe <jwoithe@just42.net>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/fujitsu-laptop.c

FUJITSU TABLET EXTRAS

Mail

Robert Gerlach <khnz@gmx.de>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/fujitsu-tablet.c

FUNCTION HOOKS (FTRACE)

Mail

Steven Rostedt <rostedt@goodmis.org>, Masami Hiramatsu <mhiramat@kernel.org>

Reviewer

Mark Rutland <mark.rutland@arm.com>

Mailing list

linux-kernel@vger.kernel.org, linux-trace-kernel@vger.kernel.org

Status

Maintained

Patchwork

<https://patchwork.kernel.org/project/linux-trace-kernel/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/trace/linux-trace.git](https://git.kernel.org/pub/scm/linux/kernel/git/trace/linux-trace.git)

Files

Documentation/trace/ftrace* arch/*//*/ftrace* arch/*//*/ftrace*
include/*/ftrace.h kernel/trace/fgraph.c kernel/trace/ftrace*
samples/ftrace

FUNGIBLE ETHERNET DRIVERS

Mail

Dimitris Michailidis <dmichail@fungible.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/ethernet/fungible/

FUSE: FILESYSTEM IN USERSPACE

Mail

Miklos Szeredi <miklos@szeredi.hu>

Mailing list

linux-fsdevel@vger.kernel.org

Status

Maintained

Web-page

<https://github.com/libfuse/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/mszeredi/fuse.git](https://git.kernel.org/pub/scm/linux/kernel/git/mszeredi/fuse.git)

Files

filesystems/fuse fs/fuse/ include/uapi/linux/fuse.h

FUTEX SUBSYSTEM

Mail

Thomas Gleixner <tglx@linutronix.de>, Ingo Molnar <mingo@redhat.com>

Reviewer

Peter Zijlstra <peterz@infradead.org>, Darren Hart <dvhart@infradead.org>, Davidlohr Bueso <dave@stgolabs.net>, André Almeida <andrealmeid@igalia.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git](https://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git) locking/core

Files

Documentation/locking/*futex* include/asm-generic/futex.h include/linux/futex.h include/uapi/linux/futex.h kernel/futex/* tools/perf/bench/futex* tools/testing/selftests/futex/

GALAXYCORE GC0308 CAMERA SENSOR DRIVER

Mail

Sebastian Reichel <sre@kernel.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/i2c/galaxycore,gc0308.yaml
drivers/media/i2c/gc0308.c

GALAXYCORE GC2145 SENSOR DRIVER

Mail

Alain Volmat <alain.volmat@foss.st.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/galaxycore,gc2145.yaml
drivers/media/i2c/gc2145.c

GATEWORKS SYSTEM CONTROLLER (GSC) DRIVER**Mail**

Tim Harvey <tharvey@gateworks.com>

Status

Maintained

Files

Documentation/devicetree/bindings/mfd/gateworks-gsc.yaml hwmon/gsc-hwmon drivers/hwmon/gsc-hwmon.c drivers/mfd/gateworks-gsc.c include/linux/mfd/gsc.h include/linux/platform_data/gsc_hwmon.h

GCC PLUGINS**Mail**

Kees Cook <keescook@chromium.org>

Mailing list

linux-hardening@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/kees/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/kees/linux.git) for-next/hardening

Files

kbuild/gcc-plugins include/linux/stackleak.h kernel/stackleak.c scripts/Makefile.gcc-plugins scripts/gcc-plugins/

GCOV BASED KERNEL PROFILING**Mail**

Peter Oberparleiter <oberpar@linux.ibm.com>

Status

Maintained

Files

dev-tools/gcov kernel/gcov/

GDB KERNEL DEBUGGING HELPER SCRIPTS

Mail

Jan Kiszka <jan.kiszka@siemens.com>, Kieran Bingham <kbingham@kernel.org>

Status

Supported

Files

scripts/gdb/

GEMINI CRYPTO DRIVER

Mail

Corentin Labbe <clabbe@baylibre.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Maintained

Files

drivers/crypto/gemini/

GEMTEK FM RADIO RECEIVER DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/radio/radio-gemtek*

GENERIC ARCHITECTURE TOPOLOGY

Mail

Sudeep Holla <sudeep.holla@arm.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

drivers/base/arch_topology.c include/linux/arch_topology.h

GENERIC ENTRY CODE

Mail

Thomas Gleixner <tglx@linutronix.de>, Peter Zijlstra <peterz@infradead.org>, Andy Lutomirski <luto@kernel.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git](https://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git) core/entry

Files

include/linux/entry-common.h include/linux/entry-kvm.h kernel/entry/

GENERIC GPIO I2C DRIVER

Mail

Wolfram Sang <wsa+renesas@sang-engineering.com>

Status

Supported

Files

drivers/i2c/busses/i2c-gpio.c include/linux/platform_data/i2c-gpio.h

GENERIC GPIO I2C MULTIPLEXER DRIVER

Mail

Peter Korsgaard <peter.korsgaard@barco.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Supported

Files

i2c/muxes/i2c-mux-gpio drivers/i2c/muxes/i2c-mux-gpio.c include/linux/platform_data/i2c-mux-gpio.h

GENERIC HDLC (WAN) DRIVERS

Mail

Krzysztof Halasa <khc@pm.waw.pl>

Status

Maintained

Web-page

<http://www.kernel.org/pub/linux/utils/net/hdlc/>

Files

drivers/net/wan/cl01.c drivers/net/wan/hd6457* drivers/net/wan/hdlc*
drivers/net/wan/n2.c drivers/net/wan/pc300too.c drivers/net/wan/
pci200syn.c drivers/net/wan/wanxl*

GENERIC INCLUDE/ASM HEADER FILES

Mail

Arnd Bergmann <arnd@arndb.de>

Mailing list

linux-arch@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/arnd/asm-generic.git](https://git.kernel.org/pub/scm/linux/kernel/git/arnd/asm-generic.git)

Files

include/asm-generic/ include/uapi/asm-generic/

GENERIC PHY FRAMEWORK

Mail

Vinod Koul <vkoul@kernel.org>, Kishon Vijay Abraham I <kishon@kernel.org>

Mailing list

linux-phy@lists.infradead.org

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/linux-phy/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/phy/linux-phy.git](https://git.kernel.org/pub/scm/linux/kernel/git/phy/linux-phy.git)

Files

Documentation/devicetree/bindings/phy/ drivers/phy/ include/
dt-bindings/phy/ include/linux/phy/

GENERIC PINCTRL I2C DEMULTIPLEXER DRIVER**Mail**

Wolfram Sang <wsa+renesas@sang-engineering.com>

Status

Supported

Files

Documentation/devicetree/bindings/i2c/i2c-demux-pinctrl.yaml
drivers/i2c/muxes/i2c-demux-pinctrl.c

GENERIC PM DOMAINS**Mail**

Ulf Hansson <ulf.hansson@linaro.org>

Mailing list

linux-pm@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/power/power?domain*

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/ulfh/linux-pm.git](https://git.kernel.org/pub/scm/linux/kernel/git/ulfh/linux-pm.git)

Files

drivers/pmdomain/ include/linux/pm_domain.h

GENERIC RADIX TREE**Mail**

Kent Overstreet <kent.overstreet@linux.dev>

Status

Supported

chat

<irc://irc.oftc.net/bcache>

Files

include/linux/generic-radix-tree.h lib/generic-radix-tree.c

GENERIC RESISTIVE TOUCHSCREEN ADC DRIVER

Mail

Eugen Hristev <eugen.hristev@microchip.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/input/touchscreen/resistive-adc-touch.c

GENERIC STRING LIBRARY

Mail

Kees Cook <keescook@chromium.org>

Reviewer

Andy Shevchenko <andy@kernel.org>

Mailing list

linux-hardening@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/kees/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/kees/linux.git) for-next/hardening

Files

include/linux/string.h include/linux/string_choices.h include/
linux/string_helpers.h lib/string.c lib/string_helpers.c lib/
test-string_helpers.c lib/test_string.c

GENERIC UIO DRIVER FOR PCI DEVICES

Mail

"Michael S. Tsirkin" <mst@redhat.com>

Mailing list

kvm@vger.kernel.org

Status

Supported

Files

drivers/uio/uio_pci_generic.c

GENERIC VDSO LIBRARY

Mail

Andy Lutomirski <luto@kernel.org>, Thomas Gleixner <tglx@linutronix.de>, Vincenzo Frascino <vincenzo.frascino@arm.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git](https://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git) timers/vdso

Files

include/asm-generic/vdso/vsyscall.h include/vdso/ kernel/time/vsyscall.c lib/vdso/

GENWQE (IBM Generic Workqueue Card)

Mail

Frank Haverkamp <haver@linux.ibm.com>

Status

Supported

Files

drivers/misc/genwqe/

GET_MAINTAINER SCRIPT

Mail

Joe Perches <joe@perches.com>

Status

Maintained

Files

scripts/get_maintainer.pl

GFS2 FILE SYSTEM

Mail

Andreas Gruenbacher <agruenba@redhat.com>

Mailing list

gfs2@lists.linux.dev

Status

Supported

bugs

https://bugzilla.kernel.org/enter_bug.cgi?product=File%20System&component=gfs2

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/gfs2/linux-gfs2.git](https://git.kernel.org/pub/scm/linux/kernel/git/gfs2/linux-gfs2.git)

Files

Documentation/filesystems/gfs2* fs/gfs2/ include/uapi/linux/
gfs2_ondisk.h

GIGABYTE WATERFORCE SENSOR DRIVER

Mail

Aleksa Savic <savicaleksa83@gmail.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/gigabyte_waterforce drivers/hwmon/gigabyte_waterforce.c

GIGABYTE WMI DRIVER

Mail

Thomas Weißschuh <thomas@weissschuh.net>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/gigabyte-wmi.c

GNSS SUBSYSTEM

Mail

Johan Hovold <johan@kernel.org>

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/johan/gnss.git](https://git.kernel.org/pub/scm/linux/kernel/git/johan/gnss.git)

Files

Documentation/ABI/testing/sysfs-class-gnss Documentation/devicetree/
bindings/gnss/ drivers/gnss/ include/linux/gnss.h

GO7007 MPEG CODEC

Mail

Hans Verkuil <hverkuil-cisco@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/usb/go7007/

GOODIX TOUCHSCREEN

Mail

Bastien Nocera <hadess@hadess.net>, Hans de Goede <hde-goede@redhat.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/input/touchscreen/goodix*

GOOGLE ETHERNET DRIVERS

Mail

Jeroen de Borst <jeroendb@google.com>, Praveen Kaligineedi <pkaligineedi@google.com>

Reviewer

Shailend Chand <shailend@google.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

networking/device_drivers/ethernet/google/gve drivers/net/ethernet/google

GOOGLE FIRMWARE DRIVERS

Mail

Tzung-Bi Shih <tzungbi@kernel.org>

Reviewer

Brian Norris <briannorris@chromium.org>, Julius Werner <jw-erner@chromium.org>

Mailing list

chrome-platform@lists.linux.dev

Status

Maintained

SCM

`git git://git.kernel.org/pub/scm/linux/kernel/git/chrome-platform/linux.git`

Files

`drivers/firmware/google/`

GOOGLE TENSOR SoC SUPPORT

Mail

Peter Griffin <peter.griffin@linaro.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-samsung-soc@vger.kernel.org

Status

Maintained

Files

`Documentation/devicetree/bindings/clock/google,gs101-clock.yaml`
`arch/arm64/boot/dts/exynos/google/ drivers/clk/samsung/clk-gs101.c`
`include/dt-bindings/clock/google,gs101.h`

GPD POCKET FAN DRIVER

Mail

Hans de Goede <hdegoede@redhat.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

`drivers/platform/x86/gpd-pocket-fan.c`

GPIO ACPI SUPPORT

Mail

Mika Westerberg <mika.westerberg@linux.intel.com>, Andy Shevchenko <andriy.shevchenko@linux.intel.com>

Mailing list

linux-gpio@vger.kernel.org, linux-acpi@vger.kernel.org

Status

Supported

SCM

`git git://git.kernel.org/pub/scm/linux/kernel/git/andy/linux-gpio-intel.git`

Files

`firmware-guide/acpi/gpio-properties` `drivers/gpio/gpiolib-acpi.c` `drivers/gpio/gpiolib-acpi.h`

GPIO AGGREGATOR

Mail

Geert Uytterhoeven <geert+renesas@glider.be>

Mailing list

linux-gpio@vger.kernel.org

Status

Supported

Files

`admin-guide/gpio/gpio-aggregator` `drivers/gpio/gpio-aggregator.c`

GPIO IR Transmitter

Mail

Sean Young <sean@mess.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

`Documentation/devicetree/bindings/leds/irled/gpio-ir-tx.yaml`
`drivers/media/rc/gpio-ir-tx.c`

GPIO MOCKUP DRIVER

Mail

Bamvor Jian Zhang <bamv2005@gmail.com>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

drivers/gpio/gpio-mockup.c tools/testing/selftests/gpio/

GPIO REGMAP

Mail

Michael Walle <mwalle@kernel.org>

Status

Maintained

Files

drivers/gpio/gpio-regmap.c include/linux/gpio/regmap.h

Content regex

(devm_)?gpio_regmap_(un)?register

GPIO SUBSYSTEM

Mail

Linus Walleij <linus.walleij@linaro.org>, Bartosz Golaszewski <brgl@bgdev.pl>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/brgl/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/brgl/linux.git)

Files

Documentation/admin-guide/gpio/ Documentation/devicetree/bindings/
gpio/ Documentation/driver-api/gpio/ drivers/gpio/ include/
dt-bindings/gpio/ include/linux/gpio.h include/linux/gpio/ include/
linux/of_gpio.h

GPIO UAPI

Mail

Bartosz Golaszewski <brgl@bgdev.pl>

Reviewer

Kent Gibson <warthog618@gmail.com>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

SCM

`git git://git.kernel.org/pub/scm/linux/kernel/git/brgl/linux.git`

Files

<code>Documentation/ABI/obsolete/sysfs-gpio</code>	<code>Documentation/ABI/testing/</code>
<code>gpio-cdev</code>	<code>drivers/gpio/gpiolib-cdev.c</code>
<code>tools/gpio/</code>	<code>include/uapi/linux/gpio.h</code>

GRE DEMULTIPLEXER DRIVER

Mail

Dmitry Kozlov <xeb@mail.ru>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

`include/net/gre.h` `net/ipv4/gre_demux.c` `net/ipv4/gre_offload.c`

GRETH 10/100/1G Ethernet MAC device driver

Mail

Andreas Larsson <andreas@gaisler.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

`drivers/net/ethernet/aeroflex/`

GREYBUS AUDIO PROTOCOLS DRIVERS

Mail

Vaibhav Agarwal <vaibhav.sr@gmail.com>, Mark Greer
<mgreer@animalcreek.com>

Status

Maintained

Files

drivers/staging/greybus/audio_apbridgea.c drivers/staging/greybus/
audio_apbridgea.h drivers/staging/greybus/audio_codec.c drivers/
staging/greybus/audio_codec.h drivers/staging/greybus/audio_gb.c
drivers/staging/greybus/audio_manager.c drivers/staging/greybus/
audio_manager.h drivers/staging/greybus/audio_manager_module.c
drivers/staging/greybus/audio_manager_private.h drivers/staging/
greybus/audio_manager_sysfs.c drivers/staging/greybus/audio_module.c
drivers/staging/greybus/audio_topology.c

GREYBUS FW/HID/SPI PROTOCOLS DRIVERS

Mail

Viresh Kumar <vireshk@kernel.org>

Status

Maintained

Files

drivers/staging/greybus/authentication.c drivers/staging/
greybus/bootrom.c drivers/staging/greybus/firmware.h drivers/
staging/greybus/fw-core.c drivers/staging/greybus/fw-download.c
drivers/staging/greybus/fw-management.c drivers/staging/greybus/
greybus_authentication.h drivers/staging/greybus/greybus_firmware.h
drivers/staging/greybus/hid.c drivers/staging/greybus/i2c.c drivers/
staging/greybus/spi.c drivers/staging/greybus/spilib.c drivers/
staging/greybus/spilib.h

GREYBUS LOOPBACK DRIVER

Mail

Bryan O'Donoghue <pure.logic@nexus-software.ie>

Status

Maintained

Files

drivers/staging/greybus/loopback.c

GREYBUS PLATFORM DRIVERS

Mail

Vaibhav Hiremath <hvaibhav.linux@gmail.com>

Status

Maintained

Files

`drivers/staging/greybus/arche-apb-ctrl.c` `drivers/staging/greybus/arche-platform.c` `drivers/staging/greybus/arche_platform.h`

GREYBUS SDIO/GPIO/SPI PROTOCOLS DRIVERS

Mail

Rui Miguel Silva <rmfrfs@gmail.com>

Status

Maintained

Files

`drivers/staging/greybus/gpio.c` `drivers/staging/greybus/light.c`
`drivers/staging/greybus/power_supply.c` `drivers/staging/greybus/sdio.c`
`drivers/staging/greybus/spi.c` `drivers/staging/greybus/spilib.c`

GREYBUS BEAGLEPLAY DRIVERS

Mail

Ayush Singh <ayushdevel1325@gmail.com>

Mailing list

greybus-dev@lists.linaro.org (moderated for non-subscribers)

Status

Maintained

Files

`Documentation/devicetree/bindings/net/ti,cc1352p7.yaml` `drivers/greybus/gb-beagleplay.c`

GREYBUS SUBSYSTEM

Mail

Johan Hovold <johan@kernel.org>, Alex Elder <elder@kernel.org>, Greg Kroah-Hartman <gregkh@linuxfoundation.org>

Mailing list

greybus-dev@lists.linaro.org (moderated for non-subscribers)

Status

Maintained

Files

drivers/greybus/ drivers/staging/greybus/ include/linux/greybus.h
include/linux/greybus/

GREYBUS UART PROTOCOLS DRIVERS

Mail

David Lin <dtwlin@gmail.com>

Status

Maintained

Files

drivers/staging/greybus/log.c drivers/staging/greybus/uart.c

GS1662 VIDEO SERIALIZER

Mail

Charles-Antoine Couret <charles-antoine.couret@nexvision.fr>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git git://linxrtv.org/media_tree.git

Files

drivers/media/spi/gs1662.c

GSPCA FINEPIX SUBDRIVER

Mail

Frank Zago <frank@zago.net>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git git://linxrtv.org/media_tree.git

Files

drivers/media/usb/gspca/finepix.c

GSPCA GL860 SUBDRIVER

Mail

Olivier Lorin <o.lorin@laposte.net>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

`drivers/media/usb/gspca/gl860/`

GSPCA M5602 SUBDRIVER

Mail

Erik Andren <erik.andren@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

`drivers/media/usb/gspca/m5602/`

GSPCA PAC207 SONIXB SUBDRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Odd Fixes

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

`drivers/media/usb/gspca/pac207.c`

GSPCA SN9C20X SUBDRIVER

Mail

Brian Johnson <brijohn@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

`drivers/media/usb/gspca/sn9c20x.c`

GSPCA T613 SUBDRIVER

Mail

Leandro Costantino <lcostantino@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

`drivers/media/usb/gspca/t613.c`

GSPCA USB WEBCAM DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Odd Fixes

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

`drivers/media/usb/gspca/`

GTP (GPRS Tunneling Protocol)

Mail

Pablo Neira Ayuso <pablo@netfilter.org>, Harald Welte
<laforge@gnumonks.org>

Mailing list

osmocom-net-gprs@lists.osmocom.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/pablo/gtp.git](https://git.kernel.org/pub/scm/linux/kernel/git/pablo/gtp.git)

Files

drivers/net/gtp.c

GUID PARTITION TABLE (GPT)

Mail

Davidlohr Bueso <dave@stgolabs.net>

Mailing list

linux-efi@vger.kernel.org

Status

Maintained

Files

block/partitions/efi.*

HABANALABS PCI DRIVER

Mail

Oded Gabbay <ogabbay@kernel.org>

Mailing list

dri-devel@lists.freedesktop.org

Status

Supported

chat

<irc://irc.oftc.net/dri-devel>

SCM

git <https://git.kernel.org/pub/scm/linux/kernel/git/ogabbay/linux.git>

Files

Documentation/ABI/testing/debugfs-driver-habanalabs Documentation/
ABI/testing/sysfs-driver-habanalabs drivers/accel/habanalabs/
include/linux/habanalabs/ include/trace/events/habanalabs.h include/
uapi/drm/habanalabs_accel.h

HACKRF MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/usb/hackrf/

HANDSHAKE UPCALL FOR TRANSPORT LAYER SECURITY

Mail

Chuck Lever <chuck.lever@oracle.com>

Mailing list

kernel-tls-handshake@lists.linux.dev, netdev@vger.kernel.org

Status

Maintained

Files

Documentation/netlink/specs/handshake.yaml networking/tls-handshake
include/net/handshake.h include/trace/events/handshake.h net/
handshake/

HANTRO VPU CODEC DRIVER

Mail

Ezequiel Garcia <ezequiel@vanguardiasur.com.ar>, Philipp Zabel
<p.zabel@pengutronix.de>

Mailing list

linux-media@vger.kernel.org, linux-rockchip@lists.infradead.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/nxp,imx8mq-vpu.yaml
Documentation/devicetree/bindings/media/rockchip,rk3568-vepu.yaml
Documentation/devicetree/bindings/media/rockchip-vpu.yaml drivers/
media/platform/verisilicon/

HARD DRIVE ACTIVE PROTECTION SYSTEM (HDAPS) DRIVER**Mail**

Frank Seidel <frank@f-seidel.de>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Web-page

<http://www.kernel.org/pub/linux/kernel/people/fseidel/hdaps/>

Files

drivers/platform/x86/hdaps.c

HARDWARE MONITORING**Mail**

Jean Delvare <jdelvare@suse.com>, Guenter Roeck <linux@roeck-us.net>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Web-page

<http://hwmon.wiki.kernel.org/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/groeck/linux-staging.git](https://git.kernel.org/pub/scm/linux/kernel/git/groeck/linux-staging.git)

Files

Documentation/ABI/testing/sysfs-class-hwmon Documentation/
devicetree/bindings/hwmon/ Documentation/hwmon/ drivers/hwmon/
include/linux/hwmon*.h include/trace/events/hwmon*.h

Content regex

(devm_)?hwmon_device_(un)?register(|_with_groups|_with_info)

HARDWARE RANDOM NUMBER GENERATOR CORE**Mail**

Olivia Mackall <olivia@selenic.com>, Herbert Xu <herbert@gondor.apana.org.au>

Mailing list

linux-crypto@vger.kernel.org

Status

Odd fixes

Files

admin-guide/hw_random Documentation/devicetree/bindings/rng/ drivers/
char/hw_random/ include/linux/hw_random.h

HARDWARE SPINLOCK CORE

Mail

Bjorn Andersson <andersson@kernel.org>

Reviewer

Baolin Wang <baolin.wang7@gmail.com>

Mailing list

linux-remoteproc@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/andersson/remoteproc.git](https://git.kernel.org/pub/scm/linux/kernel/git/andersson/remoteproc.git)
hwspinlock-next

Files

Documentation/devicetree/bindings/hwlock/ locking/hwspinlock drivers/
hwspinlock/ include/linux/hwspinlock.h

HARDWARE TRACING FACILITIES

Mail

Alexander Shishkin <alexander.shishkin@linux.intel.com>

Status

Maintained

Files

drivers/hwtracing/

HARMONY SOUND DRIVER

Mailing list

linux-parisc@vger.kernel.org

Status

Maintained

Files

sound/parisc/harmony.*

HDPVR USB VIDEO ENCODER DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Odd Fixes

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/usb/hdpvr/

HEWLETT PACKARD ENTERPRISE ILO CHIF DRIVER

Mail

Matt Hsiao <matt.hsiao@hpe.com>

Status

Supported

Files

drivers/misc/hpilo.[ch]

HEWLETT PACKARD ENTERPRISE ILO NMI WATCHDOG DRIVER

Mail

Jerry Hoemann <jerry.hoemann@hpe.com>

Status

Supported

Files

watchdog/hpwdt drivers/watchdog/hpwdt.c

HEWLETT-PACKARD SMART ARRAY RAID DRIVER (hpsa)

Mail

Don Brace <don.brace@microchip.com>

Mailing list

storagedev@microchip.com, linux-scsi@vger.kernel.org

Status

Supported

Files

scsi/hpsa drivers/scsi/hpsa*.ch include/linux/cciss*.h include/uapi/
linux/cciss*.h

HF11 DRIVER

Mail

Dennis Dalessandro <dennis.dalessandro@cornelisnetworks.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Supported

Files

drivers/infiniband/hw/hfi1

HFS FILESYSTEM

Mailing list

linux-fsdevel@vger.kernel.org

Status

Orphan

Files

filesystems/hfs fs/hfs/

HFSPPLUS FILESYSTEM

Mailing list

linux-fsdevel@vger.kernel.org

Status

Orphan

Files

filesystems/hfsplus fs/hfsplus/

HGA FRAMEBUFFER DRIVER

Mail

Ferenc Bakonyi <fero@drama.obuda.kando.hu>

Mailing list

linux-nvidia@lists.surfsouth.com

Status

Maintained

Web-page

<http://drama.obuda.kando.hu/~fero/cgi-bin/hgafb.shtml>

Files

drivers/video/fbdev/hgafb.c

HIBERNATION (aka Software Suspend, aka swsusp)

Mail

"Rafael J. Wysocki" <rafael@kernel.org>, Pavel Machek <pavel@ucw.cz>

Mailing list

linux-pm@vger.kernel.org

Status

Supported

bugs

<https://bugzilla.kernel.org>

Files

arch/*/include/asm/suspend*.h arch/x86/power/ drivers/base/power/
include/linux/freezer.h include/linux/pm.h include/linux/suspend.h
kernel/power/

HID CORE LAYER

Mail

Jiri Kosina <jikos@kernel.org>, Benjamin Tissoires <benjamin.tissoires@redhat.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/hid/hid.git](https://git.kernel.org/pub/scm/linux/kernel/git/hid/hid.git)

Files

Documentation/hid/ drivers/hid/ include/linux/hid* include/uapi/
linux/hid* samples/hid/ tools/testing/selftests/hid/

HID LOGITECH DRIVERS

Reviewer

Filipe Laíns <lains@riseup.net>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/hid/hid-logitech-*

HID NVIDIA SHIELD DRIVER

Mail

Rahul Rameshbabu <rrameshbabu@nvidia.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/hid/hid-nvidia-shield.c

HID PHOENIX RC FLIGHT CONTROLLER

Mail

Marcus Folkesson <marcus.folkesson@gmail.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/hid/hid-pxrc.c

HID PLAYSTATION DRIVER

Mail

Roderick Colenbrander <roderick.colenbrander@sony.com>

Mailing list

linux-input@vger.kernel.org

Status

Supported

Files

drivers/hid/hid-playstation.c

HID SENSOR HUB DRIVERS

Mail

Jiri Kosina <jikos@kernel.org>, Jonathan Cameron <jic23@kernel.org>, Srinivas Pandruvada <srinivas.pandruvada@linux.intel.com>

Mailing list

linux-input@vger.kernel.org, linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/hid/hid-sensor* drivers/hid/hid-sensor-* drivers/iio/*/hid-* include/linux/hid-sensor-*

HID VRC-2 CAR CONTROLLER DRIVER**Mail**

Marcus Folkesson <marcus.folkesson@gmail.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/hid/hid-vrc2.c

HID WACOM DRIVER**Mail**

Ping Cheng <ping.cheng@wacom.com>, Jason Gerecke <ja-son.gerecke@wacom.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/hid/wacom.h drivers/hid/wacom_*

HID++ LOGITECH DRIVERS**Reviewer**

Filipe Láíns <lains@riseup.net>, Bastien Nocera <hadess@hadess.net>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/hid/hid-logitech-hidpp.c

HIGH-RESOLUTION TIMERS, CLOCKEVENTS

Mail

Thomas Gleixner <tglx@linutronix.de>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git](https://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git) timers/core

Files

Documentation/timers/ include/linux/clockchips.h include/linux/
hrtimer.h kernel/time/clockevents.c kernel/time/hrtimer.c kernel/
time/timer_*.c

HIGH-SPEED SCC DRIVER FOR AX.25

Mailing list

linux-hams@vger.kernel.org

Status

Orphan

Files

drivers/net/hamradio/scc.c

HIGHPOINT ROCKETRAID 3xxx RAID DRIVER

Mail

HighPoint Linux Team <linux@highpoint-tech.com>

Status

Supported

Web-page

<http://www.highpoint-tech.com>

Files

scsi/hptiop drivers/scsi/hptiop.c

HIKEY960 ONBOARD USB GPIO HUB DRIVER

Mail

John Stultz <jstultz@google.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

drivers/misc/hisi_hikey_usb.c

HIMAX HX83112B TOUCHSCREEN SUPPORT**Mail**

Job Noorman <job@noorman.info>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/input/touchscreen/himax,hx83112b.
yaml drivers/input/touchscreen/himax_hx83112b.c

HIPPI**Mail**

Jes Sorensen <jes@trained-monkey.org>

Mailing list

linux-hippi@sunsite.dk

Status

Maintained

Files

drivers/net/hippi/ include/linux/hippidevice.h include/uapi/linux/
if_hippi.h net/802/hippi.c

HIRSCHMANN HELLCREEK ETHERNET SWITCH DRIVER**Mail**

Kurt Kanzenbach <kurt@linutronix.de>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/dsa/hirschmann,hellcreek.
yaml drivers/net/dsa/hirschmann/* include/linux/platform_data/
hirschmann-hellcreek.h net/dsa/tag_hellcreek.c

HISILICON DMA DRIVER

Mail

Zhou Wang <wangzhou1@hisilicon.com>, Jie Hai <haijie1@huawei.com>

Mailing list

dmaengine@vger.kernel.org

Status

Maintained

Files

drivers/dma/hisi_dma.c

HISILICON GPIO DRIVER

Mail

Jay Fang <f.fangjian@huawei.com>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/gpio/hisilicon,ascend910-gpio.
yaml drivers/gpio/gpio-hisi.c

HISILICON HIGH PERFORMANCE RSA ENGINE DRIVER (HPRE)

Mail

Zhiqi Song <songzhiqi1@huawei.com>, Longfang Liu <liulongfang@huawei.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/debugfs-hisi-hpre drivers/crypto/
hisilicon/hpre/hpre.h drivers/crypto/hisilicon/hpre/hpre_crypto.c
drivers/crypto/hisilicon/hpre/hpre_main.c

HISILICON HNS3 PMU DRIVER

Mail

Jijie Shao <shaojijie@huawei.com>

Status

Supported

Files

admin-guide/perf/hns3-pmu drivers/perf/hisilicon/hns3_pmu.c

HISILICON I2C CONTROLLER DRIVER

Mail

Yicong Yang <yangyicong@hisilicon.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Web-page

<https://www.hisilicon.com>

Files

Documentation/devicetree/bindings/i2c/hisilicon,ascend910-i2c.yaml
drivers/i2c/busses/i2c-hisi.c

HISILICON KUNPENG SOC HCCS DRIVER

Mail

Huisong Li <lihuisong@huawei.com>

Status

Maintained

Files

Documentation/ABI/testing/sysfs-devices-platform-kunpeng_hccs
drivers/soc/hisilicon/kunpeng_hccs.c drivers/soc/hisilicon/
kunpeng_hccs.h

HISILICON LPC BUS DRIVER

Mail

Jay Fang <f.fangjian@huawei.com>

Status

Maintained

Web-page

<http://www.hisilicon.com>

Files

Documentation/devicetree/bindings/arm/hisilicon/low-pin-count.yaml
drivers/bus/hisi_lpc.c

HISILICON NETWORK SUBSYSTEM 3 DRIVER (HNS3)

Mail

Yisen Zhuang <yisen.zhuang@huawei.com>, Salil Mehta
<salil.mehta@huawei.com>, Jijie Shao <shaojijie@huawei.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Web-page

<http://www.hisilicon.com>

Files

drivers/net/ethernet/hisilicon/hns3/

HISILICON NETWORK SUBSYSTEM DRIVER

Mail

Yisen Zhuang <yisen.zhuang@huawei.com>, Salil Mehta
<salil.mehta@huawei.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Web-page

<http://www.hisilicon.com>

Files

Documentation/devicetree/bindings/net/hisilicon*.txt drivers/net/
ethernet/hisilicon/

HISILICON PMU DRIVER

Mail

Yicong Yang <yangyicong@hisilicon.com>, Jonathan Cameron
<jonathan.cameron@huawei.com>

Status

Supported

Web-page

<http://www.hisilicon.com>

Files

admin-guide/perf/hisi-pcie-pmu admin-guide/perf/hisi-pmu drivers/perf/hisilicon

HISILICON PTT DRIVER**Mail**

Yicong Yang <yangyicong@hisilicon.com>, Jonathan Cameron <jonathan.cameron@huawei.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-devices-hisi_ptt trace/hisi-ptt drivers/hwtracing/ptt/ tools/perf/arch/arm64/util/hisi-ptt.c tools/perf/util/hisi-ptt* tools/perf/util/hisi-ptt-decoder/*

HISILICON QM DRIVER**Mail**

Weili Qian <qianweili@huawei.com>, Zhou Wang <wangzhou1@hisilicon.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Maintained

Files

drivers/crypto/hisilicon/Kconfig drivers/crypto/hisilicon/Makefile drivers/crypto/hisilicon/qm.c drivers/crypto/hisilicon/sgl.c include/linux/hisi_acc_qm.h

HISILICON ROCE DRIVER**Mail**

Chengchang Tang <tangchengchang@huawei.com>, Junxian Huang <huangjunxian6@hisilicon.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/infiniband/hisilicon-hns-roce.txt drivers/infiniband/hw/hns/

HISILICON SAS Controller

Mail

Xiang Chen <chenxiang66@hisilicon.com>

Status

Supported

Web-page

<http://www.hisilicon.com>

Files

Documentation/devicetree/bindings/scsi/hisilicon-sas.txt drivers/
scsi/hisi_sas/

HISILICON SECURITY ENGINE V2 DRIVER (SEC2)

Mail

Longfang Liu <liulongfang@huawei.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/debugfs-hisi-sec drivers/crypto/hisilicon/
sec2/sec.h drivers/crypto/hisilicon/sec2/sec_crypto.c drivers/crypto/
hisilicon/sec2/sec_crypto.h drivers/crypto/hisilicon/sec2/sec_main.c

HISILICON SPI Controller DRIVER FOR KUNPENG SOCS

Mail

Jay Fang <f.fangjian@huawei.com>

Mailing list

linux-spi@vger.kernel.org

Status

Maintained

Web-page

<http://www.hisilicon.com>

Files

drivers/spi/spi-hisi-kunpeng.c

HISILICON SPMI CONTROLLER DRIVER FOR HIKEY 970

Mail

Mauro Carvalho Chehab <mchehab+huawei@kernel.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/spmi/hisilicon,
hisi-spmi-controller.yaml drivers/spmi/hisi-spmi-controller.c

HISILICON SPMI PMIC DRIVER FOR HIKEY 6421v600

Mail

Mauro Carvalho Chehab <mchehab+huawei@kernel.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/mfd/hisilicon,hi6421-spmi-pmic.
yaml drivers/mfd/hi6421-spmi-pmic.c

HISILICON TRUE RANDOM NUMBER GENERATOR V2 SUPPORT

Mail

Weili Qian <qianweili@huawei.com>

Status

Maintained

Files

drivers/crypto/hisilicon/trng/trng.c

HISILICON V3XX SPI NOR FLASH Controller Driver

Mail

Jay Fang <f.fangjian@huawei.com>

Status

Maintained

Web-page

<http://www.hisilicon.com>

Files

drivers/spi/spi-hisi-sfc-v3xx.c

HISILICON ZIP Controller DRIVER

Mail

Yang Shen <shenyang39@huawei.com>, Zhou Wang
<wangzhou1@hisilicon.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/debugfs-hisi-zip drivers/crypto/hisilicon/
zip/

HMM - Heterogeneous Memory Management

Mail

Jérôme Glisse <jglisse@redhat.com>

Mailing list

linux-mm@kvack.org

Status

Maintained

Files

mm/hmm include/linux/hmm* lib/test_hmm* mm/hmm* tools/testing/
selftests/mm/*hmm*

HONEYWELL HSC030PA PRESSURE SENSOR SERIES IIO DRIVER

Mail

Petre Rodan <petre.rodan@subdimension.ro>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/pressure/honeywell,hsc030pa.
yaml drivers/iio/pressure/hsc030pa*

HONEYWELL MPRLS0025PA PRESSURE SENSOR SERIES IIO DRIVER

Mail

Andreas Klinger <ak@it-klinger.de>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/pressure/honeywell,
mprls0025pa.yaml drivers/iio/pressure/mprls0025pa.c

HP BIOSCFG DRIVER

Mail

Jorge Lopez <jorge.lopez2@hp.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/hp/hp-bioscfg/

HP COMPAQ TC1100 TABLET WMI EXTRAS DRIVER

Mailing list

platform-driver-x86@vger.kernel.org

Status

Orphan

Files

drivers/platform/x86/hp/tc1100-wmi.c

HP WMI HARDWARE MONITOR DRIVER

Mail

James Seo <james@equiv.tech>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/hp-wmi-sensors drivers/hwmon/hp-wmi-sensors.c

HPET: High Precision Event Timers driver

Mail

Clemens Ladisch <clemens@ladisch.de>

Status

Maintained

Files

timers/hpet drivers/char/hpet.c include/linux/hpet.h include/uapi/
linux/hpet.h

HPET: x86

Status

Orphan

Files

arch/x86/include/asm/hpet.h arch/x86/kernel/hpet.c

HPFS FILESYSTEM

Mail

Mikulas Patocka <mikulas@artax.karlin.mff.cuni.cz>

Status

Maintained

Web-page

<http://artax.karlin.mff.cuni.cz/~mikulas/vyplody/hpfs/index-e.cgi>

Files

fs/hpfs/

HS3001 Hardware Temperature and Humidity Sensor

Mail

Andre Werner <andre.werner@systec-electronic.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

drivers/hwmon/hs3001.c

HSI SUBSYSTEM

Mail

Sebastian Reichel <sre@kernel.org>

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/sre/linux-hsi.git](https://git.kernel.org/pub/scm/linux/kernel/git/sre/linux-hsi.git)

Files

Documentation/ABI/testing/sysfs-bus-hsi driver-api/hsi drivers/hsi/
include/linux/hsi/ include/uapi/linux/hsi/

HSO 3G MODEM DRIVER

Mailing list

linux-usb@vger.kernel.org

Status

Orphan

Files

drivers/net/usb/hso.c

HSR NETWORK PROTOCOL

Mailing list

netdev@vger.kernel.org

Status

Orphan

Files

net/hsr/

HT16K33 LED CONTROLLER DRIVER

Mail

Robin van der Gracht <robin@protonic.nl>

Status

Maintained

Files

Documentation/devicetree/bindings/auxdisplay/holtek,ht16k33.yaml
drivers/auxdisplay/ht16k33.c

HTCPEN TOUCHSCREEN DRIVER

Mail

Pau Oliva Fora <pof@eslack.org>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/input/touchscreen/htcpen.c

HTE SUBSYSTEM

Mail

Dipen Patel <dipenp@nvidia.com>

Mailing list

timestamp@lists.linux.dev

Status

Maintained

Patchwork

<https://patchwork.kernel.org/project/timestamp/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/pateldipen1984/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/pateldipen1984/linux.git)

Files

Documentation/devicetree/bindings/timestamp/ Documentation/
driver-api/hte/ drivers/hte/ include/linux/hte.h

HTS221 TEMPERATURE-HUMIDITY IIO DRIVER

Mail

Lorenzo Bianconi <lorenzo@kernel.org>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Web-page

<http://www.st.com/>

Files

Documentation/devicetree/bindings/iio/humidity/st,hts221.yaml
drivers/iio/humidity/hts221*

HUAWEI ETHERNET DRIVER

Mail

Cai Huoqing <cai.huoqing@linux.dev>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

networking/device_drivers/ethernet/huawei/hinic drivers/net/ethernet/
huawei/hinic/

HUGETLB SUBSYSTEM

Mail

Muchun Song <muchun.song@linux.dev>

Mailing list

linux-mm@kvack.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-kernel-mm-hugepages admin-
guide/mm/hugetlbpage mm/hugetlbfs_reserv mm/vmemmap_dedup fs/
hugetlbfs/ include/linux/hugetlb.h mm/hugetlb.c mm/hugetlb_vmemmap.
c mm/hugetlb_vmemmap.h tools/testing/selftests/cgroup/
test_hugetlb_memcg.c

HVA ST MEDIA DRIVER

Mail

Jean-Christophe Troitin <jean-christophe.troitin@foss.st.com>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/platform/st/sti/hva

HWPOISON MEMORY FAILURE HANDLING

Mail

Miaohe Lin <linmiaohe@huawei.com>

Reviewer

Naoya Horiguchi <naoya.horiguchi@nec.com>

Mailing list

linux-mm@kvack.org

Status

Maintained

Files

mm/hwpoison-inject.c mm/memory-failure.c

HYCON HY46XX TOUCHSCREEN SUPPORT

Mail

Giulio Benetti <giulio.benetti@benettiengineering.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/input/touchscreen/hycon,hy46xx.
yaml drivers/input/touchscreen/hycon-hy46xx.c

HYGON PROCESSOR SUPPORT

Mail

Pu Wen <puwen@hygon.cn>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

arch/x86/kernel/cpu/hygon.c

HYNIX HI556 SENSOR DRIVER

Mail

Sakari Ailus <sakari.ailus@linux.intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/i2c/hi556.c

HYNIX HI846 SENSOR DRIVER

Mail

Martin Kepplinger <martin.kepplinger@puri.sm>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/i2c/hi846.c

HYNIX HI847 SENSOR DRIVER

Mail

Sakari Ailus <sakari.ailus@linux.intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/i2c/hi847.c

Hyper-V/Azure CORE AND DRIVERS

Mail

"K. Y. Srinivasan" <kys@microsoft.com>, Haiyang Zhang
<haiyangz@microsoft.com>, Wei Liu <wei.liu@kernel.org>, Dexuan Cui
<decui@microsoft.com>

Mailing list

linux-hyperv@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/hyperv/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/hyperv/linux.git)

Files

Documentation/ABI/stable/sysfs-bus-vmbus Documentation/ABI/testing/debugfs-hyperv Documentation/devicetree/bindings/bus/microsoft,vmbus.yaml networking/device_drivers/ethernet/microsoft/netvsc
Documentation/virt/hyperv arch/arm64/hyperv arch/arm64/include/asm/hyperv-tlfs.h arch/arm64/include/asm/mshyperv.h arch/x86/hyperv
arch/x86/include/asm/hyperv-tlfs.h arch/x86/include/asm/mshyperv.h arch/x86/include/asm/trace/hyperv.h arch/x86/kernel/cpu/mshyperv.c
c drivers/clocksource/hyperv_timer.c drivers/hid/hid-hyperv.c
drivers/hv/ drivers/input/serio/hyperv-keyboard.c drivers/iommu/hyperv-iommu.c drivers/net/ethernet/microsoft/
drivers/net/hyperv/
drivers/pci/controller/pci-hyperv-intf.c drivers/pci/controller/pci-hyperv.c drivers/scsi/storvsc_drv.c drivers/uio/uio_hv_generic.c
drivers/video/fbdev/hyperv_fb.c include/asm-generic/hyperv-tlfs.h include/asm-generic/mshyperv.h include/clocksource/hyperv_timer.h
include/linux/hyperv.h include/net/mana include/uapi/linux/hyperv.h
net/vmw_vsock/hyperv_transport.c tools/hv/

HYPERBUS SUPPORT**Mail**

Vignesh Raghavendra <vigneshr@ti.com>

Reviewer

Tudor Ambarus <tudor.ambarus@linaro.org>

Mailing list

linux-mtd@lists.infradead.org

Status

Supported

Patchwork

<http://patchwork.ozlabs.org/project/linux-mtd/list/>

chat

<irc://irc.oftc.net/mtd>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/mtd/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/mtd/linux.git) cfi/next

Files

Documentation/devicetree/bindings/mtd/ti,am654-hbmc.yaml drivers/mtd/hyperbus/ include/linux/mtd/hyperbus.h

HYPERVISOR VIRTUAL CONSOLE DRIVER

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Odd Fixes

Files

drivers/tty/hvc/

I2C ACPI SUPPORT

Mail

Mika Westerberg <mika.westerberg@linux.intel.com>

Mailing list

linux-i2c@vger.kernel.org, linux-acpi@vger.kernel.org

Status

Maintained

Files

drivers/i2c/i2c-core-acpi.c

I2C ADDRESS TRANSLATOR (ATR)

Mail

Tomi Valkeinen <tomi.valkeinen@ideasonboard.com>

Reviewer

Luca Ceresoli <luca.ceresoli@bootlin.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

drivers/i2c/i2c-atr.c include/linux/i2c-atr.h

I2C CONTROLLER DRIVER FOR NVIDIA GPU

Mail

Ajay Gupta <ajayg@nvidia.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

i2c/busses/i2c-nvidia-gpu drivers/i2c/busses/i2c-nvidia-gpu.c

I2C MUXES

Mail

Peter Rosin <peda@axentia.se>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/i2c/i2c-arb* Documentation/
devicetree/bindings/i2c/i2c-gate* Documentation/devicetree/bindings/
i2c/i2c-mux* i2c/i2c-topology Documentation/i2c/muxes/ drivers/i2c/
i2c-mux.c drivers/i2c/muxes/ include/linux/i2c-mux.h

I2C MV64XXX MARVELL AND ALLWINNER DRIVER

Mail

Gregory CLEMENT <gregory.clement@bootlin.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/i2c/marvell,mv64xxx-i2c.yaml
drivers/i2c/busses/i2c-mv64xxx.c

I2C OVER PARALLEL PORT

Mail

Jean Delvare <jdelvare@suse.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

i2c/busses/i2c-parport drivers/i2c/busses/i2c-parport.c

I2C SUBSYSTEM

Mail

Wolfram Sang <wsa+renesas@sang-engineering.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Web-page

<https://i2c.wiki.kernel.org/>

Patchwork

<https://patchwork.ozlabs.org/project/linux-i2c/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/wsa/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/wsa/linux.git)

Files

Documentation/devicetree/bindings/i2c/i2c.txt Documentation/i2c/
drivers/i2c/* include/dt-bindings/i2c/i2c.h include/linux/i2c-dev.h
include/linux/i2c-smbus.h include/linux/i2c.h include/uapi/linux/
i2c-*.h include/uapi/linux/i2c.h

I2C SUBSYSTEM HOST DRIVERS

Mail

Andi Shyti <andi.shyti@kernel.org>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Web-page

<https://i2c.wiki.kernel.org/>

Patchwork

<https://patchwork.ozlabs.org/project/linux-i2c/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/andi.shyti/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/andi.shyti/linux.git)

Files

Documentation/devicetree/bindings/i2c/ drivers/i2c/algos/ drivers/
i2c/busses/ include/dt-bindings/i2c/

I2C-TAOS-EVM DRIVER

Mail

Jean Delvare <jdelvare@suse.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

i2c/busses/i2c-taos-evm drivers/i2c/busses/i2c-taos-evm.c

I2C-TINY-USB DRIVER

Mail

Till Harbaum <till@harbaum.org>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Web-page

http://www.harbaum.org/till/i2c_tiny_usb

Files

drivers/i2c/busses/i2c-tiny-usb.c

I2C/SMBUS CONTROLLER DRIVERS FOR PC

Mail

Jean Delvare <jdelvare@suse.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

i2c/busses/i2c-ali1535 i2c/busses/i2c-ali1563 i2c/busses/i2c-ali15x3
i2c/busses/i2c-amd756 i2c/busses/i2c-amd8111 i2c/busses/i2c-i801
i2c/busses/i2c-nforce2 i2c/busses/i2c-piix4 i2c/busses/i2c-sis5595 i2c/busses/i2c-
sis630 i2c/busses/i2c-sis96x i2c/busses/i2c-via i2c/busses/i2c-viapro drivers/
i2c/busses/i2c-ali1535.c drivers/i2c/busses/i2c-ali1563.c drivers/
i2c/busses/i2c-ali15x3.c drivers/i2c/busses/i2c-amd756-s4882.c
drivers/i2c/busses/i2c-amd756.c drivers/i2c/busses/i2c-amd8111.c
drivers/i2c/busses/i2c-i801.c drivers/i2c/busses/i2c-isch.c drivers/
i2c/busses/i2c-nforce2-s4985.c drivers/i2c/busses/i2c-nforce2.c
drivers/i2c/busses/i2c-piix4.c drivers/i2c/busses/i2c-sis5595.c
drivers/i2c/busses/i2c-sis630.c drivers/i2c/busses/i2c-sis96x.c
drivers/i2c/busses/i2c-via.c drivers/i2c/busses/i2c-viapro.c

I2C/SMBUS INTEL CHT WHISKEY COVE PMIC DRIVER

Mail

Hans de Goede <hdegoede@redhat.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

drivers/i2c/busses/i2c-cht-wc.c

I2C/SMBUS ISMT DRIVER

Mail

Seth Heasley <seth.heasley@intel.com>, Neil Horman <nhorman@tuxdriver.com>

Mailing list

linux-i2c@vger.kernel.org

Files

i2c/busses/i2c-ismt drivers/i2c/busses/i2c-ismt.c

I2C/SMBUS STUB DRIVER

Mail

Jean Delvare <jdelvare@suse.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

drivers/i2c/i2c-stub.c

I3C DRIVER FOR ASPEED AST2600

Mail

Jeremy Kerr <jk@codeconstruct.com.au>

Status

Maintained

Files

Documentation/devicetree/bindings/i3c/aspeed,ast2600-i3c.yaml
drivers/i3c/master/ast2600-i3c-master.c

I3C DRIVER FOR CADENCE I3C MASTER IP

Mail

Przemysław Gaj <pgaj@cadence.com>

Status

Maintained

Files

Documentation/devicetree/bindings/i3c/cdns,i3c-master.yaml drivers/
i3c/master/i3c-master-cdns.c

I3C DRIVER FOR SYNOPSYS DESIGNWARE

Status

Orphan

Files

Documentation/devicetree/bindings/i3c/snps,dw-i3c-master.yaml
drivers/i3c/master/dw*

I3C SUBSYSTEM

Mail

Alexandre Belloni <alexandre.belloni@bootlin.com>

Mailing list

linux-i3c@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

chat

<irc://chat.freenode.net/linux-i3c>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/i3c/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/i3c/linux.git)

Files

Documentation/ABI/testing/sysfs-bus-i3c Documentation/devicetree/
bindings/i3c/ Documentation/driver-api/i3c drivers/i3c/ include/
linux/i3c/

IBM Operation Panel Input Driver

Mail

Eddie James <ejames@linux.ibm.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/input/ibm,op-panel.yaml drivers/
input/misc/ibm-panel.c

IBM Power 842 compression accelerator**Mail**

Haren Myneni <haren@us.ibm.com>

Status

Supported

Files

crypto/842.c drivers/crypto/nx/Kconfig drivers/crypto/nx/Makefile
drivers/crypto/nx/nx-842* include/linux/sw842.h lib/842/

IBM Power in-Nest Crypto Acceleration**Mail**

Breno Leitão <leitao@debian.org>, Nayna Jain <nayna@linux.ibm.com>, Paulo
Flabiano Smorigo <pfsmorigo@gmail.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Supported

Files

drivers/crypto/nx/Kconfig drivers/crypto/nx/Makefile drivers/crypto/
nx/nx-aes* drivers/crypto/nx/nx-sha* drivers/crypto/nx/nx.* drivers/
crypto/nx/nx_csbcpb.h drivers/crypto/nx/nx_debugfs.c

IBM Power IO DLPAR Driver for RPA-compliant PPC64 platform**Mail**

Tyrel Datwyler <tyreld@linux.ibm.com>

Mailing list

linux-pci@vger.kernel.org, linuxppc-dev@lists.ozlabs.org

Status

Supported

Files

drivers/pci/hotplug/rpadlpar*

IBM Power Linux RAID adapter

Mail

Brian King <brking@us.ibm.com>

Status

Supported

Files

drivers/scsi/ipr.*

IBM Power PCI Hotplug Driver for RPA-compliant PPC64 platform

Mail

Tyrel Datwyler <tyreld@linux.ibm.com>

Mailing list

linux-pci@vger.kernel.org, linuxppc-dev@lists.ozlabs.org

Status

Supported

Files

drivers/pci/hotplug/rpaphp*

IBM Power SRIOV Virtual NIC Device Driver

Mail

Haren Myneni <haren@linux.ibm.com>, Rick Lindsley <rick-lind@linux.ibm.com>

Reviewer

Nick Child <nnac123@linux.ibm.com>, Thomas Falcon <tlfalcon@linux.ibm.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/ethernet/ibm/ibmvnic.*

IBM Power VFIO Support

Mail

Timothy Pearson <tpearson@raptorengineering.com>

Status

Supported

Files

drivers/vfio/vfio_iommu_spapr_tce.c

IBM Power Virtual Ethernet Device Driver

Mail

Nick Child <nnac123@linux.ibm.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/ethernet/ibm/ibmveth.*

IBM Power Virtual FC Device Drivers

Mail

Tyrel Datwyler <tyreld@linux.ibm.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Files

drivers/scsi/ibmvscsi/ibmvfc*

IBM Power Virtual Management Channel Driver

Mail

Brad Warrum <bwarrum@linux.ibm.com>, Ritu Agarwal <rituagar@linux.ibm.com>

Status

Supported

Files

drivers/misc/ibmvmc.*

IBM Power Virtual SCSI Device Drivers

Mail

Tyrel Datwyler <tyreld@linux.ibm.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Files

drivers/scsi/ibmvscsi/ibmvscsi* include/scsi/viosrp.h

IBM Power Virtual SCSI Device Target Driver

Mail

Tyrel Datwyler <tyreld@linux.ibm.com>

Mailing list

linux-scsi@vger.kernel.org, target-devel@vger.kernel.org

Status

Supported

Files

`drivers/scsi/ibmvscsi_tgt/`

IBM Power VMX Cryptographic instructions

Mail

Breno Leitão <leitao@debian.org>, Nayna Jain <nayna@linux.ibm.com>, Paulo Flabiano Smorigo <pfsmorigo@gmail.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Supported

Files

`drivers/crypto/vmx/Kconfig` `drivers/crypto/vmx/Makefile` `drivers/crypto/vmx/aes*` `drivers/crypto/vmx/ghash*` `drivers/crypto/vmx/ppc-xlate.pl` `drivers/crypto/vmx/vmx.c`

IBM ServeRAID RAID DRIVER

Status

Orphan

Files

`drivers/scsi/ips.*`

ICH LPC AND GPIO DRIVER

Mail

Peter Tyser <ptyser@xes-inc.com>

Status

Maintained

Files

`drivers/gpio/gpio-ich.c` `drivers/mfd/lpc_ich.c`

ICY I2C DRIVER

Mail

Max Staudt <max@enpas.org>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

drivers/i2c/busses/i2c-icy.c

IDEAPAD LAPTOP EXTRAS DRIVER

Mail

Ike Panhc <ike.pan@canonical.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Web-page

<http://launchpad.net/ideapad-laptop>

Files

drivers/platform/x86/ideapad-laptop.c

IDEAPAD LAPTOP SLIDEBAR DRIVER

Mail

Andrey Moiseev <o2g.org.ru@gmail.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Web-page

<https://github.com/o2genum/ideapad-slidebar>

Files

drivers/input/misc/ideapad_slidebar.c

IDT VersaClock 5 CLOCK DRIVER

Mail

Luca Ceresoli <luca@lucaceresoli.net>

Status

Maintained

Files

Documentation/devicetree/bindings/clock/idt,versaclock5.yaml
drivers/clk/clk-versaclock5.c

IEEE 802.15.4 SUBSYSTEM

Mail

Alexander Aring <alex.aring@gmail.com>, Stefan Schmidt <stefan@datenfreihafen.org>, Miquel Raynal <miquel.raynal@bootlin.com>

Mailing list

linux-wpan@vger.kernel.org

Status

Maintained

Web-page

<https://linux-wpan.org/>

Patchwork

<https://patchwork.kernel.org/project/linux-wpan/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/wpan/wpan.git](https://git.kernel.org/pub/scm/linux/kernel/git/wpan/wpan.git) git
[git://git.kernel.org/pub/scm/linux/kernel/git/wpan/wpan-next.git](https://git.kernel.org/pub/scm/linux/kernel/git/wpan/wpan-next.git)

Files

networking/ieee802154 drivers/net/ieee802154/ include/linux/
ieee802154.h include/linux/nl802154.h include/net/af_ieee802154.h
include/net/cfg802154.h include/net/ieee802154_netdev.h include/net/
mac802154.h include/net/nl802154.h net/ieee802154/ net/mac802154/

IFCVF VIRTIO DATA PATH ACCELERATOR

Reviewer

Zhu Lingshan <lingshan.zhu@intel.com>

Files

drivers/vdpa/ifcvf/

IFE PROTOCOL

Mail

Yotam Gigi <yotam.gi@gmail.com>, Jamal Hadi Salim <jhs@mojatatu.com>

Files

include/net/ife.h include/uapi/linux/ife.h net/ife

IGORPLUG-USB IR RECEIVER

Mail

Sean Young <sean@mess.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/rc/igorplugusb.c

IGUANAWORKS USB IR TRANSCEIVER

Mail

Sean Young <sean@mess.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/rc/iguanair.c

IIO DIGITAL POTENTIOMETER DAC

Mail

Peter Rosin <peda@axentia.se>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-bus-iio-dac-dpot-dac Documentation/
devicetree/bindings/iio/dac/dpot-dac.yaml drivers/iio/dac/dpot-dac.c

IIO ENVELOPE DETECTOR

Mail

Peter Rosin <peda@axentia.se>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-bus-iio-adc-envelope-detector
Documentation/devicetree/bindings/iio/adc/envelope-detector.yaml
drivers/iio/adc/envelope-detector.c

IIO LIGHT SENSOR GAIN-TIME-SCALE HELPERS

Mail

Matti Vaittinen <mazziesaccount@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

drivers/iio/industrialio-gts-helper.c include/linux/iio/
iio-gts-helper.h

IIO MULTIPLEXER

Mail

Peter Rosin <peda@axentia.se>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/multiplexer/io-channel-mux.
yaml drivers/iio/multiplexer/iio-mux.c

IIO SCMI BASED DRIVER

Mail

Jyoti Bhayana <jbhayana@google.com>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

drivers/iio/common/scmi_sensors/scmi_iio.c

IIO SUBSYSTEM AND DRIVERS

Mail

Jonathan Cameron <jic23@kernel.org>

Reviewer

Lars-Peter Clausen <lars@metafoo.de>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/jic23/iio.git](https://git.kernel.org/pub/scm/linux/kernel/git/jic23/iio.git)

Files

Documentation/ABI/testing/configfs-iio* Documentation/ABI/testing/
sysfs-bus-iio* Documentation/devicetree/bindings/iio/ drivers/iio/
drivers/staging/iio/ include/dt-bindings/iio/ include/linux/iio/
tools/iio/

IIO UNIT CONVERTER

Mail

Peter Rosin <peda@axentia.se>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/afe/current-sense-amplifier.
yaml Documentation/devicetree/bindings/iio/afe/current-sense-shunt.
yaml Documentation/devicetree/bindings/iio/afe/voltage-divider.yaml
drivers/iio/afe/iio-rescale.c

IKANOS/ADI EAGLE ADSL USB DRIVER

Mail

Matthieu Castet <castet.matthieu@free.fr>, Stanislaw Gruszka <stf_xl@wp.pl>

Status

Maintained

Files

drivers/usb/atm/ueagle-atm.c

IMAGIS TOUCHSCREEN DRIVER

Mail

Markuss Broks <markuss.broks@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/input/touchscreen/imagis,
ist3038c.yaml drivers/input/touchscreen/imagis.c

IMGTEC ASCII LCD DRIVER

Mail

Paul Burton <paulburton@kernel.org>

Status

Maintained

Files

Documentation/devicetree/bindings/auxdisplay/img,ascii-lcd.yaml
drivers/auxdisplay/img-ascii-lcd.c

IMGTEC IR DECODER DRIVER

Status

Orphan

Files

drivers/media/rc/img-ir/

IMGTEC POWERVR DRM DRIVER

Mail

Frank Binns <frank.binns@imgtec.com>, Donald Robson <donald.robson@imgtec.com>, Matt Coster <matt.coster@imgtec.com>

Status

Supported

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/gpu/img,powervr.yaml
Documentation/gpu/imagination/ drivers/gpu/drm/imagination/ include/
uapi/drm/pvr_drm.h

IMON SOUNDGRAPH USB IR RECEIVER

Mail

Sean Young <sean@mess.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/rc/imon.c drivers/media/rc/imon_raw.c

IMS TWINTURBO FRAMEBUFFER DRIVER

Mailing list

linux-fbdev@vger.kernel.org

Status

Orphan

Files

drivers/video/fbdev/imsttfb.c

INA209 HARDWARE MONITOR DRIVER

Mail

Guenter Roeck <linux@roeck-us.net>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/hwmon/ti,ina2xx.yaml hwmon/ina209
drivers/hwmon/ina209.c

INA2XX HARDWARE MONITOR DRIVER

Mail

Guenter Roeck <linux@roeck-us.net>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/ina2xx drivers/hwmon/ina2xx.c include/linux/platform_data/
ina2xx.h

INDEX OF FURTHER KERNEL DOCUMENTATION

Mail

Carlos Bilbao <carlos.bilbao@amd.com>

Status

Maintained

Files

[process/kernel-docs](#)

INDUSTRY PACK SUBSYSTEM (IPACK)

Mail

Vaibhav Gupta <vaibhavgupta40@gmail.com>, Jens Taprogge
<jens.taprogge@taprogge.org>, Greg Kroah-Hartman
<gregkh@linuxfoundation.org>

Mailing list

industrypack-devel@lists.sourceforge.net

Status

Maintained

Web-page

<http://industrypack.sourceforge.net>

Files

drivers/ipack/

INFINEON DPS310 Driver

Mail

Eddie James <ejames@linux.ibm.com>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

drivers/iio/pressure/dps310.c

INFINEON PEB2466 ASoC CODEC

Mail

Herve Codina <herve.codina@bootlin.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/sound/infineon,peb2466.yaml sound/
soc/codecs/peb2466.c

INFINIBAND SUBSYSTEM

Mail

Jason Gunthorpe <jgg@nvidia.com>, Leon Romanovsky <leonro@nvidia.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Supported

Web-page

<https://github.com/linux-rdma/rdma-core>

Patchwork

<http://patchwork.kernel.org/project/linux-rdma/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/rdma/rdma.git](https://git.kernel.org/pub/scm/linux/kernel/git/rdma/rdma.git)

Files

Documentation/devicetree/bindings/infiniband/ Documentation/
infiniband/ drivers/infiniband/ include/rdma/ include/trace/events/
ib_mad.h include/trace/events/ib_umad.h include/trace/misc/rdma.h
include/uapi/linux/ib_infiniband.h include/uapi/rdma/ samples/bpf/
ibumad_kern.c samples/bpf/ibumad_user.c

INGENIC JZ4780 NAND DRIVER

Mail

Harvey Hunt <harveyhuntnexus@gmail.com>

Mailing list

linux-mtd@lists.infradead.org, linux-mips@vger.kernel.org

Status

Maintained

Files

drivers/mtd/nand/raw/ingenic/

INGENIC JZ47xx SoCs

Mail

Paul Cercueil <paul@crapouillou.net>

Mailing list

linux-mips@vger.kernel.org

Status

Maintained

Files

arch/mips/boot/dts/ingenic/ arch/mips/generic/board-ingenic.c arch/
mips/include/asm/mach-ingenic/ arch/mips/ingenic/Kconfig drivers/clock/
ingenic/ drivers/dma/dma-jz4780.c drivers/gpu/drm/ingenic/ drivers/
i2c/busses/i2c-jz4780.c drivers/iio/adc/ingenic-adc.c drivers/
irqchip/irq-ingenic.c drivers/memory/jz4780-nemc.c drivers/mmc/
host/jz4740_mmc.c drivers/mtd/nand/raw/ingenic/ drivers/pinctrl/
pinctrl-ingenic.c drivers/power/supply/ingenic-battery.c drivers/
pwm/pwm-jz4740.c drivers/remoteproc/ingenic_rproc.c drivers rtc/
rtc-jz4740.c drivers/tty/serial/8250/8250_ingenic.c drivers/usb/musb/
jz4740.c drivers/watchdog/jz4740_wdt.c include/dt-bindings/iio/adc/
ingenic,adc.h include/linux/mfd/ingenic-tcu.h sound/soc/codecs/jz47*
sound/soc/jz4740/

INJOINIC IP5xxx POWER BANK IC DRIVER

Mail

Samuel Holland <samuel@sholland.org>

Status

Maintained

Files

drivers/power/supply/ip5xxx_power.c

INOTIFY

Mail

Jan Kara <jack@suse.cz>

Reviewer

Amir Goldstein <amir73il@gmail.com>

Mailing list

linux-fsdevel@vger.kernel.org

Status

Maintained

Files

filesystems/inotify fs/notify/inotify/ include/linux/inotify.h include/
uapi/linux/inotify.h

INPUT (KEYBOARD, MOUSE, JOYSTICK, TOUCHSCREEN) DRIVERS

Mail

Dmitry Torokhov <dmitry.torokhov@gmail.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Patchwork

<http://patchwork.kernel.org/project/linux-input/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/dtor/input.git](https://git.kernel.org/pub/scm/linux/kernel/git/dtor/input.git)

Files

Documentation/devicetree/bindings/input/ Documentation/devicetree/
bindings/serio/ Documentation/input/ drivers/input/ include/
dt-bindings/input/ include/linux/input.h include/linux/input/
include/uapi/linux/input-event-codes.h include/uapi/linux/input.h

INPUT MULTITOUCH (MT) PROTOCOL

Mail

Henrik Rydberg <rydberg@bitmath.org>

Mailing list

linux-input@vger.kernel.org

Status

Odd fixes

Files

input/multi-touch-protocol drivers/input/input-mt.c

Content regex

`\b(ABS|SYN)_MT_`

INSIDE SECURE CRYPTO DRIVER

Mail

Antoine Tenart <atenart@kernel.org>

Mailing list

linux-crypto@vger.kernel.org

Status

Maintained

Files

`drivers/crypto/inside-secure/`

INTEGRITY MEASUREMENT ARCHITECTURE (IMA)

Mail

Mimi Zohar <zohar@linux.ibm.com>, Roberto Sassu
<roberto.sassu@huawei.com>, Dmitry Kasatkin <dmitry.kasatkin@gmail.com>

Reviewer

Eric Snowberg <eric.snowberg@oracle.com>

Mailing list

linux-integrity@vger.kernel.org

Status

Supported

SCM

`git git://git.kernel.org/pub/scm/linux/kernel/git/zohar/linux-integrity.git`

Files

`security/integrity/ security/integrity/ima/`

INTEL 810/815 FRAMEBUFFER DRIVER

Mail

Antonino Daplas <adaplas@gmail.com>

Mailing list

linux-fbdev@vger.kernel.org

Status

Maintained

Files

`drivers/video/fbdev/i810/`

INTEL 8254 COUNTER DRIVER

Mail

William Breathitt Gray <william.gray@linaro.org>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

drivers/counter/i8254.c include/linux/i8254.h

INTEL 8255 GPIO DRIVER

Mail

William Breathitt Gray <william.gray@linaro.org>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

drivers/gpio/gpio-i8255.c drivers/gpio/gpio-i8255.h

INTEL ASoC DRIVERS

Mail

Cezary Rojewski <cezary.rojewski@intel.com>, Pierre-Louis
Bossart <pierre-louis.bossart@linux.intel.com>, Liam Gird-
wood <liam.r.girdwood@linux.intel.com>, Peter Ujfalusi <peter.ujfalusi@linux.intel.com>, Bard Liao <yung-chuan.liao@linux.intel.com>,
Ranjani Sridharan <ranjani.sridharan@linux.intel.com>, Kai Vehmanen
<kai.vehmanen@linux.intel.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Supported

Files

sound/soc/intel/

INTEL ATOMISP2 DUMMY / POWER-MANAGEMENT DRIVER

Mail

Hans de Goede <hdegoede@redhat.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/intel/atomisp2/pm.c

INTEL ATOMISP2 LED DRIVER

Mail

Hans de Goede <hdegoede@redhat.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/intel/atomisp2/led.c

INTEL BIOS SAR INT1092 DRIVER

Mail

Shravan Sudhakar <s.shravan@intel.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/intel/int1092/

INTEL BROXTON PMC DRIVER

Mail

Mika Westerberg <mika.westerberg@linux.intel.com>, Zha Qipeng
<qipeng.zha@intel.com>

Status

Maintained

Files

drivers/mfd/intel_pmc_bxt.c include/linux/mfd/intel_pmc_bxt.h

INTEL C600 SERIES SAS CONTROLLER DRIVER

Mail

Artur Paszkiewicz <artur.paszkievicz@intel.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

SCM

git [git://git.code.sf.net/p/intel-sas/iscsi](https://git.code.sf.net/p/intel-sas/iscsi)

Files

drivers/scsi/iscsi/

INTEL CPU family model numbers

Mail

Tony Luck <tony.luck@intel.com>, x86@kernel.org

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

Files

arch/x86/include/asm/intel-family.h

INTEL DRM DISPLAY FOR XE AND I915 DRIVERS

Mail

Jani Nikula <jani.nikula@linux.intel.com>, Rodrigo Vivi <rodrigo.vivi@intel.com>

Mailing list

intel-gfx@lists.freedesktop.org, intel-xe@lists.freedesktop.org

Status

Supported

Files

drivers/gpu/drm/i915/display/ drivers/gpu/drm/xe/display/ drivers/
gpu/drm/xe/compat-i915-headers

INTEL DRM I915 DRIVER (Meteor Lake, DG2 and older excluding Poulsbo, Moorestown and derivative)

Mail

Jani Nikula <jani.nikula@linux.intel.com>, Joonas Lahtinen
<joonas.lahtinen@linux.intel.com>, Rodrigo Vivi <rodrigo.vivi@intel.com>,
Tvrтко Ursulin <tursulin@ursulin.net>

Mailing list

intel-gfx@lists.freedesktop.org

Status

Supported

Web-page

<https://drm.pages.freedesktop.org/intel-docs/>

Patchwork

<http://patchwork.freedesktop.org/project/intel-gfx/>

bugs

<https://drm.pages.freedesktop.org/intel-docs/how-to-file-i915-bugs.html>

chat

<irc://irc.oftc.net/intel-gfx>

SCM

git [git://anongit.freedesktop.org/drm-intel](https://anongit.freedesktop.org/drm-intel)

Files

Documentation/ABI/testing/sysfs-driver-intel-i915-hwmon gpu/i915
drivers/gpu/drm/ci/xfails/i915* drivers/gpu/drm/i915/ include/drm/
i915* include/uapi/drm/i915_drm.h

INTEL DRM XE DRIVER (Lunar Lake and newer)

Mail

Lucas De Marchi <lucas.demarchi@intel.com>, Oded Gabbay <ogabbay@kernel.org>,
Thomas Hellström <thomas.hellstrom@linux.intel.com>

Mailing list

intel-xe@lists.freedesktop.org

Status

Supported

Web-page

<https://drm.pages.freedesktop.org/intel-docs/>

Patchwork

<http://patchwork.freedesktop.org/project/intel-xe/>

bugs

<https://gitlab.freedesktop.org/drm/xe/kernel/-/issues>

chat

<irc://irc.oftc.net/xe>

SCM

git <https://gitlab.freedesktop.org/drm/xe/kernel.git>

Files

Documentation/ABI/testing/sysfs-driver-intel-xe-hwmon Documentation/
gpu/xe/ drivers/gpu/drm/xe/ include/drm/xe* include/uapi/drm/xe_drm.h

INTEL ETHERNET DRIVERS**Mail**

Jesse Brandeburg <jesse.brandeburg@intel.com>, Tony Nguyen <anthony.l.nguyen@intel.com>

Mailing list

intel-wired-lan@lists.osuosl.org (moderated for non-subscribers)

Status

Supported

Web-page

<https://www.intel.com/content/www/us/en/support.html>

Patchwork

<https://patchwork.ozlabs.org/project/intel-wired-lan/list/>

SCM

git git://git.kernel.org/pub/scm/linux/kernel/git/tnguy/net-queue.git git
git://git.kernel.org/pub/scm/linux/kernel/git/tnguy/next-queue.git

Files

Documentation/networking/device_drivers/ethernet/intel/ drivers/
net/ethernet/intel/ drivers/net/ethernet/intel/*/ include/linux/avf/
virtchnl.h include/linux/net/intel/iidc.h

INTEL ETHERNET PROTOCOL DRIVER FOR RDMA**Mail**

Mustafa Ismail <mustafa.ismail@intel.com>, Shiraz Saleem <shiraz.saleem@intel.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Supported

Files

drivers/infiniband/hw/irdma/ include/uapi/rdma/irdma-abi.h

INTEL GPIO DRIVERS

Mail

Andy Shevchenko <andy@kernel.org>

Mailing list

linux-gpio@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/andy/linux-gpio-intel.git](https://git.kernel.org/pub/scm/linux/kernel/git/andy/linux-gpio-intel.git)

Files

`drivers/gpio/gpio-elkhartlake.c` `drivers/gpio/gpio-ich.c` `drivers/gpio/gpio-merrifield.c` `drivers/gpio/gpio-ml-ioh.c` `drivers/gpio/gpio-pch.c` `drivers/gpio/gpio-sch.c` `drivers/gpio/gpio-sodaville.c` `drivers/gpio/gpio-tangier.c` `drivers/gpio/gpio-tangier.h`

INTEL GVT-g DRIVERS (Intel GPU Virtualization)

Mail

Zhenyu Wang <zhenyuw@linux.intel.com>, Zhi Wang
<zhi.wang.linux@gmail.com>

Mailing list

intel-gvt-dev@lists.freedesktop.org, intel-gfx@lists.freedesktop.org

Status

Supported

Web-page

<https://github.com/intel/gvt-linux/wiki>

SCM

git <https://github.com/intel/gvt-linux.git>

Files

`drivers/gpu/drm/i915/gvt/`

INTEL HID EVENT DRIVER

Mail

Alex Hung <alexhung@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

`drivers/platform/x86/intel/hid.c`

INTEL I/OAT DMA DRIVER

Mail

Dave Jiang <dave.jiang@intel.com>

Reviewer

Dan Williams <dan.j.williams@intel.com>

Mailing list

dmaengine@vger.kernel.org

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/linux-dmaengine/list/>

Files

drivers/dma/ioat*

INTEL IAA CRYPTO DRIVER

Mail

Tom Zanussi <tom.zanussi@linux.intel.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Supported

Files

driver-api/crypto/iaa/iaa-crypto drivers/crypto/intel/iaa/*

INTEL IDLE DRIVER

Mail

Jacob Pan <jacob.jun.pan@linux.intel.com>, Len Brown <lenb@kernel.org>

Mailing list

linux-pm@vger.kernel.org

Status

Supported

bugs

<https://bugzilla.kernel.org>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/lenb/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/lenb/linux.git)

Files

drivers/idle/intel_idle.c

INTEL IDXD DRIVER

Mail

Fenghua Yu <fenghua.yu@intel.com>, Dave Jiang <dave.jiang@intel.com>

Mailing list

dmaengine@vger.kernel.org

Status

Supported

Files

drivers/dma/idxd/* include/uapi/linux/idxd.h

INTEL IN FIELD SCAN (IFS) DEVICE

Mail

Jithu Joseph <jithu.joseph@intel.com>

Reviewer

Ashok Raj <ashok.raj@intel.com>, Tony Luck <tony.luck@intel.com>

Status

Maintained

Files

drivers/platform/x86/intel/ifs include/trace/events/intel_ifs.h

INTEL INTEGRATED SENSOR HUB DRIVER

Mail

Srinivas Pandruvada <srinivas.pandruvada@linux.intel.com>, Jiri Kosina
<jikos@kernel.org>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/hid/intel-ish-hid/

INTEL IOMMU (VT-d)

Mail

David Woodhouse <dwmw2@infradead.org>, Lu Baolu
<baolu.lu@linux.intel.com>

Mailing list

iommu@lists.linux.dev

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/joro/iommu.git](https://git.kernel.org/pub/scm/linux/kernel/git/joro/iommu.git)

Files

[drivers/iommu/intel/](#)

INTEL IPU3 CSI-2 CIO2 DRIVER**Mail**

Yong Zhi <yong.zhi@intel.com>, Sakari Ailus <sakari.ailus@linux.intel.com>, Bingbu Cao <bingbu.cao@intel.com>, Dan Scally <djrscally@gmail.com>

Reviewer

Tianshu Qiu <tian.shu.qiu@intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linxxtv.org/media_tree.git](https://linxxtv.org/media_tree.git)

Files

[userspace-api/media/v4l/pixfmt-srggb10-ipu3](#) [drivers/media/pci/intel/ipu3/](#)

INTEL IPU3 CSI-2 IMGU DRIVER**Mail**

Sakari Ailus <sakari.ailus@linux.intel.com>

Reviewer

Bingbu Cao <bingbu.cao@intel.com>, Tianshu Qiu <tian.shu.qiu@intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

[admin-guide/media/ipu3](#) [Documentation/admin-guide/media/ipu3_rcb.svg](#)
[userspace-api/media/v4l/metafmt-intel-ipu3](#) [drivers/staging/media/ipu3/](#)

INTEL ISHTP ECLITE DRIVER**Mail**

Sumesh K Naduvalath <sumesh.k.naduvalath@intel.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Supported

Files

drivers/platform/x86/intel/ishtp_eclite.c

INTEL IXP4XX CRYPTO SUPPORT

Mail

Corentin Labbe <clabbe@baylibre.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Maintained

Files

drivers/crypto/intel/ixp4xx/ixp4xx_crypto.c

INTEL KEEM BAY DRM DRIVER

Mail

Anitha Chrisanthus <anitha.chrisanthus@intel.com>, Edmund Dea <edmund.j.dea@intel.com>

Status

Maintained

Files

Documentation/devicetree/bindings/display/intel,keembay-display.
yaml drivers/gpu/drm/kmb/

INTEL KEEM BAY OCS AES/SM4 CRYPTO DRIVER

Mail

Daniele Alessandrelli <daniele.alessandrelli@intel.com>

Status

Maintained

Files

Documentation/devicetree/bindings/crypto/intel,keembay-ocs-aes.yaml
drivers/crypto/intel/keembay/Kconfig drivers/crypto/intel/keembay/
Makefile drivers/crypto/intel/keembay/keembay-ocs-aes-core.c drivers/
crypto/intel/keembay/ocs-aes.c drivers/crypto/intel/keembay/ocs-aes.
h

INTEL KEEM BAY OCS ECC CRYPTO DRIVER

Mail

Daniele Alessandrelli <daniele.alessandrelli@intel.com>, Prabhjot Khurana <prabhjot.khurana@intel.com>, Mark Gross <mgross@linux.intel.com>

Status

Maintained

Files

Documentation/devicetree/bindings/crypto/intel,keembay-ocs-ecc.yaml
drivers/crypto/intel/keembay/Kconfig drivers/crypto/intel/keembay/
Makefile drivers/crypto/intel/keembay/keembay-ocs-ecc.c

INTEL KEEM BAY OCS HCU CRYPTO DRIVER

Mail

Daniele Alessandrelli <daniele.alessandrelli@intel.com>, Declan Murphy <declan.murphy@intel.com>

Status

Maintained

Files

Documentation/devicetree/bindings/crypto/intel,keembay-ocs-hcu.yaml
drivers/crypto/intel/keembay/Kconfig drivers/crypto/intel/keembay/
Makefile drivers/crypto/intel/keembay/keembay-ocs-hcu-core.c drivers/
crypto/intel/keembay/ocs-hcu.c drivers/crypto/intel/keembay/ocs-hcu.
h

INTEL MANAGEMENT ENGINE (mei)

Mail

Tomas Winkler <tomas.winkler@intel.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

Files

Documentation/driver-api/mei/* drivers/misc/mei/ drivers/watchdog/
mei_wdt.c include/linux/mei_aux.h include/linux/mei_cl_bus.h include/
uapi/linux/mei.h include/uapi/linux/mei_uuid.h include/uapi/linux/
uuid.h samples/mei/*

INTEL MAX 10 BMC MFD DRIVER

Mail

Xu Yilun <yilun.xu@intel.com>

Reviewer

Tom Rix <trix@redhat.com>

Status

Maintained

Files

Documentation/ABI/testing/sysfs-driver-intel-m10-bmc hwmon/intel-m10-bmc-hwmon drivers/hwmon/intel-m10-bmc-hwmon.c drivers/mfd/intel-m10-bmc* include/linux/mfd/intel-m10-bmc.h

INTEL MAX10 BMC SECURE UPDATES

Mail

Peter Colberg <peter.colberg@intel.com>

Mailing list

linux-fpga@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-driver-intel-m10-bmc-sec-update
drivers/fpga/intel-m10-bmc-sec-update.c

INTEL P-Unit IPC DRIVER

Mail

Zha Qipeng <qipeng.zha@intel.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

arch/x86/include/asm/intel_punit_ipc.h drivers/platform/x86/intel/punit_ipc.c

INTEL PMC CORE DRIVER

Mail

Rajneesh Bhardwaj <irenic.rajneesh@gmail.com>, David E Box
<david.e.box@intel.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-platform-intel-pmc drivers/platform/
x86/intel/pmc/

INTEL PMIC GPIO DRIVERS

Mail

Andy Shevchenko <andy@kernel.org>

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/andy/linux-gpio-intel.git](https://git.kernel.org/pub/scm/linux/kernel/git/andy/linux-gpio-intel.git)

Files

drivers/gpio/gpio-*cove.c

INTEL PMIC MULTIFUNCTION DEVICE DRIVERS

Mail

Andy Shevchenko <andy@kernel.org>

Status

Supported

Files

drivers/mfd/intel_soc_pmic* include/linux/mfd/intel_soc_pmic*

INTEL PMT DRIVERS

Mail

David E. Box <david.e.box@linux.intel.com>

Status

Supported

Files

drivers/platform/x86/intel/pmt/

INTEL PRO/WIRELESS 2100, 2200BG, 2915ABG NETWORK CONNECTION SUPPORT

Mail

Stanislav Yakovlev <stas.yakovlev@gmail.com>

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

Files

networking/device_drivers/wifi/intel/ipw2100 network-
ing/device_drivers/wifi/intel/ipw2200 drivers/net/wireless/intel/ipw2x00/

INTEL PSTATE DRIVER

Mail

Srinivas Pandruvada <srinivas.pandruvada@linux.intel.com>, Len Brown
<lenb@kernel.org>

Mailing list

linux-pm@vger.kernel.org

Status

Supported

Files

drivers/cpufreq/intel_pstate.c

INTEL PTP DFL ToD DRIVER

Mail

Tianfei Zhang <tianfei.zhang@intel.com>

Mailing list

linux-fpga@vger.kernel.org, netdev@vger.kernel.org

Status

Maintained

Files

drivers/ptp/ptp_dfl_tod.c

INTEL QUADRATURE ENCODER PERIPHERAL DRIVER

Mail

Jarkko Nikula <jarkko.nikula@linux.intel.com>

Mailing list

linux-iio@vger.kernel.org

Files

drivers/counter/intel-qep.c

INTEL SCU DRIVERS

Mail

Mika Westerberg <mika.westerberg@linux.intel.com>

Status

Maintained

Files

arch/x86/include/asm/intel_scu_ipc.h drivers/platform/x86/
intel_scu_*

INTEL SDSI DRIVER

Mail

David E. Box <david.e.box@linux.intel.com>

Status

Supported

Files

drivers/platform/x86/intel/sdsi.c tools/arch/x86/intel_sdsi/ tools/
testing/selftests/drivers/sdsi/

INTEL SGX

Mail

Jarkko Sakkinen <jarkko@kernel.org>

Reviewer

Dave Hansen <dave.hansen@linux.intel.com>

Mailing list

linux-sgx@vger.kernel.org

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/intel-sgx/list/>

SCM

git git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git x86/sgx

Files

arch/x86/sgx arch/x86/entry/vdso/vsgx.S arch/x86/include/asm/sgx.h
arch/x86/include/uapi/asm/sgx.h arch/x86/kernel/cpu/sgx/* tools/
testing/selftests/sgx/*

Content regex

\bSGX_

INTEL SKYLAKE INT3472 ACPI DEVICE DRIVER

Mail

Daniel Scally <djrscally@gmail.com>

Status

Maintained

Files

drivers/platform/x86/intel/int3472/

INTEL SPEED SELECT TECHNOLOGY

Mail

Srinivas Pandruvada <srinivas.pandruvada@linux.intel.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/intel/speed_select_if/ include/uapi/linux/
isst_if.h tools/power/x86/intel-speed-select/

INTEL STRATIX10 FIRMWARE DRIVERS

Mail

Dinh Nguyen <dinguyen@kernel.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/dinguyen/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/dinguyen/linux.git)

Files

Documentation/ABI/testing/sysfs-devices-platform-stratix10-rsu
Documentation/devicetree/bindings/firmware/intel, stratix10-svc.txt
drivers/firmware/stratix10-rsu.c drivers/firmware/stratix10-svc.c
include/linux/firmware/intel/stratix10-smc.h include/linux/firmware/
intel/stratix10-svc-client.h

INTEL TELEMETRY DRIVER

Mail

Rajneesh Bhardwaj <irenic.rajneesh@gmail.com>, "David E. Box"
<david.e.box@linux.intel.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

arch/x86/include/asm/intel_telemetry.h drivers/platform/x86/intel/
telemetry/

INTEL TPMI DRIVER

Mail

Srinivas Pandruvada <srinivas.pandruvada@linux.intel.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/debugfs-tpmi drivers/platform/x86/intel/
tpmi.c include/linux/intel_tpmi.h

INTEL UNCORE FREQUENCY CONTROL

Mail

Srinivas Pandruvada <srinivas.pandruvada@linux.intel.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

admin-guide/pm/intel_uncore_frequency_scaling drivers/platform/x86/
intel/uncore-frequency/

INTEL VENDOR SPECIFIC EXTENDED CAPABILITIES DRIVER

Mail

David E. Box <david.e.box@linux.intel.com>

Status

Supported

Files

drivers/platform/x86/intel/vsec.*

INTEL VIRTUAL BUTTON DRIVER

Mail

AceLan Kao <acelan.kao@canonical.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/intel/vbtn.c

INTEL WIRELESS 3945ABG/BG, 4965AGN (iwlegacy)

Mail

Stanislaw Gruszka <stf_xl@wp.pl>

Mailing list

linux-wireless@vger.kernel.org

Status

Supported

Files

drivers/net/wireless/intel/iwlegacy/

INTEL WIRELESS WIFI LINK (iwlwifi)

Mail

Miri Korenblit <miriam.rachel.korenblit@intel.com>

Mailing list

linux-wireless@vger.kernel.org

Status

Supported

Web-page

<https://wireless.wiki.kernel.org/en/users/drivers/iwlwifi>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/iwlwifi/iwlwifi.git](https://git.kernel.org/pub/scm/linux/kernel/git/iwlwifi/iwlwifi.git)

Files

drivers/net/wireless/intel/iwlwifi/

INTEL WMI SLIM BOOTLOADER (SBL) FIRMWARE UPDATE DRIVER**Mail**

Jithu Joseph <jithu.joseph@intel.com>

Status

Maintained

Web-page

<https://slimbootloader.github.io/security/firmware-update.html>

Files

drivers/platform/x86/intel/wmi/sbl-fw-update.c

INTEL WMI THUNDERBOLT FORCE POWER DRIVER**Mailing list**

Dell.Client.Kernel@dell.com

Status

Maintained

Files

drivers/platform/x86/intel/wmi/thunderbolt.c

INTEL WWAN IOSM DRIVER**Mail**

M Chetan Kumar <m.chetan.kumar@intel.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/wwan/iosm/

INTEL(R) TRACE HUB**Mail**

Alexander Shishkin <alexander.shishkin@linux.intel.com>

Status

Supported

Files

trace/intel_th drivers/hwtracing/intel_th/ include/linux/intel_th.h

INTEL(R) TRUSTED EXECUTION TECHNOLOGY (TXT)

Mail

Ning Sun <ning.sun@intel.com>

Mailing list

tboot-devel@lists.sourceforge.net

Status

Supported

Web-page

<http://tboot.sourceforge.net>

SCM

hg <http://tboot.hg.sourceforge.net:8000/hgroot/tboot/tboot>

Files

arch/x86/intel_txt arch/x86/kernel/tboot.c include/linux/tboot.h

INTERCONNECT API

Mail

Georgi Djakov <djakov@kernel.org>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/djakov/icc.git](https://git.kernel.org/pub/scm/linux/kernel/git/djakov/icc.git)

Files

Documentation/devicetree/bindings/interconnect/ driver-api/interconnect
drivers/interconnect/ include/dt-bindings/interconnect/ include/
linux/interconnect-provider.h include/linux/interconnect.h

INTERRUPT COUNTER DRIVER

Mail

Oleksij Rempel <o.rempel@pengutronix.de>

Reviewer

Pengutronix Kernel Team <kernel@pengutronix.de>

Mailing list

linux-iio@vger.kernel.org

Files

Documentation/devicetree/bindings/counter/interrupt-counter.yaml
drivers/counter/interrupt-cnt.c

INTERSIL ISL7998X VIDEO DECODER DRIVER

Mail

Michael Tretter <m.tretter@pengutronix.de>

Reviewer

Pengutronix Kernel Team <kernel@pengutronix.de>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/i2c/isil,isl79987.yaml
drivers/media/i2c/isl7998x.c

INVENSENSE ICM-426xx IMU DRIVER

Mail

Jean-Baptiste Maneyrol <jmaneyrol@invensense.com>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Web-page

<https://invensense.tdk.com/>

Files

Documentation/devicetree/bindings/iio/imu/invensense,icm42600.yaml
drivers/iio/imu/inv_icm42600/

INVENSENSE MPU-3050 GYROSCOPE DRIVER

Mail

Linus Walleij <linus.walleij@linaro.org>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/gyroscope/invensense,mpu3050.
yaml drivers/iio/gyro/mpu3050*

IOC3 ETHERNET DRIVER

Mail

Ralf Baechle <ralf@linux-mips.org>

Mailing list

linux-mips@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/sgi/ioc3-eth.c

IOMMU DMA-API LAYER

Mail

Robin Murphy <robin.murphy@arm.com>

Mailing list

iommu@lists.linux.dev

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/joro/iommu.git](https://git.kernel.org/pub/scm/linux/kernel/git/joro/iommu.git)

Files

drivers/iommu/dma-iommu.c drivers/iommu/dma-iommu.h drivers/iommu/
iova.c include/linux/iova.h

IOMMU SUBSYSTEM

Mail

Joerg Roedel <joro@8bytes.org>, Will Deacon <will@kernel.org>

Reviewer

Robin Murphy <robin.murphy@arm.com>

Mailing list

iommu@lists.linux.dev

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/joro/iommu.git](https://git.kernel.org/pub/scm/linux/kernel/git/joro/iommu.git)

Files

Documentation/devicetree/bindings/iommu/ userspace-api/iommu drivers/
iommu/ include/linux/iommu.h include/linux/iova.h include/linux/
of_iommu.h include/uapi/linux/iommu.h

IOMMUFD

Mail

Jason Gunthorpe <jgg@nvidia.com>, Kevin Tian <kevin.tian@intel.com>

Mailing list

iommu@lists.linux.dev

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/jgg/iommufd.git](https://git.kernel.org/pub/scm/linux/kernel/git/jgg/iommufd.git)

Files

userspace-api/iommufd drivers/iommu/iommufd/ include/linux/iommufd.h
include/uapi/linux/iommufd.h tools/testing/selftests/iommu/

IOSYS-MAP HELPERS

Mail

Thomas Zimmermann <tzimmermann@suse.de>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

include/linux/iosys-map.h

IO_URING

Mail

Jens Axboe <axboe@kernel.dk>

Reviewer

Pavel Begunkov <asml.silence@gmail.com>

Mailing list

io-uring@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.dk/linux-block](https://git.kernel.dk/linux-block) git [git://git.kernel.dk/liburing](https://git.kernel.dk/liburing)

Files

include/linux/io_uring/ include/linux/io_uring.h include/linux/
io_uring_types.h include/trace/events/io_uring.h include/uapi/linux/
io_uring.h io_uring/

IPMI SUBSYSTEM

Mail

Corey Minyard <minyard@acm.org>

Mailing list

openipmi-developer@lists.sourceforge.net (moderated for non-subscribers)

Status

Supported

Web-page

<http://openipmi.sourceforge.net/>

SCM

git <https://github.com/cminyard/linux-ipmi.git> for-next

Files

Documentation/devicetree/bindings/ipmi/ driver-api/ipmi drivers/char/
ipmi/ include/linux/ipmi* include/uapi/linux/ipmi*

IPS SCSI RAID DRIVER

Mail

Adaptec OEM Raid Solutions <aacraid@microsemi.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Maintained

Web-page

<http://www.adaptec.com/>

Files

drivers/scsi/ips*

IPVS

Mail

Simon Horman <horms@verge.net.au>, Julian Anastasov <ja@ssi.bg>

Mailing list

netdev@vger.kernel.org, lvs-devel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/horms/ipvs-next.git](https://git.kernel.org/pub/scm/linux/kernel/git/horms/ipvs-next.git) git
[git://git.kernel.org/pub/scm/linux/kernel/git/horms/ipvs.git](https://git.kernel.org/pub/scm/linux/kernel/git/horms/ipvs.git)

Files

networking/ipvs-sysctl include/net/ip_vs.h include/uapi/linux/ip_vs.h
net/netfilter/ipvs/

IPWIRELESS DRIVER

Mail

Jiri Kosina <jikos@kernel.org>, David Sterba <dsterba@suse.com>

Status

Odd Fixes

Files

drivers/tty/ipwireless/

IRON DEVICE AUDIO CODEC DRIVERS

Mail

Kiseok Jo <kiseok.jo@irondevice.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/sound/irondevice,* sound/soc/
codecs/sma*

IRQ DOMAINS (IRQ NUMBER MAPPING LIBRARY)

Mail

Thomas Gleixner <tglx@linutronix.de>

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git](https://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git) irq/core

Files

core-api/irq/irq-domain include/linux/irqdomain.h kernel/irq/irqdomain.c
kernel/irq/msi.c

IRQ SUBSYSTEM

Mail

Thomas Gleixner <tglx@linutronix.de>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git](https://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git) irq/core

Files

include/linux/group_cpus.h kernel/irq/ lib/group_cpus.c

IRQCHIP DRIVERS

Mail

Thomas Gleixner <tglx@linutronix.de>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git](https://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git) irq/core

Files

Documentation/devicetree/bindings/interrupt-controller/ drivers/
irqchip/

ISA

Mail

William Breathitt Gray <william.gray@linaro.org>

Status

Maintained

Files

driver-api/isa drivers/base/isa.c include/linux/isa.h

ISA RADIO MODULE

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/radio/radio-isa*

ISAPNP

Mail

Jaroslav Kysela <perex@perex.cz>

Status

Maintained

Files

userspace-api/isapnp drivers/pnp/isapnp/ include/linux/isapnp.h

ISCSI

Mail

Lee Duncan <lduncan@suse.com>, Chris Leech <cleech@redhat.com>, Mike Christie <michael.christie@oracle.com>

Mailing list

open-iscsi@googlegroups.com, linux-scsi@vger.kernel.org

Status

Maintained

Web-page

www.open-iscsi.com

Files

drivers/scsi/*iscsi* include/scsi/*iscsi*

iSCSI BOOT FIRMWARE TABLE (iBFT) DRIVER

Mail

Peter Jones <pjones@redhat.com>, Konrad Rzeszutek Wilk <konrad@kernel.org>

Status

Maintained

Files

drivers/firmware/iscsi_ibft*

ISCSI EXTENSIONS FOR RDMA (ISER) INITIATOR

Mail

Sagi Grimberg <sagi@grimberg.me>, Max Gurtovoy <mgurtovoy@nvidia.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Supported

Web-page

<http://www.openfabrics.org> www.open-iscsi.org

Patchwork

<http://patchwork.kernel.org/project/linux-rdma/list/>

Files

drivers/infiniband/ulp/iser/

ISCSI EXTENSIONS FOR RDMA (ISER) TARGET

Mail

Sagi Grimberg <sagi@grimberg.me>

Mailing list

linux-rdma@vger.kernel.org, target-devel@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/nab/target-pending.git](https://git.kernel.org/pub/scm/linux/kernel/git/nab/target-pending.git) master

Files

drivers/infiniband/ulp/isert

ISDN/CMTP OVER BLUETOOTH

Mail

Karsten Keil <isdn@linux-pingi.de>

Mailing list

isdn4linux@listserv.isdn4linux.de (subscribers-only), netdev@vger.kernel.org

Status

Odd Fixes

Web-page

<http://www.isdn4linux.de>

Files

Documentation/isdn/ drivers/isdn/capi/ include/linux/isdn/ include/
uapi/linux/isdn/ net/bluetooth/cmtp/

ISDN/mISDN SUBSYSTEM

Mail

Karsten Keil <isdn@linux-pingi.de>

Mailing list

isdn4linux@listserv.isdn4linux.de (subscribers-only), netdev@vger.kernel.org

Status

Maintained

Web-page

<http://www.isdn4linux.de>

Files

drivers/isdn/Kconfig drivers/isdn/Makefile drivers/isdn/hardware/
drivers/isdn/mISDN/

ISOFS FILESYSTEM**Mail**

Jan Kara <jack@suse.cz>

Mailing list

linux-fsdevel@vger.kernel.org

Status

Maintained

Files

filesystems/isofs fs/isofs/

IT87 HARDWARE MONITORING DRIVER**Mail**

Jean Delvare <jdelvare@suse.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/it87 drivers/hwmon/it87.c

IT913X MEDIA DRIVER**Mailing list**

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/tuners/it913x*

ITE IT66121 HDMI BRIDGE DRIVER

Mail

Phong LE <ple@baylibre.com>, Neil Armstrong <neil.armstrong@linaro.org>

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/bridge/ite, it66121.yaml
drivers/gpu/drm/bridge/ite-it66121.c

IVTV VIDEO4LINUX DRIVER

Mail

Andy Walls <awalls@md.metrocast.net>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/admin-guide/media/ivtv* drivers/media/pci/ivtv/
include/uapi/linux/ivtv*

IX2505V MEDIA DRIVER

Mail

Malcolm Priestley <tvboxspy@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/dvb-frontends/ix2505v*

JAILHOUSE HYPERVISOR INTERFACE

Mail

Jan Kiszka <jan.kiszka@siemens.com>

Mailing list

jailhouse-dev@googlegroups.com

Status

Maintained

Files

arch/x86/include/asm/jailhouse_para.h arch/x86/kernel/jailhouse.c

JC42.4 TEMPERATURE SENSOR DRIVER

Mail

Guenter Roeck <linux@roeck-us.net>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/hwmon/jedec,jc42.yaml hwmon/jc42
drivers/hwmon/jc42.c

JFS FILESYSTEM

Mail

Dave Kleikamp <shaggy@kernel.org>

Mailing list

jfs-discussion@lists.sourceforge.net

Status

Odd Fixes

Web-page

<http://jfs.sourceforge.net/>

SCM

git <https://github.com/kleikamp/linux-shaggy.git>

Files

admin-guide/jfs fs/jfs/

JME NETWORK DRIVER

Mail

Guo-Fu Tseng <cooldavid@cooldavid.org>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/jme.*

JOURNALLING FLASH FILE SYSTEM V2 (JFFS2)

Mail

David Woodhouse <dwmw2@infradead.org>, Richard Weinberger
<richard@nod.at>

Mailing list

linux-mtd@lists.infradead.org

Status

Odd Fixes

Web-page

<http://www.linux-mtd.infradead.org/doc/jffs2.html>

SCM

git [git://git.infradead.org/ubifs-2.6.git](https://git.infradead.org/ubifs-2.6.git)

Files

fs/jffs2/ include/uapi/linux/jffs2.h

JOURNALLING LAYER FOR BLOCK DEVICES (JBD2)

Mail

"Theodore Ts'o" <tytso@mit.edu>, Jan Kara <jack@suse.com>

Mailing list

linux-ext4@vger.kernel.org

Status

Maintained

Files

fs/jbd2/ include/linux/jbd2.h

JPU V4L2 MEM2MEM DRIVER FOR RENESAS

Mail

Mikhail Ulyanov <mikhail.ulyanov@cogentembedded.com>

Mailing list

linux-media@vger.kernel.org, linux-renesas-soc@vger.kernel.org

Status

Maintained

Files

drivers/media/platform/renesas/rcar_jpu.c

JSM Neo PCI based serial card

Mailing list

linux-serial@vger.kernel.org

Status

Orphan

Files

drivers/tty/serial/jsm/

K10TEMP HARDWARE MONITORING DRIVER

Mail

Clemens Ladisch <clemens@ladisch.de>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/k10temp drivers/hwmon/k10temp.c

K8TEMP HARDWARE MONITORING DRIVER

Mail

Rudolf Marek <r.marek@assembler.cz>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/k8temp drivers/hwmon/k8temp.c

KASAN

Mail

Andrey Ryabinin <ryabinin.a.a@gmail.com>

Reviewer

Alexander Potapenko <glider@google.com>, Andrey Konovalov <andreyknvl@gmail.com>, Dmitry Vyukov <dvyukov@google.com>, Vincenzo Frascino <vincenzo.frascino@arm.com>

Mailing list

kasan-dev@googlegroups.com

Status

Maintained

Files

dev-tools/kasan arch/*/include/asm/*kasan.h arch/*/mm/kasan_init*
include/linux/kasan*.h lib/Kconfig.kasan mm/kasan/ scripts/Makefile.
kasan

KCONFIG

Mail

Masahiro Yamada <masahiroy@kernel.org>

Mailing list

linux-kbuild@vger.kernel.org

Status

Maintained

Patchwork

<https://patchwork.kernel.org/project/linux-kbuild/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/masahiroy/linux-kbuild.git](https://git.kernel.org/pub/scm/linux/kernel/git/masahiroy/linux-kbuild.git) kbuild

Files

Documentation/kbuild/kconfig* scripts/Kconfig.include scripts/
kconfig/

KCOV

Reviewer

Dmitry Vyukov <dvyukov@google.com>, Andrey Konovalov <andreyknvl@gmail.com>

Mailing list

kasan-dev@googlegroups.com

Status

Maintained

Files

dev-tools/kcov include/linux/kcov.h include/uapi/linux/kcov.h kernel/
kcov.c scripts/Makefile.kcov

KCSAN**Mail**

Marco Elver <elver@google.com>

Reviewer

Dmitry Vyukov <dvyukov@google.com>

Mailing list

kasan-dev@googlegroups.com

Status

Maintained

Files

dev-tools/kcsan include/linux/kcsan*.h kernel/kcsan/ lib/Kconfig.kcsan
scripts/Makefile.kcsan

KDUMP**Mail**

Baoquan He <bhe@redhat.com>

Reviewer

Vivek Goyal <vgoyal@redhat.com>, Dave Young <dyoung@redhat.com>

Mailing list

kexec@lists.infradead.org

Status

Maintained

Web-page

<http://lse.sourceforge.net/kdump/>

Files

Documentation/admin-guide/kdump/ fs/proc/vmcore.c include/linux/
crash_core.h include/linux/crash_dump.h include/uapi/linux/vmcore.h
kernel/crash_*.c

KEENE FM RADIO TRANSMITTER DRIVER**Mail**

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git git://linuxtv.org/media_tree.git

Files

drivers/media/radio/radio-keene*

KERNEL AUTOMOUNTER

Mail

Ian Kent <raven@themaw.net>

Mailing list

autofs@vger.kernel.org

Status

Maintained

Files

fs/autofs/

KERNEL BUILD + files below scripts/ (unless maintained elsewhere)

Mail

Masahiro Yamada <masahiroy@kernel.org>

Reviewer

Nathan Chancellor <nathan@kernel.org>, Nicolas Schier <nicolas@fjasle.eu>

Mailing list

linux-kbuild@vger.kernel.org

Status

Maintained

Patchwork

<https://patchwork.kernel.org/project/linux-kbuild/list/>

SCM

git <git://git.kernel.org/pub/scm/linux/kernel/git/masahiroy/linux-kbuild.git>

Files

Documentation/kbuild/ Makefile scripts/*vmlinux* scripts/Kbuild*
scripts/Makefile* scripts/basic/ scripts/clang-tools/ scripts/
dummy-tools/ scripts/mk* scripts/mod/ scripts/package/ usr/

KERNEL HARDENING (not covered by other areas)**Mail**

Kees Cook <keescook@chromium.org>

Reviewer

Gustavo A. R. Silva <gustavoars@kernel.org>

Mailing list

linux-hardening@vger.kernel.org

Status

Supported

SCM

`git git://git.kernel.org/pub/scm/linux/kernel/git/kees/linux.git for-next/hardening`

Files

Documentation/ABI/testing/sysfs-kernel-oops_count Documentation/
ABI/testing/sysfs-kernel-warn_count arch/*/configs/hardening.config
include/linux/overflow.h include/linux/randomize_kstack.h kernel/
configs/hardening.config mm/usercopy.c

Content regex

`\b(add|choose)_random_kstack_offset\b\b__check_(object_size|heap_object)\b\b__counted_by\b`

KERNEL JANITORS**Mailing list**

kernel-janitors@vger.kernel.org

Status

Odd Fixes

Web-page

<http://kernelnewbies.org/KernelJanitors>

KERNEL NFSD, SUNRPC, AND LOCKD SERVERS**Mail**

Chuck Lever <chuck.lever@oracle.com>, Jeff Layton <jlayton@kernel.org>

Reviewer

Neil Brown <neilb@suse.de>, Olga Kornievskaia <kolga@netapp.com>, Dai Ngo
<Dai.Ngo@oracle.com>, Tom Talpey <tom@talpey.com>

Mailing list

linux-nfs@vger.kernel.org

Status

Supported

Web-page

<http://nfs.sourceforge.net/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/cel/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/cel/linux.git)

Files

Documentation/filesystems/nfs/ fs/lockd/ fs/nfs_common/ fs/nfsd/
include/linux/lockd/ include/linux/sunrpc/ include/trace/events/
rpcgss.h include/trace/events/rpcrdma.h include/trace/events/sunrpc.
h include/trace/misc/fs.h include/trace/misc/nfs.h include/trace/
misc/sunrpc.h include/uapi/linux/nfsd/ include/uapi/linux/sunrpc/
net/sunrpc/

KERNEL REGRESSIONS

Mail

Thorsten Leemhuis <linux@leemhuis.info>

Mailing list

regressions@lists.linux.dev

Status

Supported

Files

admin-guide/reporting-regressions *process/handling-regressions*

KERNEL SELFTEST FRAMEWORK

Mail

Shuah Khan <shuah@kernel.org>, Shuah Khan <skhan@linuxfoundation.org>

Mailing list

linux-kseltest@vger.kernel.org

Status

Maintained

Patchwork

<https://patchwork.kernel.org/project/linux-kseltest/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/shuah/linux-kseltest.git](https://git.kernel.org/pub/scm/linux/kernel/git/shuah/linux-kseltest.git)

Files

Documentation/dev-tools/kseltest* tools/testing/selftests/

KERNEL SMB3 SERVER (KSMBD)**Mail**

Namjae Jeon <linkinjeon@kernel.org>, Steve French <sfrench@samba.org>

Reviewer

Sergey Senozhatsky <senozhatsky@chromium.org>, Tom Talpey <tom@talpey.com>

Mailing list

linux-cifs@vger.kernel.org

Status

Maintained

SCM

git [git://git.samba.org/ksmbd.git](https://git.samba.org/ksmbd.git)

Files

filesystems/smb/ksmbd fs/smb/common/ fs/smb/server/

KERNEL UNIT TESTING FRAMEWORK (KUnit)**Mail**

Brendan Higgins <brendanhiggins@google.com>, David Gow <david-gow@google.com>

Reviewer

Rae Moar <rmoar@google.com>

Mailing list

linux-kseltest@vger.kernel.org, kunit-dev@googlegroups.com

Status

Maintained

Web-page

https://google.github.io/kunit-docs/third_party/kernel/docs/

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/shuah/linux-kseltest.git](https://git.kernel.org/pub/scm/linux/kernel/git/shuah/linux-kseltest.git) kunit git
[git://git.kernel.org/pub/scm/linux/kernel/git/shuah/linux-kseltest.git](https://git.kernel.org/pub/scm/linux/kernel/git/shuah/linux-kseltest.git) kunit-fixes

Files

Documentation/dev-tools/kunit/ include/kunit/ lib/kunit/ rust/kernel/
kunit.rs scripts/rustdoc_test_* tools/testing/kunit/

KERNEL USERMODE HELPER

Mail

Luis Chamberlain <mcgrof@kernel.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

include/linux/umh.h kernel/umh.c

KERNEL VIRTUAL MACHINE (KVM)

Mail

Paolo Bonzini <pbonzini@redhat.com>

Mailing list

kvm@vger.kernel.org

Status

Supported

Web-page

<http://www.linux-kvm.org>

SCM

git [git://git.kernel.org/pub/scm/virt/kvm/kvm.git](https://git.kernel.org/pub/scm/virt/kvm/kvm.git)

Files

Documentation/virt/kvm/ include/asm-generic/kvm* include/kvm/iodev.
h include/linux/kvm* include/trace/events/kvm.h include/uapi/
asm-generic/kvm* include/uapi/linux/kvm* tools/kvm/ tools/testing/
selftests/kvm/ virt/kvm/*

KERNEL VIRTUAL MACHINE FOR ARM64 (KVM/arm64)

Mail

Marc Zyngier <maz@kernel.org>, Oliver Upton <oliver.upton@linux.dev>

Reviewer

James Morse <james.morse@arm.com>, Suzuki K Poulose
<suzuki.poulose@arm.com>, Zenghui Yu <yuzenghui@huawei.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), kv-marm@lists.linux.dev

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/kvmarm/kvmarm.git](https://git.kernel.org/pub/scm/linux/kernel/git/kvmarm/kvmarm.git)

Files

arch/arm64/include/asm/kvm* arch/arm64/include/uapi/asm/kvm* arch/arm64/kvm/ include/kvm/arm_* tools/testing/selftests/kvm/*/aarch64/tools/testing/selftests/kvm/aarch64/

KERNEL VIRTUAL MACHINE FOR LOONGARCH (KVM/LoongArch)**Mail**

Tianrui Zhao <zhaotianrui@loongson.cn>, Bibo Mao <maobibo@loongson.cn>, Huacai Chen <chenhuacai@kernel.org>

Mailing list

kvm@vger.kernel.org, loongarch@lists.linux.dev

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/virt/kvm/kvm.git](https://git.kernel.org/pub/scm/virt/kvm/kvm.git)

Files

arch/loongarch/include/asm/kvm* arch/loongarch/include/uapi/asm/kvm* arch/loongarch/kvm/

KERNEL VIRTUAL MACHINE FOR MIPS (KVM/mips)**Mail**

Huacai Chen <chenhuacai@kernel.org>

Mailing list

linux-mips@vger.kernel.org, kvm@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/virt/kvm/kvm.git](https://git.kernel.org/pub/scm/virt/kvm/kvm.git)

Files

arch/mips/include/asm/kvm* arch/mips/include/uapi/asm/kvm* arch/mips/kvm/

KERNEL VIRTUAL MACHINE FOR POWERPC (KVM/powerpc)**Mail**

Michael Ellerman <mpe@ellerman.id.au>

Reviewer

Nicholas Piggin <npiggin@gmail.com>

Mailing list

linuxppc-dev@lists.ozlabs.org, kvm@vger.kernel.org

Status

Maintained (Book3S 64-bit HV) Odd fixes (Book3S 64-bit PR) Orphan (Book3E and 32-bit)

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/powerpc/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/powerpc/linux.git) topic/ppc-kvm

Files

arch/powerpc/include/asm/kvm* arch/powerpc/include/uapi/asm/kvm*
arch/powerpc/kernel/kvm* arch/powerpc/kvm/

KERNEL VIRTUAL MACHINE FOR RISC-V (KVM/riscv)

Mail

Anup Patel <anup@brainfault.org>

Reviewer

Atish Patra <atishp@atishpatra.org>

Mailing list

kvm@vger.kernel.org, kvm-riscv@lists.infradead.org, linux-riscv@lists.infradead.org

Status

Maintained

SCM

git <https://github.com/kvm-riscv/linux.git>

Files

arch/riscv/include/asm/kvm* arch/riscv/include/uapi/asm/kvm* arch/riscv/kvm/ tools/testing/selftests/kvm/*/riscv/ tools/testing/selftests/kvm/riscv/

KERNEL VIRTUAL MACHINE for s390 (KVM/s390)

Mail

Christian Borntraeger <borntraeger@linux.ibm.com>, Janosch Frank <frankja@linux.ibm.com>, Claudio Imbrenda <imbrenda@linux.ibm.com>

Reviewer

David Hildenbrand <david@redhat.com>

Mailing list

kvm@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/kvms390/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/kvms390/linux.git)

Files

Documentation/virt/kvm/s390* arch/s390/include/asm/gmap.h arch/s390/include/asm/kvm* arch/s390/include/uapi/asm/kvm* arch/s390/include/uapi/asm/uvdevice.h arch/s390/kernel/uv.c arch/s390/kvm/

arch/s390/mm/gmap.c drivers/s390/char/uvdevice.c tools/testing/
selftests/drivers/s390x/uvdevice/ tools/testing/selftests/kvm/*/s390x/
tools/testing/selftests/kvm/s390x/

KERNEL VIRTUAL MACHINE FOR X86 (KVM/x86)

Mail

Sean Christopherson <seanjc@google.com>, Paolo Bonzini
<pbonzini@redhat.com>

Mailing list

kvm@vger.kernel.org

Status

Supported

P

[process/maintainer-kvm-x86](#)

SCM

git [git://git.kernel.org/pub/scm/virt/kvm/kvm.git](https://git.kernel.org/pub/scm/virt/kvm/kvm.git)

Files

arch/x86/include/asm/kvm* arch/x86/include/asm/svm.h arch/x86/
include/asm/vmx*.h arch/x86/include/uapi/asm/kvm* arch/x86/include/
uapi/asm/svm.h arch/x86/include/uapi/asm/vmx.h arch/x86/kvm/ arch/
x86/kvm/*/ tools/testing/selftests/kvm/*/x86_64/ tools/testing/
selftests/kvm/x86_64/

KERNFS

Mail

Greg Kroah-Hartman <gregkh@linuxfoundation.org>, Tejun Heo
<tj@kernel.org>

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/gregkh/driver-core.git](https://git.kernel.org/pub/scm/linux/kernel/git/gregkh/driver-core.git)

Files

fs/kernfs/ include/linux/kernfs.h

KEXEC

Mail

Eric Biederman <ebiederm@xmission.com>

Mailing list

kexec@lists.infradead.org

Status

Maintained

Web-page

<http://kernel.org/pub/linux/utils/kernel/kexec/>

Files

include/linux/kexec.h include/uapi/linux/kexec.h kernel/kexec*

KEYS-ENCRYPTED

Mail

Mimi Zohar <zohar@linux.ibm.com>

Mailing list

linux-integrity@vger.kernel.org, keyrings@vger.kernel.org

Status

Supported

Files

security/keys/trusted-encrypted include/keys/encrypted-type.h security/
keys/encrypted-keys/

KEYS-TRUSTED

Mail

James Bottomley <jejb@linux.ibm.com>, Jarkko Sakkinen <jarkko@kernel.org>, Mimi Zohar <zohar@linux.ibm.com>

Mailing list

linux-integrity@vger.kernel.org, keyrings@vger.kernel.org

Status

Supported

Files

security/keys/trusted-encrypted include/keys/trusted-type.h include/keys/
trusted_tpm.h security/keys/trusted-keys/

KEYS-TRUSTED-CAAM

Mail

Ahmad Fatoum <a.fatoum@pengutronix.de>

Reviewer

Pengutronix Kernel Team <kernel@pengutronix.de>

Mailing list

linux-integrity@vger.kernel.org, keyrings@vger.kernel.org

Status

Maintained

Files

include/keys/trusted_caam.h security/keys/trusted-keys/trusted_caam.
c

KEYS-TRUSTED-TEE

Mail

Sumit Garg <sumit.garg@linaro.org>

Mailing list

linux-integrity@vger.kernel.org, keyrings@vger.kernel.org

Status

Supported

Files

include/keys/trusted_tee.h security/keys/trusted-keys/trusted_tee.c

KEYS/KEYRINGS

Mail

David Howells <dhowells@redhat.com>, Jarkko Sakkinen <jarkko@kernel.org>

Mailing list

keyrings@vger.kernel.org

Status

Maintained

Files

security/keys/core include/keys/ include/linux/key-type.h include/linux/
key.h include/linux/keyctl.h include/uapi/linux/keyctl.h security/
keys/

KEYS/KEYRINGS_INTEGRITY

Mail

Jarkko Sakkinen <jarkko@kernel.org>, Mimi Zohar <zohar@linux.ibm.com>

Mailing list

linux-integrity@vger.kernel.org, keyrings@vger.kernel.org

Status

Supported

Files

security/integrity/platform_certs

KFENCE

Mail

Alexander Potapenko <glider@google.com>, Marco Elver <elver@google.com>

Reviewer

Dmitry Vyukov <dvyukov@google.com>

Mailing list

kasan-dev@googlegroups.com

Status

Maintained

Files

dev-tools/kfence arch/*/include/asm/kfence.h include/linux/kfence.h
lib/Kconfig.kfence mm/kfence/

KFIFO

Mail

Stefani Seibold <stefani@seibold.net>

Status

Maintained

Files

include/linux/kfifo.h lib/kfifo.c samples/kfifo/

KGDB / KDB /debug_core

Mail

Jason Wessel <jason.wessel@windriver.com>, Daniel Thompson
<daniel.thompson@linaro.org>

Reviewer

Douglas Anderson <dianders@chromium.org>

Mailing list

kgdb-bugreport@lists.sourceforge.net

Status

Maintained

Web-page

<http://kgdb.wiki.kernel.org/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/jwessel/kgdb.git](https://git.kernel.org/pub/scm/linux/kernel/git/jwessel/kgdb.git)

Files

dev-tools/kgdb drivers/misc/kgdbts.c drivers/tty/serial/kgdboc.c
include/linux/kdb.h include/linux/kgdb.h kernel/debug/ kernel/module/
kdb.c

KHADAS MCU MFD DRIVER

Mail

Neil Armstrong <neil.armstrong@linaro.org>

Mailing list

linux-amlogic@lists.infradead.org

Status

Maintained

Files

Documentation/devicetree/bindings/mfd/khadas,mcu.yaml drivers/mfd/
khadas-mcu.c drivers/thermal/khadas_mcu_fan.c include/linux/mfd/
khadas-mcu.h

KIONIX/ROHM KX022A ACCELEROMETER**Mail**

Matti Vaittinen <mazziesaccount@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Files

drivers/iio/accel/kionix-kx022a*

KMEMLEAK**Mail**

Catalin Marinas <catalin.marinas@arm.com>

Status

Maintained

Files

dev-tools/kmemleak include/linux/kmemleak.h mm/kmemleak.c samples/
kmemleak/kmemleak-test.c

KMSAN**Mail**

Alexander Potapenko <glider@google.com>

Reviewer

Marco Elver <elver@google.com>, Dmitry Vyukov <dvyukov@google.com>

Mailing list

kasan-dev@googlegroups.com

Status

Maintained

Files

dev-tools/kmsan arch/*/include/asm/kmsan.h arch/*/mm/kmsan_* include/
linux/kmsan*.h lib/Kconfig.kmsan mm/kmsan/ scripts/Makefile.kmsan

KPROBES

Mail

Naveen N. Rao <naveen.n.rao@linux.ibm.com>, Anil S Keshavamurthy <anil.s.keshavamurthy@intel.com>, "David S. Miller" <davem@davemloft.net>, Masami Hiramatsu <mhiramat@kernel.org>

Mailing list

linux-kernel@vger.kernel.org, linux-trace-kernel@vger.kernel.org

Status

Maintained

Patchwork

<https://patchwork.kernel.org/project/linux-trace-kernel/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/trace/linux-trace.git](https://git.kernel.org/pub/scm/linux/kernel/git/trace/linux-trace.git)

Files

trace/kprobes include/asm-generic/kprobes.h include/linux/kprobes.h
kernel/kprobes.c lib/test_kprobes.c samples/kprobes

KS0108 LCD CONTROLLER DRIVER

Mail

Miguel Ojeda <ojeda@kernel.org>

Status

Maintained

Files

admin-guide/auxdisplay/ks0108 drivers/auxdisplay/ks0108.c include/
linux/ks0108.h

KTD253 BACKLIGHT DRIVER

Mail

Linus Walleij <linus.walleij@linaro.org>

Status

Maintained

Files

Documentation/devicetree/bindings/leds/backlight/kinetic,ktd253.
yaml drivers/video/backlight/ktd253-backlight.c

KTEST

Mail

Steven Rostedt <rostedt@goodmis.org>, John Hawley
<warthog9@eaglescrag.net>

Status

Maintained

Files

tools/testing/ktest

KTZ8866 BACKLIGHT DRIVER

Mail

Jianhua Lu <lujianhua000@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/leds/backlight/kinetic,ktz8866.
yaml drivers/video/backlight/ktz8866.c

KVM PARAVIRT (KVM/paravirt)

Mail

Paolo Bonzini <pbonzini@redhat.com>

Reviewer

Wanpeng Li <wanpengli@tencent.com>, Vitaly Kuznetsov
<vkuznets@redhat.com>

Mailing list

kvm@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/virt/kvm/kvm.git](https://git.kernel.org/pub/scm/virt/kvm/kvm.git)

Files

arch/um/include/asm/kvm_para.h arch/x86/include/asm/kvm_para.h arch/
x86/include/asm/pvclock-abi.h arch/x86/include/uapi/asm/kvm_para.h
arch/x86/kernel/kvm.c arch/x86/kernel/kvmclock.c include/asm-generic/
kvm_para.h include/linux/kvm_para.h include/uapi/asm-generic/
kvm_para.h include/uapi/linux/kvm_para.h

KVM X86 HYPER-V (KVM/hyper-v)

Mail

Vitaly Kuznetsov <vkuznets@redhat.com>, Sean Christopherson
<seanjc@google.com>, Paolo Bonzini <pbonzini@redhat.com>

Mailing list

kvm@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/virt/kvm/kvm.git](https://git.kernel.org/pub/scm/virt/kvm/kvm.git)

Files

arch/x86/kvm/hyperv.* arch/x86/kvm/kvm_onhyperv.* arch/x86/kvm/svm/
hyperv.* arch/x86/kvm/svm/svm_onhyperv.* arch/x86/kvm/vmx/hyperv.*

KVM X86 Xen (KVM/Xen)

Mail

David Woodhouse <dwmw2@infradead.org>, Paul Durrant <paul@xen.org>,
Sean Christopherson <seanjc@google.com>, Paolo Bonzini
<pbonzini@redhat.com>

Mailing list

kvm@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/virt/kvm/kvm.git](https://git.kernel.org/pub/scm/virt/kvm/kvm.git)

Files

arch/x86/kvm/xen.*

L3MDEV

Mail

David Ahern <dsahern@kernel.org>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

include/net/l3mdev.h net/l3mdev

LANDLOCK SECURITY MODULE

Mail

Mickaël Salaün <mic@digikod.net>

Mailing list

linux-security-module@vger.kernel.org

Status

Supported

Web-page

<https://landlock.io>

SCM

git <https://git.kernel.org/pub/scm/linux/kernel/git/mic/linux.git>

Files

security/landlock userspace-api/landlock include/uapi/linux/landlock.
h samples/landlock/ security/landlock/ tools/testing/selftests/
landlock/

Content regex

landlock LANDLOCK

LANTIQ / INTEL Ethernet drivers

Mail

Hauke Mehrrens <hauke@hauke-m.de>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/dsa/lantiq_gswip.c drivers/net/dsa/lantiq_pce.h drivers/
net/ethernet/lantiq_xrx200.c net/dsa/tag_gswip.c

LANTIQ MIPS ARCHITECTURE

Mail

John Crispin <john@phrozen.org>

Mailing list

linux-mips@vger.kernel.org

Status

Maintained

Files

arch/mips/lantiq drivers/soc/lantiq

LANTIQ PEF2256 DRIVER

Mail

Herve Codina <herve.codina@bootlin.com>

Status

Maintained

Files

Documentation/devicetree/bindings/net/lantiq,pef2256.yaml drivers/
net/wan/framer/pef2256/ drivers/pinctrl/pinctrl-pef2256.c include/
linux/framer/pef2256.h

LASI 53c700 driver for PARISC

Mail

"James E.J. Bottomley" <James.Bottomley@HansenPartnership.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Maintained

Files

scsi/53c700 drivers/scsi/53c700*

LEAKING_ADDRESSES

Mail

Tobin C. Harding <me@tobin.cc>, Tycho Andersen <tycho@tycho.pizza>

Mailing list

linux-hardening@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tobin/leaks.git](https://git.kernel.org/pub/scm/linux/kernel/git/tobin/leaks.git)

Files

scripts/leaking_addresses.pl

LED SUBSYSTEM

Mail

Pavel Machek <pavel@ucw.cz>, Lee Jones <lee@kernel.org>

Mailing list

linux-leds@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/pavel/linux-leds.git](https://git.kernel.org/pub/scm/linux/kernel/git/pavel/linux-leds.git)

Files

Documentation/devicetree/bindings/leds/ Documentation/leds/ drivers/
leds/ include/dt-bindings/leds/ include/linux/leds.h

LEGO MINDSTORMS EV3**Reviewer**

David Lechner <david@lechnology.com>

Status

Maintained

Files

Documentation/devicetree/bindings/power/supply/lego,ev3-battery.
yaml arch/arm/boot/dts/ti/davinci/da850-lego-ev3.dts drivers/power/
supply/lego_ev3_battery.c

LEGO USB Tower driver**Mail**

Juergen Stuber <starblue@users.sourceforge.net>

Mailing list

legousb-devel@lists.sourceforge.net

Status

Maintained

Web-page

<http://legousb.sourceforge.net/>

Files

drivers/usb/misc/legousbtower.c

LETSKETCH HID TABLET DRIVER**Mail**

Hans de Goede <hdegoede@redhat.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/hid/hid.git](https://git.kernel.org/pub/scm/linux/kernel/git/hid/hid.git)

Files

drivers/hid/hid-letsketch.c

LG LAPTOP EXTRAS

Mail

Matan Ziv-Av <matan@svgalib.org>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-platform-lg-laptop
guide/laptops/lg-laptop drivers/platform/x86/lg-laptop.c admin-

LG2160 MEDIA DRIVER

Mail

Michael Krufky <mkrufky@linuxtv.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org> <http://github.com/mkrufky>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

SCM

git <git://linuxtv.org/mkrufky/tuners.git>

Files

drivers/media/dvb-frontends/lg2160.*

LGDT3305 MEDIA DRIVER

Mail

Michael Krufky <mkrufky@linuxtv.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org> <http://github.com/mkrufky>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

SCM

git <git://linuxtv.org/mkrufky/tuners.git>

Files

drivers/media/dvb-frontends/lgdt3305.*

LIBATA PATA ARASAN COMPACT FLASH CONTROLLER**Mail**

Viresh Kumar <vireshk@kernel.org>

Mailing list

linux-ide@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/axboe/linux-block.git](https://git.kernel.org/pub/scm/linux/kernel/git/axboe/linux-block.git)

Files

drivers/ata/pata_arasan_cf.c include/linux/pata_arasan_cf_data.h

LIBATA PATA DRIVERS**Reviewer**

Sergey Shtylyov <s.shtylyov@omp.ru>

Mailing list

linux-ide@vger.kernel.org

Files

drivers/ata/ata_*.c drivers/ata/pata_*.c

LIBATA PATA FARADAY FTIDE010 AND GEMINI SATA BRIDGE DRIVERS**Mail**

Linus Walleij <linus.walleij@linaro.org>

Mailing list

linux-ide@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/axboe/linux-block.git](https://git.kernel.org/pub/scm/linux/kernel/git/axboe/linux-block.git)

Files

drivers/ata/pata_ftide010.c drivers/ata/sata_gemini.c drivers/ata/sata_gemini.h

LIBATA SATA AHCI PLATFORM devices support

Mail

Hans de Goede <hdegoede@redhat.com>, Jens Axboe <axboe@kernel.dk>

Mailing list

linux-ide@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/axboe/linux-block.git](https://git.kernel.org/pub/scm/linux/kernel/git/axboe/linux-block.git)

Files

drivers/ata/ahci_platform.c drivers/ata/libahci_platform.c include/
linux/ahci_platform.h

LIBATA SATA AHCI SYNOPSYS DWC CONTROLLER DRIVER

Mail

Serge Semin <fancer.lancer@gmail.com>

Mailing list

linux-ide@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/dlemoal/libata.git](https://git.kernel.org/pub/scm/linux/kernel/git/dlemoal/libata.git)

Files

Documentation/devicetree/bindings/ata/baikal,btl-ahci.yaml
Documentation/devicetree/bindings/ata/snps,dwc-ahci.yaml drivers/
ata/ahci_dwc.c

LIBATA SATA PROMISE TX2/TX4 CONTROLLER DRIVER

Mail

Mikael Pettersson <mikpelinux@gmail.com>

Mailing list

linux-ide@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/axboe/linux-block.git](https://git.kernel.org/pub/scm/linux/kernel/git/axboe/linux-block.git)

Files

drivers/ata/sata_promise.*

LIBATA SUBSYSTEM (Serial and Parallel ATA drivers)**Mail**

Damien Le Moal <dlemoal@kernel.org>, Niklas Cassel <cassel@kernel.org>

Mailing list

linux-ide@vger.kernel.org

Status

Maintained

SCM

`git git://git.kernel.org/pub/scm/linux/kernel/git/libata/linux.git`

Files

Documentation/ABI/testing/sysfs-ata Documentation/devicetree/
bindings/ata/ drivers/ata/ include/linux/ata.h include/linux/libata.h

LIBNVDIMM BTT: BLOCK TRANSLATION TABLE**Mail**

Vishal Verma <vishal.l.verma@intel.com>, Dan Williams
<dan.j.williams@intel.com>, Dave Jiang <dave.jiang@intel.com>

Mailing list

nvdimm@lists.linux.dev

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/linux-nvdimm/list/>

P

nvdimm/maintainer-entry-profile

Files

drivers/nvdimm/btt*

LIBNVDIMM PMEM: PERSISTENT MEMORY DRIVER**Mail**

Dan Williams <dan.j.williams@intel.com>, Vishal Verma
<vishal.l.verma@intel.com>, Dave Jiang <dave.jiang@intel.com>

Mailing list

nvdimm@lists.linux.dev

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/linux-nvdimm/list/>

P

nvdimm/maintainer-entry-profile

Files

drivers/nvdimmm/pmem*

LIBNVDIMM: DEVICETREE BINDINGS

Mail

Oliver O'Halloran <oohall@gmail.com>

Mailing list

nvdimmm@lists.linux.dev

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/linux-nvdimmm/list/>

Files

Documentation/devicetree/bindings/pmem/pmem-region.txt drivers/
nvdimmm/of_pmem.c

LIBNVDIMM: NON-VOLATILE MEMORY DEVICE SUBSYSTEM

Mail

Dan Williams <dan.j.williams@intel.com>, Vishal Verma
<vishal.l.verma@intel.com>, Dave Jiang <dave.jiang@intel.com>, Ira Weiny
<ira.weiny@intel.com>

Mailing list

nvdimmm@lists.linux.dev

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/linux-nvdimmm/list/>

P

nvdimm/maintainer-entry-profile

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/nvdimmm/nvdimmm.git](https://git.kernel.org/pub/scm/linux/kernel/git/nvdimmm/nvdimmm.git)

Files

drivers/acpi/nfit/* drivers/nvdimmm/* include/linux/libnvdimmm.h
include/linux/nd.h include/uapi/linux/ndctl.h tools/testing/nvdimmm/

LIBRARY CODE

Mail

Andrew Morton <akpm@linux-foundation.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/akpm/mm.git](https://git.kernel.org/pub/scm/linux/kernel/git/akpm/mm.git) mm-nonmm-unstable

Files

lib/*

LICENSES and SPDX stuff

Mail

Thomas Gleixner <tglx@linutronix.de>, Greg Kroah-Hartman
<gregkh@linuxfoundation.org>

Mailing list

linux-spdx@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/gregkh/spdx.git](https://git.kernel.org/pub/scm/linux/kernel/git/gregkh/spdx.git)

Files

COPYING [process/license-rules](#) LICENSES/ scripts/spdxcheck-test.sh
scripts/spdxcheck.py scripts/spdxexclude

LINEAR RANGES HELPERS

Mail

Mark Brown <broonie@kernel.org>

Reviewer

Matti Vaittinen <mazziesaccount@gmail.com>

Files

include/linux/linear_range.h lib/linear_ranges.c lib/
test_linear_ranges.c

LINUX FOR POWER MACINTOSH

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Orphan

Files

arch/powerpc/platforms/powermac/ drivers/macintosh/

Excluded

drivers/macintosh/adb-iop.c drivers/macintosh/via-macii.c

LINUX FOR POWERPC (32-BIT AND 64-BIT)

Mail

Michael Ellerman <mpe@ellerman.id.au>

Reviewer

Nicholas Piggin <npiggin@gmail.com>, Christophe Leroy
<christophe.leroy@csgroup.eu>, Aneesh Kumar K.V
<aneesh.kumar@kernel.org>, Naveen N. Rao <naveen.n.rao@linux.ibm.com>

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Supported

Web-page

<https://github.com/linuxppc/wiki/wiki>

Patchwork

<http://patchwork.ozlabs.org/project/linuxppc-dev/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/powerpc/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/powerpc/linux.git)

Files

Documentation/ABI/stable/sysfs-firmware-opal-* Documentation/
devicetree/bindings/i2c/i2c-opal.txt Documentation/devicetree/
bindings/powerpc/ Documentation/devicetree/bindings rtc/rtc-opal.
txt Documentation/arch/powerpc/ arch/powerpc/ drivers/*/*/*pasemi*
drivers/*/*pasemi* drivers/char/tpm/tpm_ibmvtpm* drivers/crypto/
nx/ drivers/crypto/vmx/ drivers/i2c/busses/i2c-opal.c drivers/net/
ethernet/ibm/ibmveth.* drivers/net/ethernet/ibm/ibmvnic.* drivers/
pci/hotplug/pnv_php.c drivers/pci/hotplug/rpa* drivers/rtc/rtc-opal.c
drivers/scsi/ibmvscsi/ drivers/tty/hvc/hvc_opal.c drivers/watchdog/
wdrtas.c tools/testing/selftests/powerpc

Regex

/pmac powermac powernv [^a-z0-9]ps3 pseries

LINUX FOR POWERPC EMBEDDED MPC5XXX

Mail

Anatolij Gustschin <agust@denx.de>

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Odd Fixes

Files

arch/powerpc/platforms/512x/ arch/powerpc/platforms/52xx/

LINUX FOR POWERPC EMBEDDED PPC4XX

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Orphan

Files

arch/powerpc/platforms/40x/ arch/powerpc/platforms/44x/

LINUX FOR POWERPC EMBEDDED PPC85XX

Mail

Scott Wood <oss@buserror.net>

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Odd fixes

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/scottwood/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/scottwood/linux.git)

Files

Documentation/devicetree/bindings/cache/freescale-l2cache.txt

Documentation/devicetree/bindings/powerpc/fsl/ arch/powerpc/
platforms/85xx/

LINUX FOR POWERPC EMBEDDED PPC8XX AND PPC83XX

Mail

Christophe Leroy <christophe.leroy@csgroup.eu>

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Maintained

Files

arch/powerpc/platforms/8xx/ arch/powerpc/platforms/83xx/

LINUX KERNEL DUMP TEST MODULE (LKDTM)

Mail

Kees Cook <keescook@chromium.org>

Status

Maintained

Files

drivers/misc/lkdtm/* tools/testing/selftests/lkdtm/*

LINUX KERNEL MEMORY CONSISTENCY MODEL (LKMM)

Mail

Alan Stern <stern@rowland.harvard.edu>, Andrea Parri <parri.andrea@gmail.com>, Will Deacon <will@kernel.org>, Peter Zijlstra <peterz@infradead.org>, Boqun Feng <boqun.feng@gmail.com>, Nicholas Piggin <npiggin@gmail.com>, David Howells <dhowells@redhat.com>, Jade Alglave <j.alglave@ucl.ac.uk>, Luc Maranget <luc.maranget@inria.fr>, "Paul E. McKenney" <paulmck@kernel.org>

Reviewer

Akira Yokosawa <akiyks@gmail.com>, Daniel Lustig <dlustig@nvidia.com>, Joel Fernandes <joel@joelfernandes.org>

Mailing list

linux-kernel@vger.kernel.org, linux-arch@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/paulmck/linux-rcu.git](https://git.kernel.org/pub/scm/linux/kernel/git/paulmck/linux-rcu.git) dev

Files

Documentation/atomic_bitops.txt Documentation/atomic_t.txt core-api/refcount-vs-atomic Documentation/litmus-tests/ Documentation/memory-barriers.txt tools/memory-model/

LINUX-NEXT TREE

Mail

Stephen Rothwell <sfr@canb.auug.org.au>

Mailing list

linux-next@vger.kernel.org

Status

Supported

bugs

<mailto:linux-next@vger.kernel.org> and the appropriate development tree

SCM

`git git://git.kernel.org/pub/scm/linux/kernel/git/next/linux-next.git/`

LIS3LV02D ACCELEROMETER DRIVER**Mail**

Eric Piel <eric.piel@tremplin-utc.net>

Status

Maintained

Files

`misc-devices/lis3lv02d drivers/misc/lis3lv02d/ drivers/platform/x86/hp/
hp_accel.c`

LIST KUNIT TEST**Mail**

David Gow <davidgow@google.com>

Mailing list

linux-kselftest@vger.kernel.org, kunit-dev@googlegroups.com

Status

Maintained

Files

`lib/list-test.c`

LITEX PLATFORM**Mail**

Karol Gugala <kgugala@antmicro.com>, Mateusz Holenko
<mholenko@antmicro.com>, Gabriel Somlo <gsomlo@gmail.com>, Joel Stanley
<joel@jms.id.au>

Status

Maintained

Files

`Documentation/devicetree/bindings/*/litex,*.yaml arch/openrisc/boot/
dts/orlklitex.dts drivers/mmc/host/litex_mmc.c drivers/net/ethernet/
litex/* drivers/soc/litex/* drivers/tty/serial/liteuart.c include/
linux/litex.h`

Regex

`litex`

LIVE PATCHING

Mail

Josh Poimboeuf <jpoimboe@kernel.org>, Jiri Kosina <jikos@kernel.org>, Miroslav Benes <mbenes@suse.cz>, Petr Mladek <pmladek@suse.com>

Reviewer

Joe Lawrence <joe.lawrence@redhat.com>

Mailing list

live-patching@vger.kernel.org

Status

Maintained

SCM

`git git://git.kernel.org/pub/scm/linux/kernel/git/livepatching/livepatching.git`

Files

Documentation/ABI/testing/sysfs-kernel-livepatch Documentation/
livepatch/ arch/powerpc/include/asm/livepatch.h include/linux/
livepatch.h kernel/livepatch/ kernel/module/livepatch.c lib/
livepatch/ samples/livepatch/ tools/testing/selftests/livepatch/

LLC (802.2)

Mailing list

netdev@vger.kernel.org

Status

Odd fixes

Files

include/linux/llc.h include/net/llc* include/uapi/linux/llc.h net/
llc/

LM73 HARDWARE MONITOR DRIVER

Mail

Guillaume Ligneul <guillaume.ligneul@gmail.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

drivers/hwmon/lm73.c

LM78 HARDWARE MONITOR DRIVER

Mail

Jean Delvare <jdelvare@suse.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/lm78 drivers/hwmon/lm78.c

LM83 HARDWARE MONITOR DRIVER

Mail

Jean Delvare <jdelvare@suse.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/lm83 drivers/hwmon/lm83.c

LM90 HARDWARE MONITOR DRIVER

Mail

Jean Delvare <jdelvare@suse.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/hwmon/national,lm90.yaml hw-
mon/lm90 drivers/hwmon/lm90.c include/dt-bindings/thermal/lm90.h

LM95234 HARDWARE MONITOR DRIVER

Mail

Guenter Roeck <linux@roeck-us.net>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/lm95234 drivers/hwmon/lm95234.c

LME2510 MEDIA DRIVER

Mail

Malcolm Priestley <tvboxspy@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/usb/dvb-usb-v2/lmedm04*

LOADPIN SECURITY MODULE

Mail

Kees Cook <keescook@chromium.org>

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/kees/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/kees/linux.git) for-next/hardening

Files

admin-guide/LSM/LoadPin security/loadpin/

LOCKDOWN SECURITY MODULE

Mailing list

linux-security-module@vger.kernel.org

Status

Odd Fixes

SCM

git <https://git.kernel.org/pub/scm/linux/kernel/git/pcmoore/lsm.git>

Files

security/lockdown/

LOCKING PRIMITIVES

Mail

Peter Zijlstra <peterz@infradead.org>, Ingo Molnar <mingo@redhat.com>, Will Deacon <will@kernel.org>

Reviewer

Waiman Long <longman@redhat.com>, Boqun Feng <boqun.feng@gmail.com> (LOCKDEP)

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git](https://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git) locking/core

Files

Documentation/locking/ arch/*/include/asm/spinlock*.h include/linux/lockdep*.h include/linux/mutex*.h include/linux/rwlock*.h include/linux/rwsem*.h include/linux/seqlock.h include/linux/spinlock*.h kernel/locking/ lib/locking*.[ch]

Excluded

kernel/locking/locktorture.c

LOGICAL DISK MANAGER SUPPORT (LDM, Windows 2000/XP/Vista Dynamic Disks)

Mail

"Richard Russon (FlatCap)" <ldm@flatcap.org>

Mailing list

linux-ntfs-dev@lists.sourceforge.net

Status

Maintained

Web-page

<http://www.linux-ntfs.org/content/view/19/37/>

Files

admin-guide/ldm block/partitions/ldm.*

LOGITECH HID GAMING KEYBOARDS

Mail

Hans de Goede <hdegoede@redhat.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/hid/hid.git](https://git.kernel.org/pub/scm/linux/kernel/git/hid/hid.git)

Files

drivers/hid/hid-lg-g15.c

LONTIUM LT8912B MIPI TO HDMI BRIDGE

Mail

Adrien Grassein <adrien.grassein@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/display/bridge/lontium,lt8912b.
yaml drivers/gpu/drm/bridge/lontium-lt8912b.c

LOONGARCH

Mail

Huacai Chen <chenhuacai@kernel.org>

Reviewer

WANG Xuerui <kernel@xen0n.name>

Mailing list

loongarch@lists.linux.dev

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/chenhuacai/linux-loongson.git](https://git.kernel.org/pub/scm/linux/kernel/git/chenhuacai/linux-loongson.git)

Files

Documentation/arch/loongarch/ Documentation/translations/zh_CN/arch/
loongarch/ arch/loongarch/ drivers/*/loongarch*

LOONGSON GPIO DRIVER

Mail

Yinbo Zhu <zhuyinbo@loongson.cn>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/gpio/loongson,ls-gpio.yaml
drivers/gpio/gpio-loongson-64bit.c

LOONGSON LS2X APB DMA DRIVER

Mail

Binbin Zhou <zhoubinbin@loongson.cn>

Mailing list

dmaengine@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/dma/loongson,ls2x-apbdma.yaml
drivers/dma/ls2x-apb-dma.c

LOONGSON LS2X I2C DRIVER

Mail

Binbin Zhou <zhoubinbin@loongson.cn>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/i2c/loongson,ls2x-i2c.yaml
drivers/i2c/busses/i2c-ls2x.c

LOONGSON-2 SOC SERIES CLOCK DRIVER

Mail

Yinbo Zhu <zhuyinbo@loongson.cn>

Mailing list

linux-clk@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/clock/loongson,ls2k-clk.yaml
drivers/clock/clk-loongson2.c include/dt-bindings/clock/loongson,
ls2k-clk.h

LOONGSON SPI DRIVER

Mail

Yinbo Zhu <zhuyinbo@loongson.cn>

Mailing list

linux-spi@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/spi/loongson,ls2k-spi.yaml
drivers/spi/spi-loongson-core.c drivers/spi/spi-loongson-pci.c
drivers/spi/spi-loongson-plat.c drivers/spi/spi-loongson.h

LOONGSON-2 SOC SERIES GUTS DRIVER

Mail

Yinbo Zhu <zhuyinbo@loongson.cn>

Mailing list

loongarch@lists.linux.dev

Status

Maintained

Files

Documentation/devicetree/bindings/hwinfo/loongson,ls2k-chipid.yaml
drivers/soc/loongson/loongson2_guts.c

LOONGSON-2 SOC SERIES PM DRIVER

Mail

Yinbo Zhu <zhuyinbo@loongson.cn>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/soc/loongson/loongson,ls2k-pmc.
yaml drivers/soc/loongson/loongson2_pm.c

LOONGSON-2 SOC SERIES PINCTRL DRIVER

Mail

zhanghongchen <zhanghongchen@loongson.cn>, Yinbo Zhu <zhuyinbo@loongson.cn>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pinctrl/loongson,ls2k-pinctrl.
yaml drivers/pinctrl/pinctrl-loongson2.c

LOONGSON-2 SOC SERIES THERMAL DRIVER

Mail

zhanghongchen <zhanghongchen@loongson.cn>, Yinbo Zhu <zhuyinbo@loongson.cn>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/thermal/loongson,ls2k-thermal.
yaml drivers/thermal/loongson2_thermal.c

LSILOGIC MPT FUSION DRIVERS (FC/SAS/SPI)

Mail

Sathya Prakash <sathya.prakash@broadcom.com>, Sreekanth Reddy <sreekanth.reddy@broadcom.com>, Suganath Prabu Subramani <suganath-prabu.subramani@broadcom.com>

Mailing list

MPT-FusionLinux.pdl@broadcom.com, linux-scsi@vger.kernel.org

Status

Supported

Web-page

<http://www.avagotech.com/support/>

Files

drivers/message/fusion/ drivers/scsi/mpt3sas/

LSILOGIC/SYMBIOS/NCR 53C8XX and 53C1010 PCI-SCSI drivers

Mail

Matthew Wilcox <willy@infradead.org>

Mailing list

linux-scsi@vger.kernel.org

Status

Maintained

Files

drivers/scsi/sym53c8xx_2/

LTC1660 DAC DRIVER

Mail

Marcus Folkesson <marcus.folkesson@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/dac/lltc,ltc1660.yaml drivers/
iio/dac/ltc1660.c

LTC2688 IIO DAC DRIVER

Mail

Nuno Sá <nuno.sa@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/ABI/testing/sysfs-bus-iio-dac-ltc2688 Documentation/
devicetree/bindings/iio/dac/adi,ltc2688.yaml drivers/iio/dac/
ltc2688.c

LTC2947 HARDWARE MONITOR DRIVER

Mail

Nuno Sá <nuno.sa@analog.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/hwmon/adi,ltc2947.yaml drivers/
hwmon/ltc2947-core.c drivers/hwmon/ltc2947-i2c.c drivers/hwmon/
ltc2947-spi.c drivers/hwmon/ltc2947.h

LTC2991 HARDWARE MONITOR DRIVER

Mail

Antoniu Miclaus <antoniu.miclaus@analog.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/hwmon/adi,ltc2991.yaml drivers/
hwmon/ltc2991.c

LTC2983 IIO TEMPERATURE DRIVER

Mail

Nuno Sá <nuno.sa@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/iio/temperature/adi,ltc2983.yaml
drivers/iio/temperature/ltc2983.c

LTC4261 HARDWARE MONITOR DRIVER

Mail

Guenter Roeck <linux@roeck-us.net>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/ltc4261 drivers/hwmon/ltc4261.c

LTC4286 HARDWARE MONITOR DRIVER

Mail

Delphine CC Chiu <Delphine_CC_Chiu@Wiwynn.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/hwmon/lltc,ltc4286.yaml hwmon/ltc4286 drivers/hwmon/pmbus/Kconfig drivers/hwmon/pmbus/Makefile drivers/hwmon/pmbus/ltc4286.c

LTC4306 I2C MULTIPLEXER DRIVER

Mail

Michael Hennerich <michael.hennerich@analog.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/i2c/i2c-mux-ltc4306.txt drivers/i2c/muxes/i2c-mux-ltc4306.c

LTP (Linux Test Project)

Mail

Cyril Hrubis <chrubis@suse.cz>, Jan Stancek <jstancek@redhat.com>, Petr Vorel <pvorel@suse.cz>, Li Wang <liwang@redhat.com>, Yang Xu <xuyang2018.jy@fujitsu.com>

Mailing list

ltplib@lists.linux.it (subscribers-only)

Status

Maintained

Web-page

<http://linux-test-project.github.io/>

SCM

git <https://github.com/linux-test-project/ltp.git>

LTR390 AMBIENT/UV LIGHT SENSOR DRIVER

Mail

Anshul Dalal <anshulusr@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/light/liteon,ltr390.yaml
drivers/iio/light/ltr390.c

LYNX 28G SERDES PHY DRIVER

Mail

Ioana Ciornei <ioana.ciornei@nxp.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/phy/fsl,lynx-28g.yaml drivers/phy/freescale/phy-fsl-lynx-28g.c

LYNX PCS MODULE

Mail

Ioana Ciornei <ioana.ciornei@nxp.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/pcs/pcs-lynx.c include/linux/pcs-lynx.h

M68K ARCHITECTURE

Mail

Geert Uytterhoeven <geert@linux-m68k.org>

Mailing list

linux-m68k@lists.linux-m68k.org

Status

Maintained

Web-page

<http://www.linux-m68k.org/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/geert/linux-m68k.git](https://git.kernel.org/pub/scm/linux/kernel/git/geert/linux-m68k.git)

Files

arch/m68k/ drivers/zorro/

M68K ON APPLE MACINTOSH

Mail

Joshua Thompson <funaho@jurai.org>

Mailing list

linux-m68k@lists.linux-m68k.org

Status

Maintained

Web-page

<http://www.mac.linux-m68k.org/>

Files

arch/m68k/mac/ drivers/macintosh/adb-iop.c drivers/macintosh/
via-macii.c

M68K ON HP9000/300

Mail

Philip Blundell <philb@gnu.org>

Status

Maintained

Web-page

<http://www.tazenda.demon.co.uk/phil/linux-hp>

Files

arch/m68k/hp300/

M88DS3103 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/dvb-frontends/m88ds3103*

M88RS2000 MEDIA DRIVER

Mail

Malcolm Priestley <tvboxspy@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/dvb-frontends/m88rs2000*

MA901 MASTERKIT USB FM RADIO DRIVER

Mail

Alexey Klimov <klimov.linux@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

`drivers/media/radio/radio-ma901.c`

MAC80211

Mail

Johannes Berg <johannes@sipsolutions.net>

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

Web-page

<https://wireless.wiki.kernel.org/>

Patchwork

<https://patchwork.kernel.org/project/linux-wireless/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/wireless/wireless.git](https://git.kernel.org/pub/scm/linux/kernel/git/wireless/wireless.git) git
[git://git.kernel.org/pub/scm/linux/kernel/git/wireless/wireless-next.git](https://git.kernel.org/pub/scm/linux/kernel/git/wireless/wireless-next.git)

Files

`networking/mac80211-injection` `networking/mac80211_hwsim` `mac80211_hwsim`
`drivers/net/wireless/virtual/mac80211_hwsim.[ch]` `include/net/`
`mac80211.h` `net/mac80211/`

MAILBOX API

Mail

Jassi Brar <jassisinghbrar@gmail.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/mailbox/ drivers/mailbox/ include/
dt-bindings/mailbox/ include/linux/mailbox_client.h include/linux/
mailbox_controller.h

MAILBOX ARM MHUV2**Mail**

Viresh Kumar <viresh.kumar@linaro.org>, Tushar Khandelwal
<Tushar.Khandelwal@arm.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/mailbox/arm,mhuv2.yaml drivers/
mailbox/arm_mhuv2.c include/linux/mailbox/arm_mhuv2_message.h

MAN-PAGES: MANUAL PAGES FOR LINUX -- Sections 2, 3, 4, 5, and 7**Mail**

Alejandro Colomar <alx@kernel.org>

Mailing list

linux-man@vger.kernel.org

Status

Maintained

Web-page

<http://www.kernel.org/doc/man-pages>

SCM

git [git://git.kernel.org/pub/scm/docs/man-pages/man-pages.git](https://git.kernel.org/pub/scm/docs/man-pages/man-pages.git) git
git://www.alejandro-colomar.es/src/alx/linux/man-pages/man-pages.git

MANAGEMENT COMPONENT TRANSPORT PROTOCOL (MCTP)**Mail**

Jeremy Kerr <jk@codeconstruct.com.au>, Matt Johnston
<matt@codeconstruct.com.au>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

networking/mctp drivers/net/mctp/ include/net/mctp.h include/net/
mctpdevice.h include/net/netns/mctp.h net/mctp/

MAPLE TREE

Mail

Liam R. Howlett <Liam.Howlett@oracle.com>

Mailing list

maple-tree@lists.infradead.org, linux-mm@kvack.org

Status

Supported

Files

core-api/maple_tree include/linux/maple_tree.h include/trace/events/
maple_tree.h lib/maple_tree.c lib/test_maple_tree.c tools/testing/
radix-tree/linux/maple_tree.h tools/testing/radix-tree/maple.c

MARDUK (CREATOR CI40) DEVICE TREE SUPPORT

Mail

Rahul Bedarkar <rahulbedarkar89@gmail.com>

Mailing list

linux-mips@vger.kernel.org

Status

Maintained

Files

arch/mips/boot/dts/img/pistachio*

MARVELL 88E6XXX ETHERNET SWITCH FABRIC DRIVER

Mail

Andrew Lunn <andrew@lunn.ch>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/dsa/marvell,mv88e6060.yaml
Documentation/devicetree/bindings/net/dsa/marvell,mv88e6xxx.yaml
networking/devlink/mv88e6xxx drivers/net/dsa/mv88e6xxx/ include/linux/
dsa/mv88e6xxx.h include/linux/platform_data/mv88e6xxx.h

MARVELL ARMADA 3700 PHY DRIVERS

Mail

Miquel Raynal <miquel.raynal@bootlin.com>

Status

Maintained

Files

Documentation/devicetree/bindings/phy/marvell,armada-3700-utmi-phy.yaml Documentation/devicetree/bindings/phy/phy-mvebu-comphy.txt
drivers/phy/marvell/phy-mvebu-a3700-comphy.c drivers/phy/marvell/phy-mvebu-a3700-utmi.c

MARVELL ARMADA 3700 SERIAL DRIVER

Mail

Pali Rohár <pali@kernel.org>

Status

Maintained

Files

Documentation/devicetree/bindings/clock/marvell,armada-3700-uart-clock.yaml Documentation/devicetree/bindings/serial/mvebu-uart.txt
drivers/tty/serial/mvebu-uart.c

MARVELL ARMADA DRM SUPPORT

Mail

Russell King <linux@armlinux.org.uk>

Status

Maintained

SCM

git git://git.armlinux.org.uk/~rmk/linux-arm.git drm-armada-devel git
git://git.armlinux.org.uk/~rmk/linux-arm.git drm-armada-fixes

Files

Documentation/devicetree/bindings/display/armada/ drivers/gpu/drm/armada/ include/uapi/drm/armada_drm.h

MARVELL CRYPTO DRIVER

Mail

Boris Brezillon <bbrezillon@kernel.org>, Arnaud Ebalard
<arno@natisbad.org>, Srujana Challa <schalla@marvell.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Maintained

Files

drivers/crypto/marvell/ include/linux/soc/marvell/octeontx2/

MARVELL GIGABIT ETHERNET DRIVERS (skge/sky2)

Mail

Mirko Lindner <mlindner@marvell.com>, Stephen Hemminger
<stephen@networkplumber.org>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/marvell/sk*

MARVELL LIBERTAS WIRELESS DRIVER

Mailing list

libertas-dev@lists.infradead.org

Status

Orphan

Files

drivers/net/wireless/marvell/libertas/

MARVELL MACCHIATOBIN SUPPORT

Mail

Russell King <linux@armlinux.org.uk>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

arch/arm64/boot/dts/marvell/armada-8040-mcbin.dts

MARVELL MV643XX ETHERNET DRIVER

Mail

Sebastian Hesselbarth <sebastian.hesselbarth@gmail.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/marvell/mv643xx_eth.* include/linux/mv643xx.h

MARVELL MV88X3310 PHY DRIVER

Mail

Russell King <linux@armlinux.org.uk>, Marek Behún <kabel@kernel.org>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/phy/marvell10g.c

MARVELL MVEBU THERMAL DRIVER

Mail

Miquel Raynal <miquel.raynal@bootlin.com>

Status

Maintained

Files

drivers/thermal/armada_thermal.c

MARVELL MVNETA ETHERNET DRIVER

Mail

Marcin Wojtas <marcin.s.wojtas@gmail.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/marvell/mvneta*

MARVELL MVPP2 ETHERNET DRIVER

Mail

Marcin Wojtas <marcin.s.wojtas@gmail.com>, Russell King
<linux@armlinux.org.uk>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/marvell,pp2.yaml drivers/net/
ethernet/marvell/mvpp2/

MARVELL MWIFIEX WIRELESS DRIVER

Mail

Brian Norris <briannorris@chromium.org>

Mailing list

linux-wireless@vger.kernel.org

Status

Odd Fixes

Files

drivers/net/wireless/marvell/mwifiex/

MARVELL MWL8K WIRELESS DRIVER

Mailing list

linux-wireless@vger.kernel.org

Status

Orphan

Files

drivers/net/wireless/marvell/mwl8k.c

MARVELL NAND CONTROLLER DRIVER

Mail

Miquel Raynal <miquel.raynal@bootlin.com>

Mailing list

linux-mtd@lists.infradead.org

Status

Maintained

Files

drivers/mtd/nand/raw/marvell_nand.c

MARVELL OCTEON ENDPOINT DRIVER

Mail

Veerasenareddy Burru <vburru@marvell.com>, Sathesh Edara
<sedara@marvell.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/ethernet/marvell/octeon_ep

MARVELL OCTEONTX2 PHYSICAL FUNCTION DRIVER**Mail**

Sunil Goutham <sgoutham@marvell.com>, Geetha sowjanya
<gakula@marvell.com>, Subbaraya Sundeep <sbhatta@marvell.com>,
hariprasad <hkelam@marvell.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/ethernet/marvell/octeontx2/nic/ include/linux/soc/
marvell/octeontx2/

MARVELL OCTEONTX2 RVU ADMIN FUNCTION DRIVER**Mail**

Sunil Goutham <sgoutham@marvell.com>, Linu Cherian
<lcherian@marvell.com>, Geetha sowjanya <gakula@marvell.com>, Jerin
Jacob <jerinj@marvell.com>, hariprasad <hkelam@marvell.com>, Subbaraya
Sundeep <sbhatta@marvell.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

networking/device_drivers/ethernet/marvell/octeontx2 drivers/net/ethernet/
marvell/octeontx2/af/

MARVELL PRESTERA ETHERNET SWITCH DRIVER**Mail**

Taras Chorny taras.chorny@plvision.eu

Status

Supported

Web-page

<https://github.com/Marvell-switching/switchdev-pretera>

Files

drivers/net/ethernet/marvell/pretera/

MARVELL SOC MMC/SD/SDIO CONTROLLER DRIVER

Mail

Nicolas Pitre <nico@fluxnic.net>

Status

Odd Fixes

Files

drivers/mmc/host/mvsdio.*

MARVELL USB MDIO CONTROLLER DRIVER

Mail

Tobias Waldekranz <tobias@waldekranz.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/marvell,mvusb.yaml drivers/
net/mdio/mdio-mvusb.c

MARVELL XENON MMC/SD/SDIO HOST CONTROLLER DRIVER

Mail

Hu Ziji <huziji@marvell.com>

Mailing list

linux-mmc@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/mmc/marvell,xenon-sdhci.yaml
drivers/mmc/host/sdhci-xenon*

MATROX FRAMEBUFFER DRIVER

Mailing list

linux-fbdev@vger.kernel.org

Status

Orphan

Files

drivers/video/fbdev/matrox/matroxfb_* include/uapi/linux/matroxfb.h

MAX15301 DRIVER

Mail

Daniel Nilsson <daniel.nilsson@flex.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/max15301 drivers/hwmon/pmbus/max15301.c

MAX16065 HARDWARE MONITOR DRIVER

Mail

Guenter Roeck <linux@roeck-us.net>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/max16065 drivers/hwmon/max16065.c

MAX2175 SDR TUNER DRIVER

Mail

Ramesh Shanmugasundaram <rashanmu@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/max2175.txt userspace-
api/media/drivers/max2175 drivers/media/i2c/max2175* include/uapi/
linux/max2175.h

MAX31827 TEMPERATURE SWITCH DRIVER

Mail

Daniel Matyas <daniel.matyas@analog.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/hwmon/adi,max31827.yaml hw-
mon/max31827 drivers/hwmon/max31827.c

MAX31335 RTC DRIVER

Mail

Antoniu Miclaus <antoniu.miclaus@analog.com>

Mailing list

linux-rtc@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/rtc/adi,max31335.yaml drivers/rtc/
rtc-max31335.c

MAX6650 HARDWARE MONITOR AND FAN CONTROLLER DRIVER

Mailing list

linux-hwmon@vger.kernel.org

Status

Orphan

Files

hwmon/max6650 drivers/hwmon/max6650.c

MAX6697 HARDWARE MONITOR DRIVER

Mail

Guenter Roeck <linux@roeck-us.net>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/hwmon/max6697.txt hwmon/max6697
drivers/hwmon/max6697.c include/linux/platform_data/max6697.h

MAX9286 QUAD GMSL DESERIALIZER DRIVER

Mail

Jacopo Mondi <jacopo+renesas@jmondi.org>, Kieran Bingham
<kieran.bingham+renesas@ideasonboard.com>, Laurent Pinchart
<laurent.pinchart+renesas@ideasonboard.com>, Niklas Söderlund
<niklas.soderlund+renesas@ragnatech.se>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/i2c/maxim,max9286.yaml
drivers/media/i2c/max9286.c

MAX96712 QUAD GMSL2 DESERIALIZER DRIVER

Mail

Niklas Söderlund <niklas.soderlund@ragnatech.se>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/i2c/maxim,max96712.yaml
drivers/staging/media/max96712/max96712.c

MAX9860 MONO AUDIO VOICE CODEC DRIVER

Mail

Peter Rosin <peda@axentia.se>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/sound/max9860.txt sound/soc/
codecs/max9860.*

MAXBOTIX ULTRASONIC RANGER IIO DRIVER

Mail

Andreas Klinger <ak@it-klinger.de>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/proximity/maxbotix,mb1232.
yaml drivers/iio/proximity/mb1232.c

MAXIM MAX11205 DRIVER

Mail

Ramona Bolboaca <ramona.bolboaca@analog.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<https://ez.analog.com/linux-software-drivers>

Files

Documentation/devicetree/bindings/iio/adc/maxim,max11205.yaml
drivers/iio/adc/max11205.c

MAXIM MAX17040 FAMILY FUEL GAUGE DRIVERS

Reviewer

Iskren Chernev <iskren.chernev@gmail.com>, Krzysztof Kozlowski <krzysztof.kozlowski@linaro.org>, Marek Szyprowski <m.szyprowski@samsung.com>, Matheus Castello <matheus@castello.eng.br>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/power/supply/maxim,max17040.yaml
drivers/power/supply/max17040_battery.c

MAXIM MAX17042 FAMILY FUEL GAUGE DRIVERS

Reviewer

Hans de Goede <hdegoede@redhat.com>, Krzysztof Kozlowski <krzysztof.kozlowski@linaro.org>, Marek Szyprowski <m.szyprowski@samsung.com>, Sebastian Krzyszkowiak <sebastian.krzyszkowiak@puri.sm>, Purism Kernel Team <kernel@puri.sm>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/power/supply/maxim,max17042.yaml
drivers/power/supply/max17042_battery.c

MAXIM MAX20086 CAMERA POWER PROTECTOR DRIVER

Mail

Laurent Pinchart <laurent.pinchart@ideasonboard.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/regulator/maxim,max20086.yaml
drivers/regulator/max20086-regulator.c

MAXIM MAX30208 TEMPERATURE SENSOR DRIVER

Mail

Rajat Khandelwal <rajat.khandelwal@linux.intel.com>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

drivers/iio/temperature/max30208.c

MAXIM MAX77650 PMIC MFD DRIVER

Mail

Bartosz Golaszewski <brgl@bgdev.pl>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/*/max77650.yaml Documentation/
devicetree/bindings/*/max77650*.yaml drivers/gpio/gpio-max77650.c
drivers/input/misc/max77650-onkey.c drivers/leds/leds-max77650.
c drivers/mfd/max77650.c drivers/power/supply/max77650-charger.c
drivers/regulator/max77650-regulator.c include/linux/mfd/max77650.h

MAXIM MAX77714 PMIC MFD DRIVER

Mail

Luca Ceresoli <luca@lucaceresoli.net>

Status

Maintained

Files

Documentation/devicetree/bindings/mfd/maxim,max77714.yaml drivers/
mfd/max77714.c include/linux/mfd/max77714.h

MAXIM MAX77802 PMIC REGULATOR DEVICE DRIVER

Mail

Javier Martinez Canillas <javier@dowhile0.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/*/max77802.yaml drivers/
regulator/max77802-regulator.c include/dt-bindings/*/max77802.h

MAXIM MAX77976 BATTERY CHARGER**Mail**

Luca Ceresoli <luca@lucaceresoli.net>

Status

Supported

Files

Documentation/devicetree/bindings/power/supply/maxim,max77976.yaml
drivers/power/supply/max77976_charger.c

MAXIM MUIC CHARGER DRIVERS FOR EXYNOS BASED BOARDS**Mail**

Krzysztof Kozlowski <krzysztof.kozlowski@linaro.org>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

bugs

<mailto:linux-samsung-soc@vger.kernel.org>

Files

Documentation/devicetree/bindings/power/supply/maxim,max14577.yaml
Documentation/devicetree/bindings/power/supply/maxim,max77693.
yaml drivers/power/supply/max14577_charger.c drivers/power/supply/
max77693_charger.c

MAXIM PMIC AND MUIC DRIVERS FOR EXYNOS BASED BOARDS**Mail**

Chanwoo Choi <cw00.choi@samsung.com>, Krzysztof Kozlowski
<krzysztof.kozlowski@linaro.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

bugs

<mailto:linux-samsung-soc@vger.kernel.org>

Files

Documentation/devicetree/bindings/*/maxim,max14577.yaml
Documentation/devicetree/bindings/*/maxim,max77686.yaml

```
Documentation/devicetree/bindings/*/maxim,max77693.yaml
Documentation/devicetree/bindings/*/maxim,max77843.yaml
Documentation/devicetree/bindings/clock/maxim,max77686.txt
drivers/*/max77843.c  drivers/*/max14577*.c  drivers/*/max77686*.c
drivers/*/max77693*.c  drivers/clock/clock-max77686.c  drivers/extcon/
extcon-max14577.c  drivers/extcon/extcon-max77693.c  drivers/rtc/
rtc-max77686.c  include/linux/mfd/max14577*.h  include/linux/mfd/
max77686*.h include/linux/mfd/max77693*.h
```

MAXIRADIO FM RADIO RECEIVER DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/radio/radio-maxiradio*

MAXLINEAR ETHERNET PHY DRIVER

Mail

Xu Liang <lxu@maxlinear.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/phy/mxl-gpy.c

MCAN MMIO DEVICE DRIVER

Mail

Chandrasekar Ramakrishnan <rcsekar@samsung.com>

Mailing list

linux-can@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/can/bosch,m_can.yaml drivers/
net/can/m_can/m_can.c drivers/net/can/m_can/m_can.h drivers/net/can/
m_can/m_can_platform.c

MCBA MICROCHIP CAN BUS ANALYZER TOOL DRIVER**Reviewer**

Yasushi SHOJI <yashi@spacecubics.com>

Mailing list

linux-can@vger.kernel.org

Status

Maintained

Files

drivers/net/can/usb/mcba_usb.c

MCP2221A MICROCHIP USB-HID TO I2C BRIDGE DRIVER**Mail**

Rishi Gupta <gupt21@gmail.com>

Mailing list

linux-i2c@vger.kernel.org, linux-input@vger.kernel.org

Status

Maintained

Files

drivers/hid/hid-mcp2221.c

MCP251XFD SPI-CAN NETWORK DRIVER**Mail**

Marc Kleine-Budde <mkl@pengutronix.de>, Manivannan Sadhasivam <manivannan.sadhasivam@linaro.org>

Reviewer

Thomas Kopp <thomas.kopp@microchip.com>

Mailing list

linux-can@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/can/microchip,mcp251xfd.yaml
drivers/net/can/spi/mcp251xfd/

MCP4018 AND MCP4531 MICROCHIP DIGITAL POTENTIOMETER DRIVERS

Mail

Peter Rosin <peda@axentia.se>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-bus-iio-potentiometer-mcp4531
drivers/iio/potentiometer/mcp4018.c drivers/iio/potentiometer/
mcp4531.c

MCP4821 DAC DRIVER

Mail

Anshul Dalal <anshulusr@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/dac/microchip,mcp4821.yaml
drivers/iio/dac/mcp4821.c

MCR20A IEEE-802.15.4 RADIO DRIVER

Mail

Stefan Schmidt <stefan@datenfreihafen.org>

Mailing list

linux-wpan@vger.kernel.org

Status

Odd Fixes

Web-page

<https://github.com/xueliu/mcr20a-linux>

Files

Documentation/devicetree/bindings/net/ieee802154/mcr20a.txt drivers/
net/ieee802154/mcr20a.c drivers/net/ieee802154/mcr20a.h

MDIO REGMAP DRIVER

Mail

Maxime Chevallier <maxime.chevallier@bootlin.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/mdio/mdio-regmap.c include/linux/mdio/mdio-regmap.h

MEASUREMENT COMPUTING CIO-DAC IIO DRIVER

Mail

William Breathitt Gray <william.gray@linaro.org>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

drivers/iio/dac/cio-dac.c

MEDIA CONTROLLER FRAMEWORK

Mail

Sakari Ailus <sakari.ailus@linux.intel.com>, Laurent Pinchart <laurent.pinchart@ideasonboard.com>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Web-page

<https://www.linuxtv.org>

SCM

git git://linuxtv.org/media_tree.git

Files

drivers/media/mc/ include/media/media-*.h include/uapi/linux/media.h

MEDIA DRIVER FOR FREESCALE IMX PXP

Mail

Philipp Zabel <p.zabel@pengutronix.de>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

`drivers/media/platform/nxp/imx-pxp.[ch]`

MEDIA DRIVERS FOR ASCOT2E

Mail

Sergey Kozlov <serjk@netup.ru>, Abylay Ospan <aospan@netup.ru>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Web-page

<https://linuxtv.org> <http://netup.tv/>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

`drivers/media/dvb-frontends/ascot2e*`

MEDIA DRIVERS FOR CXD2099AR CI CONTROLLERS

Mail

Jasmin Jessich <jasmin@anw.at>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

`drivers/media/dvb-frontends/cxd2099*`

MEDIA DRIVERS FOR CXD2841ER

Mail

Sergey Kozlov <serjk@netup.ru>, Abylay Ospan <aospan@netup.ru>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Web-page

<https://linuxtv.org> <http://netup.tv/>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/dvb-frontends/cxd2841er*

MEDIA DRIVERS FOR CXD2880

Mail

Yasunari Takiguchi <Yasunari.Takiguchi@sony.com>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Web-page

<http://linuxtv.org/>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/dvb-frontends/cxd2880/* drivers/media/spi/cxd2880*

MEDIA DRIVERS FOR DIGITAL DEVICES PCIE DEVICES

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/pci/ddbridge/*

MEDIA DRIVERS FOR FREESCALE IMX

Mail

Steve Longerbeam <slongerbeam@gmail.com>, Philipp Zabel
<p.zabel@pengutronix.de>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

admin-guide/media/imx Documentation/devicetree/bindings/media/imx.txt
drivers/staging/media/imx/ include/linux/imx-media.h include/media/
imx.h

MEDIA DRIVERS FOR FREESCALE IMX7/8

Mail

Rui Miguel Silva <rmfrfs@gmail.com>, Laurent Pinchart <laurent.pinchart@ideasonboard.com>, Martin Kepplinger <martin.kepplinger@puri.sm>

Reviewer

Purism Kernel Team <kernel@puri.sm>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

admin-guide/media/imx7 Documentation/devicetree/bindings/media/
nxp,imx-mipi-csi2.yaml Documentation/devicetree/bindings/media/
nxp,imx7-csi.yaml Documentation/devicetree/bindings/media/nxp,
imx8mq-mipi-csi2.yaml drivers/media/platform/nxp/imx-mipi-csis.c
drivers/media/platform/nxp/imx7-media-csi.c drivers/media/platform/
nxp/imx8mq-mipi-csi2.c

MEDIA DRIVERS FOR HELENE

Mail

Abylay Ospan <aospan@netup.ru>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Web-page

<https://linuxtv.org> <http://netup.tv/>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/dvb-frontends/helene*

MEDIA DRIVERS FOR HORUS3A

Mail

Sergey Kozlov <serjk@netup.ru>, Abylay Ospan <aospan@netup.ru>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Web-page

<https://linuxtv.org> <http://netup.tv/>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/dvb-frontends/horus3a*

MEDIA DRIVERS FOR LNBH25

Mail

Sergey Kozlov <serjk@netup.ru>, Abylay Ospan <aospan@netup.ru>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Web-page

<https://linuxtv.org> <http://netup.tv/>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/dvb-frontends/lnbh25*

MEDIA DRIVERS FOR MXL5XX TUNER DEMODULATORS

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/dvb-frontends/mxl5xx*

MEDIA DRIVERS FOR NETUP PCI UNIVERSAL DVB devices

Mail

Sergey Kozlov <serjk@netup.ru>, Abylay Ospan <aospan@netup.ru>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Web-page

<https://linuxtv.org> <http://netup.tv/>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/pci/netup_unidvb/*

MEDIA DRIVERS FOR NVIDIA TEGRA - VDE

Mail

Dmitry Osipenko <digetx@gmail.com>

Mailing list

linux-media@vger.kernel.org, linux-tegra@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/nvidia,tegra-vde.yaml
drivers/media/platform/nvidia/tegra-vde/

MEDIA DRIVERS FOR RENESAS - CEU**Mail**

Jacopo Mondi <jacopo@jmondi.org>

Mailing list

linux-media@vger.kernel.org, linux-renesas-soc@vger.kernel.org

Status

Supported

SCM

git git://linxrtv.org/media_tree.git

Files

Documentation/devicetree/bindings/media/renesas,ceu.yaml drivers/
media/platform/renesas/renesas-ceu.c include/media/drv-intf/
renesas-ceu.h

MEDIA DRIVERS FOR RENESAS - DRIF**Mail**

Fabrizio Castro <fabrizio.castro.jz@renesas.com>

Mailing list

linux-media@vger.kernel.org, linux-renesas-soc@vger.kernel.org

Status

Supported

SCM

git git://linxrtv.org/media_tree.git

Files

Documentation/devicetree/bindings/media/renesas,drif.yaml drivers/
media/platform/renesas/rcar_drif.c

MEDIA DRIVERS FOR RENESAS - FCP**Mail**

Laurent Pinchart <laurent.pinchart@ideasonboard.com>

Mailing list

linux-media@vger.kernel.org, linux-renesas-soc@vger.kernel.org

Status

Supported

SCM

git git://linxrtv.org/media_tree.git

Files

Documentation/devicetree/bindings/media/renesas, fcp.yaml drivers/
media/platform/renesas/rcar-fcp.c include/media/rcar-fcp.h

MEDIA DRIVERS FOR RENESAS - FDP1

Mail

Kieran Bingham <kieran.bingham+renesas@ideasonboard.com>

Mailing list

linux-media@vger.kernel.org, linux-renesas-soc@vger.kernel.org

Status

Supported

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/renesas, fdp1.yaml drivers/
media/platform/renesas/rcar_fdp1.c

MEDIA DRIVERS FOR RENESAS - VIN

Mail

Niklas Söderlund <niklas.soderlund@ragnatech.se>

Mailing list

linux-media@vger.kernel.org, linux-renesas-soc@vger.kernel.org

Status

Supported

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/renesas,csi2.yaml
Documentation/devicetree/bindings/media/renesas,isp.yaml
Documentation/devicetree/bindings/media/renesas,vin.yaml drivers/
media/platform/renesas/rcar-isp.c drivers/media/platform/renesas/
rcar-vin/

MEDIA DRIVERS FOR RENESAS - VSP1

Mail

Laurent Pinchart <laurent.pinchart@ideasonboard.com>, Kieran Bingham
<kieran.bingham+renesas@ideasonboard.com>

Mailing list

linux-media@vger.kernel.org, linux-renesas-soc@vger.kernel.org

Status

Supported

SCM

git git://linuxtv.org/media_tree.git

Files

Documentation/devicetree/bindings/media/renesas,vsp1.yaml drivers/
media/platform/renesas/vsp1/

MEDIA DRIVERS FOR ST STV0910 DEMODULATOR ICs**Mailing list**

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

SCM

git git://linuxtv.org/media_tree.git

Files

drivers/media/dvb-frontends/stv0910*

MEDIA DRIVERS FOR ST STV6111 TUNER ICs**Mailing list**

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

SCM

git git://linuxtv.org/media_tree.git

Files

drivers/media/dvb-frontends/stv6111*

MEDIA DRIVERS FOR STM32 - DCMI / DCMIPP**Mail**

Hugues Fruchet <hugues.fruchet@foss.st.com>, Alain Volmat
<alain.volmat@foss.st.com>

Mailing list

linux-media@vger.kernel.org

Status

Supported

SCM

git git://linuxtv.org/media_tree.git

Files

Documentation/devicetree/bindings/media/st,stm32-dcmi.yaml
Documentation/devicetree/bindings/media/st,stm32-dcmipp.yaml
drivers/media/platform/st/stm32/stm32-dcmi.c drivers/media/platform/
st/stm32/stm32-dcmipp/*

MEDIA INPUT INFRASTRUCTURE (V4L/DVB)**Mail**

Mauro Carvalho Chehab <mchehab@kernel.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.kernel.org/project/linux-media/list/>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/admin-guide/media/ Documentation/devicetree/bindings/
media/ Documentation/driver-api/media/ Documentation/userspace-api/
media/ drivers/media/ drivers/staging/media/ include/dt-bindings/
media/ include/linux/platform_data/media/ include/media/ include/
uapi/linux/dvb/ include/uapi/linux/ivtv* include/uapi/linux/media.h
include/uapi/linux/uvccvideo.h include/uapi/linux/v4l2-* include/
uapi/linux/videodev2.h

MEDIATEK BLUETOOTH DRIVER**Mail**

Sean Wang <sean.wang@mediatek.com>

Mailing list

linux-bluetooth@vger.kernel.org, linux-mediatek@lists.infradead.org (moder-
ated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/net/mediatek-bluetooth.txt
drivers/bluetooth/btmtkuart.c

MEDIATEK BOARD LEVEL SHUTDOWN DRIVERS

Mail

Sean Wang <sean.wang@mediatek.com>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/power/reset/mt6323-poweroff.txt
drivers/power/reset/mt6323-poweroff.c

MEDIATEK CIR DRIVER

Mail

Sean Wang <sean.wang@mediatek.com>

Status

Maintained

Files

drivers/media/rc/mtk-cir.c

MEDIATEK DMA DRIVER

Mail

Sean Wang <sean.wang@mediatek.com>

Mailing list

dmaengine@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-mediatek@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/dma/mtk-* drivers/dma/mediatek/

MEDIATEK ETHERNET DRIVER

Mail

Felix Fietkau <nbd@nbd.name>, Sean Wang <sean.wang@mediatek.com>, Mark Lee <Mark-MC.Lee@mediatek.com>, Lorenzo Bianconi <lorenzo@kernel.org>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/mediatek/

MEDIATEK ETHERNET PCS DRIVER

Mail

Alexander Couzens <lynxis@fe80.eu>, Daniel Golle <daniel@makrotopia.org>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/pcs/pcs-mtk-lynxi.c include/linux/pcs/pcs-mtk-lynxi.h

MEDIATEK ETHERNET PHY DRIVERS

Mail

Daniel Golle <daniel@makrotopia.org>, Qingfang Deng <dqfext@gmail.com>, SkyLake Huang <SkyLake.Huang@mediatek.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/phy/mediatek-ge-soc.c drivers/net/phy/mediatek-ge.c

MEDIATEK I2C CONTROLLER DRIVER

Mail

Qii Wang <qii.wang@mediatek.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/i2c/i2c-mt65xx.yaml drivers/i2c/busses/i2c-mt65xx.c

MEDIATEK IOMMU DRIVER

Mail

Yong Wu <yong.wu@mediatek.com>

Mailing list

iommu@lists.linux.dev, linux-mediatek@lists.infradead.org (moderated for non-subscribers)

Status

Supported

Files

Documentation/devicetree/bindings/iommu/mediatek* drivers/iommu/
mtk_iommu* include/dt-bindings/memory/mediatek,mt*-port.h include/
dt-bindings/memory/mt*-port.h

MEDIATEK JPEG DRIVER

Mail

Bin Liu <bin.liu@mediatek.com>

Status

Supported

Files

Documentation/devicetree/bindings/media/mediatek-jpeg-*.yaml
drivers/media/platform/mediatek/jpeg/

MEDIATEK KEYPAD DRIVER

Mail

Mattijs Korpershoek <mkorpershoek@baylibre.com>

Status

Supported

Files

Documentation/devicetree/bindings/input/mediatek,mt6779-keypad.yaml
drivers/input/keyboard/mt6779-keypad.c

MEDIATEK MDP DRIVER

Mail

Minghsiu Tsai <minghsiu.tsai@mediatek.com>, Houlong Wei <[hou-long.wei@mediatek.com](mailto:houl-long.wei@mediatek.com)>, Andrew-CT Chen <andrew-ct.chen@mediatek.com>

Status

Supported

Files

Documentation/devicetree/bindings/media/mediatek-mdp.txt drivers/
media/platform/mediatek/mdp/ drivers/media/platform/mediatek/vpu/

MEDIATEK MEDIA DRIVER

Mail

Tiffany Lin <tiffany.lin@mediatek.com>, Andrew-CT Chen <andrew-ct.chen@mediatek.com>, Yunfei Dong <yunfei.dong@mediatek.com>

Status

Supported

Files

Documentation/devicetree/bindings/media/mediatek,vcodec*.yaml
Documentation/devicetree/bindings/media/mediatek-vpu.txt drivers/
media/platform/mediatek/vcodec/ drivers/media/platform/mediatek/vpu/

MEDIATEK MMC/SD/SDIO DRIVER

Mail

Chaotian Jing <chaotian.jing@mediatek.com>

Status

Maintained

Files

Documentation/devicetree/bindings/mmc/mtk-sd.yaml drivers/mmc/host/
mtk-sd.c

MEDIATEK MT76 WIRELESS LAN DRIVER

Mail

Felix Fietkau <nbd@nbd.name>, Lorenzo Bianconi <lorenzo@kernel.org>, Ry-
der Lee <ryder.lee@mediatek.com>

Reviewer

Shayne Chen <shayne.chen@mediatek.com>, Sean Wang
<sean.wang@mediatek.com>

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

SCM

git <https://github.com/nbd168/wireless>

Files

Documentation/devicetree/bindings/net/wireless/mediatek,mt76.yaml
drivers/net/wireless/mediatek/mt76/

MEDIATEK MT7601U WIRELESS LAN DRIVER

Mail

Jakub Kicinski <kuba@kernel.org>

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

Files

drivers/net/wireless/mediatek/mt7601u/

MEDIATEK MT7621 CLOCK DRIVER

Mail

Sergio Paracuellos <sergio.paracuellos@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/clock/mediatek,mt7621-sysc.yaml
drivers/clk/ralink/clk-mt7621.c

MEDIATEK MT7621 PCIE CONTROLLER DRIVER

Mail

Sergio Paracuellos <sergio.paracuellos@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/pci/mediatek,mt7621-pcie.yaml
drivers/pci/controller/pcie-mt7621.c

MEDIATEK MT7621 PHY PCI DRIVER

Mail

Sergio Paracuellos <sergio.paracuellos@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/phy/mediatek,mt7621-pci-phy.yaml
drivers/phy/ralink/phy-mt7621-pci.c

MEDIATEK MT7621/28/88 I2C DRIVER

Mail

Stefan Roese <sr@denx.de>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/i2c/mediatek,mt7621-i2c.yaml
drivers/i2c/busses/i2c-mt7621.c

MEDIATEK MTMIPS CLOCK DRIVER

Mail

Sergio Paracuellos <sergio.paracuellos@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/clock/mediatek,mtmips-sysc.yaml
drivers/clk/ralink/clk-mtmips.c

MEDIATEK NAND CONTROLLER DRIVER

Mailing list

linux-mtd@lists.infradead.org

Status

Orphan

Files

Documentation/devicetree/bindings/mtd/mediatek,mtk-nfc.yaml drivers/
mtd/nand/raw/mtk_*

MEDIATEK PMIC LED DRIVER

Mail

Sean Wang <sean.wang@mediatek.com>

Status

Maintained

Files

Documentation/devicetree/bindings/leds/leds-mt6323.txt drivers/leds/
leds-mt6323.c

MEDIATEK RANDOM NUMBER GENERATOR SUPPORT

Mail

Sean Wang <sean.wang@mediatek.com>

Status

Maintained

Files

drivers/char/hw_random/mtk-rng.c

MEDIATEK SMI DRIVER

Mail

Yong Wu <yong.wu@mediatek.com>

Mailing list

linux-mediatek@lists.infradead.org (moderated for non-subscribers)

Status

Supported

Files

Documentation/devicetree/bindings/memory-controllers/mediatek,smi*
drivers/memory/mtk-smi.c include/soc/mediatek/smi.h

MEDIATEK SWITCH DRIVER

Mail

Arinç ÜNAL <arinc.unal@arinc9.com>, Daniel Golle
<daniel@makrotopia.org>, DENG Qingfang <dqfext@gmail.com>, Sean Wang
<sean.wang@mediatek.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/dsa/mt7530-mdio.c drivers/net/dsa/mt7530-mmio.c drivers/
net/dsa/mt7530.* net/dsa/tag_mtk.c

MEDIATEK T7XX 5G WWAN MODEM DRIVER

Mail

Chandrashekar Devegowda <chandrashekar.devegowda@intel.com>

Reviewer

Chiranjeevi Rapolu <chiranjeevi.rapolu@linux.intel.com>, Liu Haijun <haijun.liu@mediatek.com>, M Chetan Kumar <m.chetan.kumar@linux.intel.com>,
Ricardo Martinez <ricardo.martinez@linux.intel.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

`drivers/net/wwan/t7xx/`

MEDIATEK USB3 DRD IP DRIVER

Mail

Chunfeng Yun <chunfeng.yun@mediatek.com>

Mailing list

linux-usb@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-mediatek@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

`Documentation/devicetree/bindings/usb/mediatek,*` `drivers/usb/host/xhci-mtk*` `drivers/usb/mtu3/`

MEGACHIPS STDPXXXX-GE-B850V3-FW LVDS/DP++ BRIDGES

Mail

Peter Senna Tschudin <peter.senna@gmail.com>, Ian Ray <ian.ray@ge.com>, Martyn Welch <martyn.welch@collabora.co.uk>

Status

Maintained

Files

`Documentation/devicetree/bindings/display/bridge/megachips-stdpxxxx-ge-b850v3-fw.txt` `drivers/gpu/drm/bridge/megachips-stdpxxxx-ge-b850v3-fw.c`

MEGARAIID SCSI/SAS DRIVERS

Mail

Kashyap Desai <kashyap.desai@broadcom.com>, Sumit Saxena <sumit.saxena@broadcom.com>, Shivasharan Srikanteshwara <shivasharan.srikanteshwara@broadcom.com>, Chandrakanth Patil <chandrakanth.patil@broadcom.com>

Mailing list

megaraidlinux.pdl@broadcom.com, linux-scsi@vger.kernel.org

Status

Maintained

Web-page

<http://www.avagotech.com/support/>

Files

scsi/megaraid drivers/scsi/megaraid.* drivers/scsi/megaraid/

MELEXIS MLX90614 DRIVER

Mail

Crt Mori <cmo@melexis.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<http://www.melexis.com>

Files

drivers/iio/temperature/mlx90614.c

MELEXIS MLX90632 DRIVER

Mail

Crt Mori <cmo@melexis.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<http://www.melexis.com>

Files

drivers/iio/temperature/mlx90632.c

MELEXIS MLX90635 DRIVER

Mail

Crt Mori <cmo@melexis.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Web-page

<http://www.melexis.com>

Files

drivers/iio/temperature/mlx90635.c

MELFAS MIP4 TOUCHSCREEN DRIVER

Mail

Sangwon Jee <jeesw@melfas.com>

Status

Supported

Web-page

<http://www.melfas.com>

Files

Documentation/devicetree/bindings/input/touchscreen/melfas_mip4.txt
drivers/input/touchscreen/melfas_mip4.c

MELLANOX BLUEFIELD I2C DRIVER

Mail

Khalil Blaiech <kblaiech@nvidia.com>, Asmaa Mnebhi <asmaa@nvidia.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Supported

Files

drivers/i2c/busses/i2c-mlxbf.c

MELLANOX ETHERNET DRIVER (mlx4_en)

Mail

Tariq Toukan <tariqt@nvidia.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Web-page

<http://www.mellanox.com>

Patchwork

<https://patchwork.kernel.org/project/netdevbpf/list/>

Files

drivers/net/ethernet/mellanox/mlx4/en_*

MELLANOX ETHERNET DRIVER (mlx5e)

Mail

Saeed Mahameed <saeedm@nvidia.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Web-page

<http://www.mellanox.com>

Patchwork

<https://patchwork.kernel.org/project/netdevbpf/list/>

Files

drivers/net/ethernet/mellanox/mlx5/core/en_*

MELLANOX ETHERNET INNOVA DRIVERS

Reviewer

Boris Pismenny <borisp@nvidia.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Web-page

<http://www.mellanox.com>

Patchwork

<https://patchwork.kernel.org/project/netdevbpf/list/>

Files

drivers/net/ethernet/mellanox/mlx5/core/en_accel/* drivers/net/
ethernet/mellanox/mlx5/core/fpga/* include/linux/mlx5/mlx5_ifc_fpga.
h

MELLANOX ETHERNET SWITCH DRIVERS

Mail

Ido Schimmel <idosch@nvidia.com>, Petr Machata <petrm@nvidia.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Web-page

<http://www.mellanox.com>

Patchwork

<https://patchwork.kernel.org/project/netdevbpf/list/>

Files

drivers/net/ethernet/mellanox/mlxsw/ tools/testing/selftests/
drivers/net/mlxsw/

MELLANOX FIRMWARE FLASH LIBRARY (mlxfw)

Mail

mlxsw@nvidia.com

Mailing list

netdev@vger.kernel.org

Status

Supported

Web-page

<http://www.mellanox.com>

Patchwork

<https://patchwork.kernel.org/project/netdevbpf/list/>

Files

drivers/net/ethernet/mellanox/mlxfw/

MELLANOX HARDWARE PLATFORM SUPPORT

Mail

Hans de Goede <hdegoede@redhat.com>, Ilpo Järvinen
<ilpo.jarvinen@linux.intel.com>, Vadim Pasternak <vadimp@nvidia.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Supported

Files

Documentation/ABI/testing/sysfs-platform-mellanox-bootctl drivers/
platform/mellanox/ include/linux/platform_data/mlxreg.h

MELLANOX MLX4 core VPI driver

Mail

Tariq Toukan <tariqt@nvidia.com>

Mailing list

netdev@vger.kernel.org, linux-rdma@vger.kernel.org

Status

Supported

Web-page

<http://www.mellanox.com>

Patchwork

<https://patchwork.kernel.org/project/netdevbpf/list/>

Files

drivers/net/ethernet/mellanox/mlx4/ include/linux/mlx4/

MELLANOX MLX4 IB driver**Mail**

Yishai Hadas <yishaih@nvidia.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Supported

Web-page

<http://www.mellanox.com>

Patchwork

<http://patchwork.kernel.org/project/linux-rdma/list/>

Files

drivers/infiniband/hw/mlx4/ include/linux/mlx4/ include/uapi/rdma/
mlx4-abi.h

MELLANOX MLX5 core VPI driver**Mail**

Saeed Mahameed <saeedm@nvidia.com>, Leon Romanovsky
<leonro@nvidia.com>

Mailing list

netdev@vger.kernel.org, linux-rdma@vger.kernel.org

Status

Supported

Web-page

<http://www.mellanox.com>

Patchwork

<https://patchwork.kernel.org/project/netdevbpf/list/>

Files

Documentation/networking/device_drivers/ethernet/mellanox/ drivers/
net/ethernet/mellanox/mlx5/core/ include/linux/mlx5/

MELLANOX MLX5 IB driver

Mail

Leon Romanovsky <leonro@nvidia.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Supported

Web-page

<http://www.mellanox.com>

Patchwork

<http://patchwork.kernel.org/project/linux-rdma/list/>

Files

drivers/infiniband/hw/mlx5/ include/linux/mlx5/ include/uapi/rdma/
mlx5-abi.h

MELLANOX MLX5 VDPA DRIVER

Mail

Dragos Tatulea <dtatulea@nvidia.com>

Mailing list

virtualization@lists.linux-foundation.org

Status

Supported

Files

drivers/vdpa/mlx5/

MELLANOX MLXCPLD I2C AND MUX DRIVER

Mail

Vadim Pasternak <vadimp@nvidia.com>, Michael Shych
<michaelsh@nvidia.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Supported

Files

i2c/busses/i2c-mlxcpld drivers/i2c/busses/i2c-mlxcpld.c drivers/i2c/
muxes/i2c-mux-mlxcpld.c

MELLANOX MLXCPLD LED DRIVER

Mail

Vadim Pasternak <vadimp@nvidia.com>

Mailing list

linux-leds@vger.kernel.org

Status

Supported

Files

leds/leds-mlxcpld drivers/leds/leds-mlxcpld.c drivers/leds/leds-mlxreg.
c

MELLANOX PLATFORM DRIVER

Mail

Vadim Pasternak <vadimp@nvidia.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Supported

Files

drivers/platform/x86/mlx-platform.c

MEMBARRIER SUPPORT

Mail

Mathieu Desnoyers <mathieu.desnoyers@efficios.com>, "Paul E. McKenney"
<paulmck@kernel.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

Files

arch/powerpc/include/asm/membarrier.h include/uapi/linux/membarrier.
h kernel/sched/membarrier.c

MEMBLOCK AND MEMORY MANAGEMENT INITIALIZATION

Mail

Mike Rapoport <rppt@kernel.org>

Mailing list

linux-mm@kvack.org

Status

Maintained

Files

core-api/boot-time-mm include/linux/memblock.h mm/memblock.c mm/
mm_init.c tools/testing/memblock/

MEMORY CONTROLLER DRIVERS

Mail

Krzysztof Kozlowski <krzysztof.kozlowski@linaro.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

bugs

<mailto:krzysztof.kozlowski@linaro.org>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/krzk/linux-mem-ctrl.git](https://git.kernel.org/pub/scm/linux/kernel/git/krzk/linux-mem-ctrl.git)

Files

Documentation/devicetree/bindings/memory-controllers/ drivers/
memory/ include/dt-bindings/memory/ include/memory/

MEMORY FREQUENCY SCALING DRIVERS FOR NVIDIA TEGRA

Mail

Dmitry Osipenko <digetx@gmail.com>

Mailing list

linux-pm@vger.kernel.org, linux-tegra@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/chanwoo/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/chanwoo/linux.git)

Files

drivers/devfreq/tegra30-devfreq.c

MEMORY HOT(UN)PLUG

Mail

David Hildenbrand <david@redhat.com>, Oscar Salvador <osalvador@suse.de>

Mailing list

linux-mm@kvack.org

Status

Maintained

Files

admin-guide/mm/memory-hotplug core-api/memory-hotplug drivers/base/memory.c include/linux/memory_hotplug.h mm/memory_hotplug.c tools/testing/selftests/memory-hotplug/

MEMORY MANAGEMENT

Mail

Andrew Morton <akpm@linux-foundation.org>

Mailing list

linux-mm@kvack.org

Status

Maintained

Web-page

<http://www.linux-mm.org>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/akpm/mm](https://git.kernel.org/pub/scm/linux/kernel/git/akpm/mm) quilt
[git://git.kernel.org/pub/scm/linux/kernel/git/akpm/25-new](https://git.kernel.org/pub/scm/linux/kernel/git/akpm/25-new)

Files

include/linux/gfp.h include/linux/gfp_types.h include/linux/memory_hotplug.h include/linux/mm.h include/linux/mmzone.h include/linux/pagewalk.h include/linux/rmap.h include/trace/events/ksm.h mm/tools/mm/ tools/testing/selftests/mm/

MEMORY MAPPING

Mail

Andrew Morton <akpm@linux-foundation.org>

Reviewer

Liam R. Howlett <Liam.Howlett@oracle.com>, Vlastimil Babka <vbabka@suse.cz>, Lorenzo Stoakes <lstoakes@gmail.com>

Mailing list

linux-mm@kvack.org

Status

Maintained

Web-page

<http://www.linux-mm.org>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/akpm/mm](https://git.kernel.org/pub/scm/linux/kernel/git/akpm/mm)

Files

mm/mmap.c

MEMORY TECHNOLOGY DEVICES (MTD)

Mail

Miquel Raynal <miquel.raynal@bootlin.com>, Richard Weinberger
<richard@nod.at>, Vignesh Raghavendra <vigneshr@ti.com>

Mailing list

linux-mtd@lists.infradead.org

Status

Maintained

Web-page

<http://www.linux-mtd.infradead.org/>

Patchwork

<http://patchwork.ozlabs.org/project/linux-mtd/list/>

chat

<irc://irc.oftc.net/mtd>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/mtd/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/mtd/linux.git) mtd/fixes git
[git://git.kernel.org/pub/scm/linux/kernel/git/mtd/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/mtd/linux.git) mtd/next

Files

Documentation/devicetree/bindings/mtd/ drivers/mtd/ include/linux/
mtd/ include/uapi/mtd/

MEMSENSING MICROSYSTEMS MSA311 DRIVER

Mail

Dmitry Rokosov <ddrokosov@sberdevices.ru>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/accel/memsensing,msa311.yaml
drivers/iio/accel/msa311.c

MEN A21 WATCHDOG DRIVER

Mail

Johannes Thumshirn <morbidrsa@gmail.com>

Mailing list

linux-watchdog@vger.kernel.org

Status

Maintained

Files

drivers/watchdog/mena21_wdt.c

MEN CHAMELEON BUS (mcb)

Mail

Johannes Thumshirn <morbidrsa@gmail.com>

Status

Maintained

Files

driver-api/men-chameleon-bus drivers/mcb/ include/linux/mcb.h

MEN F21BMC (Board Management Controller)

Mail

Andreas Werner <andreas.werner@men.de>

Status

Supported

Files

hwmon/menf21bmc	drivers/hwmon/menf21bmc_hwmon.c	drivers/leds/
leds-menf21bmc.c	drivers/mfd/menf21bmc.c	drivers/watchdog/
menf21bmc_wdt.c		

MEN Z069 WATCHDOG DRIVER

Mail

Johannes Thumshirn <jth@kernel.org>

Mailing list

linux-watchdog@vger.kernel.org

Status

Maintained

Files

drivers/watchdog/menz69_wdt.c

MESON AO CEC DRIVER FOR AMLOGIC SOCS

Mail

Neil Armstrong <neil.armstrong@linaro.org>

Mailing list

linux-media@vger.kernel.org, linux-amlogic@lists.infradead.org

Status

Supported

Web-page

<http://linux-meson.com/>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/cec/amlogic,
meson-gx-ao-cec.yaml drivers/media/cec/platform/meson/ao-cec-g12a.c
drivers/media/cec/platform/meson/ao-cec.c

MESON GE2D DRIVER FOR AMLOGIC SOCS

Mail

Neil Armstrong <neil.armstrong@linaro.org>

Mailing list

linux-media@vger.kernel.org, linux-amlogic@lists.infradead.org

Status

Supported

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/amlogic,axg-ge2d.yaml
drivers/media/platform/amlogic/meson-ge2d/

MESON NAND CONTROLLER DRIVER FOR AMLOGIC SOCS

Mail

Liang Yang <liang.yang@amlogic.com>

Mailing list

linux-mtd@lists.infradead.org

Status

Maintained

Files

Documentation/devicetree/bindings/mtd/amlogic,meson-nand.yaml
drivers/mtd/nand/raw/meson_*

MESON VIDEO DECODER DRIVER FOR AMLOGIC SOCS

Mail

Neil Armstrong <neil.armstrong@linaro.org>

Mailing list

linux-media@vger.kernel.org, linux-amlogic@lists.infradead.org

Status

Supported

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/amlogic,gx-vdec.yaml
drivers/staging/media/meson/vdec/

METHODE UDPU SUPPORT

Mail

Robert Marko <robert.marko@sartura.hr>

Status

Maintained

Files

arch/arm64/boot/dts/marvell/armada-3720-eDPU.dts arch/arm64/boot/
dts/marvell/armada-3720-uDPU.*

MHI BUS

Mail

Manivannan Sadhasivam <manivannan.sadhasivam@linaro.org>

Mailing list

mhi@lists.linux.dev, linux-arm-msm@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/mani/mhi.git](https://git.kernel.org/pub/scm/linux/kernel/mani/mhi.git)

Files

Documentation/ABI/stable/sysfs-bus-mhi Documentation/mhi/ drivers/
bus/mhi/ drivers/pci/endpoint/functions/pci-epf-mhi.c include/linux/
mhi.h

MICROBLAZE ARCHITECTURE

Mail

Michal Simek <monstr@monstr.eu>

Status

Supported

Web-page

<http://www.monstr.eu/fdt/>

SCM

git [git://git.monstr.eu/linux-2.6-microblaze.git](https://git.monstr.eu/linux-2.6-microblaze.git)

Files

arch/microblaze/

MICROBLAZE TMR INJECT

Mail

Appana Durga Kedareswara rao <appana.durga.kedareswara.rao@amd.com>

Status

Supported

Files

Documentation/devicetree/bindings/misc/xlnx,tmr-inject.yaml drivers/
misc/xilinx_tmr_inject.c

MICROBLAZE TMR MANAGER

Mail

Appana Durga Kedareswara rao <appana.durga.kedareswara.rao@amd.com>

Status

Supported

Files

Documentation/ABI/testing/sysfs-driver-xilinx-tmr-manager
Documentation/devicetree/bindings/misc/xlnx,tmr-manager.yaml
drivers/misc/xilinx_tmr_manager.c

MICROCHIP AT91 DMA DRIVERS

Mail

Ludovic Desroches <ludovic.desroches@microchip.com>, Tudor Ambarus <tudor.ambarus@linaro.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers),
dmaengine@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/dma/atmel-dma.txt drivers/dma/
at_hdmac.c drivers/dma/at_xdmac.c include/dt-bindings/dma/at91.h

MICROCHIP AT91 SERIAL DRIVER**Mail**

Richard Genoud <richard.genoud@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/serial/atmel,at91-usart.yaml
drivers/tty/serial/atmel_serial.c drivers/tty/serial/atmel_serial.h

MICROCHIP AT91 USART MFD DRIVER**Mail**

Radu Pirea <radu_nicolae.pirea@upb.ro>

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/serial/atmel,at91-usart.yaml
drivers/mfd/at91-usart.c include/dt-bindings/mfd/at91-usart.h

MICROCHIP AT91 USART SPI DRIVER**Mail**

Radu Pirea <radu_nicolae.pirea@upb.ro>

Mailing list

linux-spi@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/serial/atmel,at91-usart.yaml
drivers/spi/spi-at91-usart.c

MICROCHIP AUDIO ASOC DRIVERS

Mail

Claudiu Beznea <claudiu.beznea@tuxon.dev>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Supported

Files

Documentation/devicetree/bindings/sound/atmel*	Documentation/
devicetree/bindings/sound/axentia,tse850-pcm5142.txt	Documentation/
devicetree/bindings/sound/microchip,sama7g5-*	Documentation/
devicetree/bindings/sound/mikroe,mikroe-proto.txt	sound/soc/atmel

MICROCHIP CSI2DC DRIVER

Mail

Eugen Hristev <eugen.hristev@microchip.com>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/media/microchip,csi2dc.yaml
drivers/media/platform/microchip/microchip-csi2dc.c

MICROCHIP ECC DRIVER

Mail

Tudor Ambarus <tudor.ambarus@linaro.org>

Mailing list

linux-crypto@vger.kernel.org

Status

Maintained

Files

drivers/crypto/atmel-ecc.*

MICROCHIP EIC DRIVER

Mail

Claudiu Beznea <claudiu.beznea@tuxon.dev>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Supported

Files

Documentation/devicetree/bindings/interrupt-controller/microchip,
sama7g5-eic.yaml drivers/irqchip/irq-mchp-eic.c

MICROCHIP I2C DRIVER

Mail

Codrin Ciubotariu <codrin.ciubotariu@microchip.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Supported

Files

drivers/i2c/busses/i2c-at91-*.c drivers/i2c/busses/i2c-at91.h

MICROCHIP ISC DRIVER

Mail

Eugen Hristev <eugen.hristev@microchip.com>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/media/atmel,isc.yaml
Documentation/devicetree/bindings/media/microchip,xisc.yaml
drivers/media/platform/microchip/microchip-isc* drivers/media/
platform/microchip/microchip-sama*-isc* drivers/staging/media/
deprecated/atmel/atmel-isc* drivers/staging/media/deprecated/atmel/
atmel-sama*-isc* include/linux/atmel-isc-media.h

MICROCHIP ISI DRIVER

Mail

Eugen Hristev <eugen.hristev@microchip.com>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Files

drivers/media/platform/atmel/atmel-isi.c drivers/media/platform/
atmel/atmel-isi.h

MICROCHIP KSZ SERIES ETHERNET SWITCH DRIVER

Mail

Woojung Huh <woojung.huh@microchip.com>, UNGLinux-
Driver@microchip.com

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/dsa/microchip,ksz.yaml
Documentation/devicetree/bindings/net/dsa/microchip,lan937x.yaml
drivers/net/dsa/microchip/* include/linux/dsa/ksz_common.h include/
linux/platform_data/microchip-ksz.h net/dsa/tag_ksz.c

MICROCHIP LAN743X ETHERNET DRIVER

Mail

Bryan Whitehead <bryan.whitehead@microchip.com>, UNGLinux-
Driver@microchip.com

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/microchip/lan743x_*

MICROCHIP LAN87xx/LAN937x T1 PHY DRIVER

Mail

Arun Ramadoss <arun.ramadoss@microchip.com>

Reviewer

UNGLinuxDriver@microchip.com

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/phy/microchip_t1.c

MICROCHIP LAN966X ETHERNET DRIVER

Mail

Horatiu Vultur <horatiu.vultur@microchip.com>, UNGLinux-Driver@microchip.com

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/microchip/lan966x/*

MICROCHIP LCDFB DRIVER

Mail

Nicolas Ferre <nicolas.ferre@microchip.com>

Mailing list

linux-fbdev@vger.kernel.org

Status

Maintained

Files

drivers/video/fbdev/atmel_lcdfb.c include/video/atmel_lcdc.h

MICROCHIP MCP16502 PMIC DRIVER

Mail

Claudiu Beznea <claudiu.beznea@tuxon.dev>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Supported

Files

Documentation/devicetree/bindings/regulator/microchip,mcp16502.yaml
drivers/regulator/mcp16502.c

MICROCHIP MCP3564 ADC DRIVER

Mail

Marius Cristea <marius.cristea@microchip.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Files

Documentation/ABI/testing/sysfs-bus-iio-adc-mcp3564 Documentation/
devicetree/bindings/iio/adc/microchip,mcp3564.yaml drivers/iio/adc/
mcp3564.c

MICROCHIP MCP3911 ADC DRIVER

Mail

Marcus Folkesson <marcus.folkesson@gmail.com>, Kent Gustavsson
<kent@minoris.se>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/adc/microchip,mcp3911.yaml
drivers/iio/adc/mcp3911.c

MICROCHIP MMC/SD/SDIO MCI DRIVER

Mail

Aubin Constans <aubin.constans@microchip.com>

Status

Maintained

Files

drivers/mmc/host/atmel-mci.c

MICROCHIP NAND DRIVER

Mail

Tudor Ambarus <tudor.ambarus@linaro.org>

Mailing list

linux-mtd@lists.infradead.org

Status

Supported

Files

Documentation/devicetree/bindings/mtd/atmel-nand.txt drivers/mtd/
nand/raw/atmel/*

MICROCHIP OTPC DRIVER

Mail

Claudiu Beznea <claudiu.beznea@tuxon.dev>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Supported

Files

Documentation/devicetree/bindings/nvmem/microchip,sama7g5-otpc.yaml
drivers/nvmem/microchip-otpc.c include/dt-bindings/nvmem/microchip,
sama7g5-otpc.h

MICROCHIP PCI1XXXX GP DRIVER

Mail

Vaibhaav Ram T.L <vaibhaavram.tl@microchip.com>, Kumaravel Thiagarajan
<kumaravel.thiagarajan@microchip.com>

Mailing list

linux-gpio@vger.kernel.org

Status

Supported

Files

drivers/misc/mchp_pcilxxxx/mchp_pcilxxxx_gp.c drivers/
misc/mchp_pcilxxxx/mchp_pcilxxxx_gp.h drivers/misc/
mchp_pcilxxxx/mchp_pcilxxxx_gpio.c drivers/misc/mchp_pcilxxxx/
mchp_pcilxxxx_otpe2p.c

MICROCHIP PCI1XXXX I2C DRIVER

Mail

Tharun Kumar P <tharunkumar.pasumarthi@microchip.com>, Kumaravel Thiagarajan <kumaravel.thiagarajan@microchip.com>, Microchip Linux Driver Support <UNGLinuxDriver@microchip.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

drivers/i2c/busses/i2c-mchp-pcilxxxx.c

MICROCHIP PCIe UART DRIVER

Mail

Kumaravel Thiagarajan <kumaravel.thiagarajan@microchip.com>, Tharun Kumar P <tharunkumar.pasumarthi@microchip.com>

Mailing list

linux-serial@vger.kernel.org

Status

Maintained

Files

drivers/tty/serial/8250/8250_pcilxxxx.c

MICROCHIP POLARFIRE FPGA DRIVERS

Mail

Conor Dooley <conor.dooley@microchip.com>

Reviewer

Vladimir Georgiev <v.georgiev@metrotek.ru>

Mailing list

linux-fpga@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/fpga/microchip,mpf-spi-fpga-mgr.
yaml drivers/fpga/microchip-spi.c

MICROCHIP PWM DRIVER

Mail

Claudiu Beznea <claudiu.beznea@tuxon.dev>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-pwm@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/pwm/atmel,at91sam-pwm.yaml
drivers/pwm/pwm-atmel.c

MICROCHIP SAMA5D2-COMPATIBLE ADC DRIVER

Mail

Eugen Hristev <eugen.hristev@microchip.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/iio/adc/atmel,sama5d2-adc.yaml
drivers/iio/adc/at91-sama5d2_adc.c include/dt-bindings/iio/adc/
at91-sama5d2_adc.h

MICROCHIP SAMA5D2-COMPATIBLE SHUTDOWN CONTROLLER

Mail

Claudiu Beznea <claudiu.beznea@tuxon.dev>

Status

Supported

Files

Documentation/devicetree/bindings/power/reset/atmel,sama5d2-shdwc.
yaml drivers/power/reset/at91-sama5d2_shdwc.c

MICROCHIP SOC DRIVERS

Mail

Conor Dooley <conor@kernel.org>

Status

Supported

SCM

git <https://git.kernel.org/pub/scm/linux/kernel/git/conor/linux.git/>

Files

drivers/soc/microchip/

MICROCHIP SPI DRIVER

Mail

Ryan Wanner <ryan.wanner@microchip.com>

Status

Supported

Files

drivers/spi/spi-atmel.*

MICROCHIP SSC DRIVER

Mail

Claudiu Beznea <claudiu.beznea@tuxon.dev>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Supported

Files

Documentation/devicetree/bindings/misc/atmel-ssc.txt drivers/misc/
atmel-ssc.c include/linux/atmel-ssc.h

Microchip Timer Counter Block (TCB) Capture Driver

Mail

Kamel Bouhara <kamel.bouhara@bootlin.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), [linux-
iio@vger.kernel.org](mailto:linux-
iio@vger.kernel.org)

Status

Maintained

Files

drivers/counter/microchip-tcb-capture.c

MICROCHIP USB251XB DRIVER

Mail

Richard Leitner <richard.leitner@skidata.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/usb/usb251xb.yaml drivers/usb/
misc/usb251xb.c

MICROCHIP USBA UDC DRIVER

Mail

Cristian Birsan <cristian.birsan@microchip.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Supported

Files

drivers/usb/gadget/udc/atmel_usba_udc.*

MICROCHIP WILC1000 WIFI DRIVER

Mail

Ajay Singh <ajay.kathat@microchip.com>, Claudiu Beznea
<claudiu.beznea@tuxon.dev>

Mailing list

linux-wireless@vger.kernel.org

Status

Supported

Files

drivers/net/wireless/microchip/wilc1000/

MICROSEMI MIPS SOCS

Mail

Alexandre Belloni <alexandre.belloni@bootlin.com>, UNGLinux-
Driver@microchip.com

Mailing list

linux-mips@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/mips/mscc.txt	Documentation/
devicetree/bindings/phy/mscc,vsc7514-serdes.yaml	Documentation/
devicetree/bindings/power/reset/ocelot-reset.txt	arch/mips/boot/
dts/mscc/ arch/mips/configs/generic/board-ocelot.config	arch/mips/
generic/board-ocelot.c	

MICROSEMI SMART ARRAY SMARTPQI DRIVER (smartpqi)

Mail

Don Brace <don.brace@microchip.com>

Mailing list

storagedev@microchip.com, linux-scsi@vger.kernel.org

Status

Supported

Files

scsi/smartpqi	drivers/scsi/smartpqi/Kconfig	drivers/scsi/smartpqi/
Makefile	drivers/scsi/smartpqi/smartpqi*.ch	include/linux/cciss*.h
include/uapi/linux/cciss*.h		

MICROSOFT MANA RDMA DRIVER

Mail

Long Li <longli@microsoft.com>, Ajay Sharma <sharmaajay@microsoft.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Supported

Files

drivers/infiniband/hw/mana/	include/net/mana	include/uapi/rdma/
mana-abi.h		

MICROSOFT SURFACE AGGREGATOR TABLET-MODE SWITCH

Mail

Maximilian Luz <luzmaximilian@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/surface/surface_aggregator_tablets.c

MICROSOFT SURFACE BATTERY AND AC DRIVERS

Mail

Maximilian Luz <luzmaximilian@gmail.com>

Mailing list

linux-pm@vger.kernel.org, platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/power/supply/surface_battery.c drivers/power/supply/
surface_charger.c

MICROSOFT SURFACE DTX DRIVER

Mail

Maximilian Luz <luzmaximilian@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

driver-api/surface_aggregator/clients/dtx drivers/platform/surface/
surface_dtx.c include/uapi/linux/surface_aggregator/dtx.h

MICROSOFT SURFACE GPE LID SUPPORT DRIVER

Mail

Maximilian Luz <luzmaximilian@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/surface/surface_gpe.c

MICROSOFT SURFACE HARDWARE PLATFORM SUPPORT

Mail

Hans de Goede <hdegoede@redhat.com>, Ilpo Järvinen
<ilpo.jarvinen@linux.intel.com>, Maximilian Luz <luzmaximilian@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/pdx86/platform-drivers-x86.git](https://git.kernel.org/pub/scm/linux/kernel/git/pdx86/platform-drivers-x86.git)

Files

`drivers/platform/surface/`

MICROSOFT SURFACE HID TRANSPORT DRIVER

Mail

Maximilian Luz <luzmaximilian@gmail.com>

Mailing list

linux-input@vger.kernel.org, platform-driver-x86@vger.kernel.org

Status

Maintained

Files

`drivers/hid/surface-hid/`

MICROSOFT SURFACE HOT-PLUG DRIVER

Mail

Maximilian Luz <luzmaximilian@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

`drivers/platform/surface/surface_hotplug.c`

MICROSOFT SURFACE PLATFORM PROFILE DRIVER

Mail

Maximilian Luz <luzmaximilian@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

`drivers/platform/surface/surface_platform_profile.c`

MICROSOFT SURFACE PRO 3 BUTTON DRIVER

Mail

Chen Yu <yu.c.chen@intel.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Supported

Files

`drivers/platform/surface/surfacepro3_button.c`

MICROSOFT SURFACE SYSTEM AGGREGATOR HUB DRIVER

Mail

Maximilian Luz <luzmaximilian@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

`drivers/platform/surface/surface_aggregator_hub.c`

MICROSOFT SURFACE SYSTEM AGGREGATOR SUBSYSTEM

Mail

Maximilian Luz <luzmaximilian@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Web-page

<https://github.com/linux-surface/surface-aggregator-module>

chat

<irc://irc.libera.chat/linux-surface>

Files

`Documentation/driver-api/surface_aggregator/` `drivers/platform/surface/aggregator/` `drivers/platform/surface/surface_acpi_notify.c` `drivers/platform/surface/surface_aggregator_cdev.c` `drivers/platform/surface/surface_aggregator_registry.c` `include/linux/surface_acpi_notify.h` `include/linux/surface_aggregator/` `include/uapi/linux/surface_aggregator/`

MICROTEK X6 SCANNER

Mail

Oliver Neukum <oliver@neukum.org>

Status

Maintained

Files

drivers/usb/image/microtek.*

MIKROTIK CRS3XX 98DX3236 BOARD SUPPORT

Mail

Luka Kovacic <luka.kovacic@sartura.hr>, Luka Perkovic <luka.perkovic@sartura.hr>

Status

Maintained

Files

arch/arm/boot/dts/marvell/armada-xp-crs305-1g-4s-bit.dts arch/
arm/boot/dts/marvell/armada-xp-crs305-1g-4s.dts arch/arm/boot/
dts/marvell/armada-xp-crs326-24g-2s-bit.dts arch/arm/boot/dts/
marvell/armada-xp-crs326-24g-2s.dts arch/arm/boot/dts/marvell/
armada-xp-crs328-4c-20s-4s-bit.dts arch/arm/boot/dts/marvell/
armada-xp-crs328-4c-20s-4s.dts

MIPI CCS, SMIA AND SMIA++ IMAGE SENSOR DRIVER

Mail

Sakari Ailus <sakari.ailus@linux.intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/i2c/mipi-ccs.yaml
Documentation/driver-api/media/drivers/ccs/ userspace-
api/media/drivers/ccs drivers/media/i2c/ccs-pll.c drivers/media/i2c/
ccs-pll.h drivers/media/i2c/ccs/ include/uapi/linux/ccs.h include/
uapi/linux/smiapp.h

MIPS

Mail

Thomas Bogendoerfer <tsbogend@alpha.franken.de>

Mailing list

linux-mips@vger.kernel.org

Status

Maintained

Web-page

<http://www.linux-mips.org/>

Patchwork

<https://patchwork.kernel.org/project/linux-mips/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/mips/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/mips/linux.git)

Files

Documentation/devicetree/bindings/mips/ Documentation/arch/mips/
arch/mips/ drivers/platform/mips/ include/dt-bindings/mips/

MIPS BOSTON DEVELOPMENT BOARD

Mail

Paul Burton <paulburton@kernel.org>

Mailing list

linux-mips@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/clock/img,boston-clock.txt arch/
mips/boot/dts/img/boston.dts arch/mips/configs/generic/board-boston.
config drivers/clockdev/clock-boston.c include/dt-bindings/clock/
boston-clock.h

MIPS CORE DRIVERS

Mail

Thomas Bogendoerfer <tsbogend@alpha.franken.de>, Serge Semin
<fancer.lancer@gmail.com>

Mailing list

linux-mips@vger.kernel.org

Status

Supported

Files

drivers/bus/mips_cdmm.c drivers/clocksource/mips-gic-timer.c drivers/

cpuidle/cpuidle-cps.c drivers/irqchip/irq-mips-cpu.c drivers/irqchip/
irq-mips-gic.c

MIPS GENERIC PLATFORM

Mail

Paul Burton <paulburton@kernel.org>

Mailing list

linux-mips@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/power/mti,mips-cpc.yaml arch/mips/
generic/ arch/mips/tools/generic-board-config.sh

MIPS RINT INSTRUCTION EMULATION

Mail

Aleksandar Markovic <aleksandar.markovic@mips.com>

Mailing list

linux-mips@vger.kernel.org

Status

Supported

Files

arch/mips/math-emu/dp_rint.c arch/mips/math-emu/sp_rint.c

MIPS/LOONGSON1 ARCHITECTURE

Mail

Keguang Zhang <keguang.zhang@gmail.com>

Mailing list

linux-mips@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/*/loongson,ls1*.yaml arch/mips/
include/asm/mach-loongson32/ arch/mips/loongson32/ drivers/*/
loongson1 drivers/net/ethernet/stmicro/stmmac/dwmac-loongson1.c

MIPS/LOONGSON2EF ARCHITECTURE

Mail

Jiaxun Yang <jiaxun.yang@flygoat.com>

Mailing list

linux-mips@vger.kernel.org

Status

Maintained

Files

arch/mips/include/asm/mach-loongson2ef/ arch/mips/loongson2ef/
drivers/cpufreq/loongson2_cpufreq.c

MIPS/LOONGSON64 ARCHITECTURE

Mail

Huacai Chen <chenhuacai@kernel.org>, Jiaxun Yang <jiaxun.yang@flygoat.com>

Mailing list

linux-mips@vger.kernel.org

Status

Maintained

Files

arch/mips/include/asm/mach-loongson64/ arch/mips/loongson64/ drivers/
irqchip/irq-loongson* drivers/platform/mips/cpu_hwmon.c

MIRO SOUND PCM20 FM RADIO RECEIVER DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Odd Fixes

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/radio/radio-miropcm20*

MITSUMI MM8013 FG DRIVER

Mail

Konrad Dybcio <konradybcio@kernel.org>

Files

Documentation/devicetree/bindings/power/supply/mitsumi,mm8013.yaml
drivers/power/supply/mm8013.c

MMP SUPPORT

Reviewer

Lubomir Rintel <lkundrak@v3.sk>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Odd Fixes

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/lkundrak/linux-mmp.git](https://git.kernel.org/pub/scm/linux/kernel/git/lkundrak/linux-mmp.git)

Files

arch/arm/boot/dts/marvell/mmp* arch/arm/mach-mmp/ include/linux/soc/
mmp/

MMP USB PHY DRIVERS

Reviewer

Lubomir Rintel <lkundrak@v3.sk>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

drivers/phy/marvell/phy-mmp3-usb.c drivers/phy/marvell/phy-pxa-usb.c

MMU GATHER AND TLB INVALIDATION

Mail

Will Deacon <will@kernel.org>, "Aneesh Kumar K.V"
<aneesh.kumar@linux.ibm.com>, Andrew Morton <akpm@linux-foundation.org>,
Nick Piggin <npiggin@gmail.com>, Peter Zijlstra <peterz@infradead.org>

Mailing list

linux-arch@vger.kernel.org, linux-mm@kvack.org

Status

Maintained

Files

arch/*/include/asm/tlb.h include/asm-generic/tlb.h mm/mmu_gather.c

MN88472 MEDIA DRIVER**Mailing list**

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/dvb-frontends/mn88472*

MN88473 MEDIA DRIVER**Mailing list**

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/dvb-frontends/mn88473*

MODULE SUPPORT**Mail**

Luis Chamberlain <mcgrof@kernel.org>

Mailing list

linux-modules@vger.kernel.org, linux-kernel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/mcgrof/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/mcgrof/linux.git) modules-next

Files

include/linux/kmod.h include/linux/module*.h kernel/module/ lib/
test_kmod.c scripts/module* tools/testing/selftests/kmod/

MONOLITHIC POWER SYSTEM PMIC DRIVER

Mail

Saravanan Sekar <sravanhome@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/mfd/mps,mp2629.yaml Documentation/
devicetree/bindings/regulator/mps,mp*.yaml drivers/hwmon/pmbus/
mpq7932.c drivers/iio/adc/mp2629_adc.c drivers/mfd/mp2629.c drivers/
power/supply/mp2629_charger.c drivers/regulator/mp5416.c drivers/
regulator/mpq7920.c drivers/regulator/mpq7920.h include/linux/mfd/
mp2629.h

MOST(R) TECHNOLOGY DRIVER

Mail

Parthiban Veerasooran <parthiban.veerasooran@microchip.com>, Christian
Gromm <christian.gromm@microchip.com>

Status

Maintained

Files

Documentation/ABI/testing/configfs-most Documentation/ABI/testing/
sysfs-bus-most drivers/most/ drivers/staging/most/ include/linux/
most.h

MOTORCOMM PHY DRIVER

Mail

Peter Geis <pgwipeout@gmail.com>, Frank <Frank.Sae@motor-comm.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/motorcomm,yt8xxx.yaml drivers/
net/phy/motorcomm.c

MOXA SMARTIO/INDUSTIO/INTELLIO SERIAL CARD

Mail

Jiri Slaby <jirislaby@kernel.org>

Status

Maintained

Files

driver-api/tty/moxa-smartio drivers/tty/mxser.*

MP3309C BACKLIGHT DRIVER

Mail

Flavio Suligoi <f.suligoi@asem.it>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

Files

Documentation/devicetree/bindings/leds/backlight/mps,mp3309c.yaml
drivers/video/backlight/mp3309c.c

MR800 AVERMEDIA USB FM RADIO DRIVER

Mail

Alexey Klimov <klimov.linux@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/radio/radio-mr800.c

MRF24J40 IEEE 802.15.4 RADIO DRIVER

Mail

Stefan Schmidt <stefan@datenfreihafen.org>

Mailing list

linux-wpan@vger.kernel.org

Status

Odd Fixes

Files

Documentation/devicetree/bindings/net/ieee802154/mrf24j40.txt
drivers/net/ieee802154/mrf24j40.c

MSI EC DRIVER

Mail

Nikita Kravets <teackot@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Web-page

<https://github.com/BeardOverflow/msi-ec>

Files

drivers/platform/x86/msi-ec.*

MSI LAPTOP SUPPORT

Mail

"Lee, Chun-Yi" <jlee@suse.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/msi-laptop.c

MSI WMI SUPPORT

Mailing list

platform-driver-x86@vger.kernel.org

Status

Orphan

Files

drivers/platform/x86/msi-wmi.c

MSI001 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/tuners/msi001*

MSI2500 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/usb/msi2500/

MSTAR INTERRUPT CONTROLLER DRIVER

Mail

Mark-PK Tsai <mark-pk.tsai@mediatek.com>, Daniel Palmer
<daniel@thingy.jp>

Status

Maintained

Files

Documentation/devicetree/bindings/interrupt-controller/mstar,
mst-intc.yaml drivers/irqchip/irq-mst-intc.c

MSYSTEMS DISKONCHIP G3 MTD DRIVER

Mail

Robert Jarzmik <robert.jarzmik@free.fr>

Mailing list

linux-mtd@lists.infradead.org

Status

Maintained

Files

drivers/mtd/devices/docg3*

MT9M114 ONSEMI SENSOR DRIVER

Mail

Laurent Pinchart <laurent.pinchart@ideasonboard.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/onnn,mt9m114.yaml
drivers/media/i2c/mt9m114.c

MT9P031 APTINA CAMERA SENSOR

Mail

Laurent Pinchart <laurent.pinchart@ideasonboard.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/aptina,mt9p031.yaml
drivers/media/i2c/mt9p031.c include/media/i2c/mt9p031.h

MT9T112 APTINA CAMERA SENSOR**Mail**

Jacopo Mondì <jacopo@jmondi.org>

Mailing list

linux-media@vger.kernel.org

Status

Odd Fixes

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/i2c/mt9t112.c include/media/i2c/mt9t112.h

MT9V032 APTINA CAMERA SENSOR**Mail**

Laurent Pinchart <laurent.pinchart@ideasonboard.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/mt9v032.txt drivers/
media/i2c/mt9v032.c include/media/i2c/mt9v032.h

MT9V111 APTINA CAMERA SENSOR**Mail**

Jacopo Mondì <jacopo@jmondi.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/aptina,mt9v111.yaml
drivers/media/i2c/mt9v111.c

MULTIFUNCTION DEVICES (MFD)

Mail

Lee Jones <lee@kernel.org>

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/lee/mfd.git](https://git.kernel.org/pub/scm/linux/kernel/git/lee/mfd.git)

Files

Documentation/devicetree/bindings/mfd/ drivers/mfd/ include/
dt-bindings/mfd/ include/linux/mfd/

MULTIMEDIA CARD (MMC) ETC. OVER SPI

Status

Orphan

Files

drivers/mmc/host/mmc_spi.c include/linux/spi/mmc_spi.h

MULTIMEDIA CARD (MMC), SECURE DIGITAL (SD) AND SDIO SUBSYSTEM

Mail

Ulf Hansson <ulf.hansson@linaro.org>

Mailing list

linux-mmc@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/ulfh/mmc.git](https://git.kernel.org/pub/scm/linux/kernel/git/ulfh/mmc.git)

Files

Documentation/devicetree/bindings/mmc/ drivers/mmc/ include/linux/
mmc/ include/uapi/linux/mmc/

MULTIPLEXER SUBSYSTEM

Mail

Peter Rosin <peda@axentia.se>

Status

Maintained

Files

Documentation/ABI/testing/sysfs-class-mux* Documentation/devicetree/
bindings/mux/ drivers/mux/ include/dt-bindings/mux/ include/linux/
mux/

MUSB MULTIPOINT HIGH SPEED DUAL-ROLE CONTROLLER

Mail

Bin Liu <b-liu@ti.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

drivers/usb/musb/

MXL301RF MEDIA DRIVER

Mail

Akihiro Tsukada <tskd08@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Odd Fixes

Files

drivers/media/tuners/mxl301rf*

MXL5007T MEDIA DRIVER

Mail

Michael Krufky <mkrufky@linuxtv.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org> <http://github.com/mkrufky>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

SCM

git <git://linuxtv.org/mkrufky/tuners.git>

Files

drivers/media/tuners/mxl5007t.*

MXSFB DRM DRIVER

Mail

Marek Vasut <marex@denx.de>, Stefan Agner <stefan@agner.ch>

Mailing list

dri-devel@lists.freedesktop.org

Status

Supported

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/devicetree/bindings/display/fsl,lcdif.yaml drivers/
gpu/drm/mxsfb/

MYLEX DAC960 PCI RAID Controller

Mail

Hannes Reinecke <hare@kernel.org>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Files

drivers/scsi/myrb.* drivers/scsi/myrs.*

MYRICOM MYRI-10G 10GbE DRIVER (MYRI10GE)

Mail

Chris Lee <christopher.lee@cspi.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Web-page

<https://www.cspi.com/ethernet-products/support/downloads/>

Files

drivers/net/ethernet/myricom/myri10ge/

NAND FLASH SUBSYSTEM

Mail

Miquel Raynal <miquel.raynal@bootlin.com>

Reviewer

Richard Weinberger <richard@nod.at>

Mailing list

linux-mtd@lists.infradead.org

Status

Maintained

Web-page

<http://www.linux-mtd.infradead.org/>

Patchwork

<http://patchwork.ozlabs.org/project/linux-mtd/list/>

chat

<irc://irc.oftc.net/mtd>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/mtd/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/mtd/linux.git) nand/next

Files

drivers/mtd/nand/ include/linux/mtd/*nand*.h

NATIVE INSTRUMENTS USB SOUND INTERFACE DRIVER

Mail

Daniel Mack <zonique@gmail.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Web-page

<http://www.native-instruments.com>

Files

sound/usb/caiaq/

NATSEMI ETHERNET DRIVER (DP8381x)

Status

Orphan

Files

drivers/net/ethernet/natsemi/natsemi.c

NCR 5380 SCSI DRIVERS

Mail

Finn Thain <ftthain@linux-m68k.org>, Michael Schmitz
<schmitzmic@gmail.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Maintained

Files

scsi/g_NCR5380 drivers/scsi/NCR5380.* drivers/scsi/arm/cumana_1.
c drivers/scsi/arm/oak.c drivers/scsi/atari_scsi.* drivers/scsi/
dmx3191d.c drivers/scsi/g_NCR5380.* drivers/scsi/mac_scsi.* drivers/
scsi/sun3_scsi.* drivers/scsi/sun3_scsi_vme.c

NCSI LIBRARY

Mail

Samuel Mendoza-Jonas <sam@mendozajonas.com>

Status

Maintained

Files

net/ncsi/

NCT6775 HARDWARE MONITOR DRIVER - CORE & PLATFORM DRIVER

Mail

Guenter Roeck <linux@roeck-us.net>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/nct6775 drivers/hwmon/nct6775-core.c drivers/hwmon/
nct6775-platform.c drivers/hwmon/nct6775.h

NCT6775 HARDWARE MONITOR DRIVER - I2C DRIVER

Mail

Zev Weiss <zev@bewilderbeest.net>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/hwmon/nuvoton,nct6775.yaml
drivers/hwmon/nct6775-i2c.c

NETDEVSIM

Mail

Jakub Kicinski <kuba@kernel.org>

Status

Maintained

Files

drivers/net/netdevsim/*

NETEM NETWORK EMULATOR

Mail

Stephen Hemminger <stephen@networkplumber.org>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

net/sched/sch_netem.c

NETERION 10GbE DRIVERS (s2io)

Mail

Jon Mason <jdmason@kudzu.us>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

networking/device_drivers/ethernet/neterion/s2io drivers/net/ethernet/
neterion/

NETFILTER

Mail

Pablo Neira Ayuso <pablo@netfilter.org>, Jozsef Kadlecsik
<kadlec@netfilter.org>, Florian Westphal <fw@strlen.de>

Mailing list

netfilter-devel@vger.kernel.org, coreteam@netfilter.org

Status

Maintained

Web-page

<http://www.netfilter.org/> <http://www.iptables.org/> <http://www.nftables.org/>

Patchwork

<http://patchwork.ozlabs.org/project/netfilter-devel/list/>

chat

<irc://irc.libera.chat/netfilter>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/netfilter/nf.git](https://git.kernel.org/pub/scm/linux/kernel/git/netfilter/nf.git) git
[git://git.kernel.org/pub/scm/linux/kernel/git/netfilter/nf-next.git](https://git.kernel.org/pub/scm/linux/kernel/git/netfilter/nf-next.git)

Files

include/linux/netfilter* include/linux/netfilter/ include/net/
netfilter/ include/uapi/linux/netfilter* include/uapi/linux/
netfilter/ net/*/netfilter.c net/*/netfilter/ net/bridge/
br_netfilter*.c net/netfilter/

NETROM NETWORK LAYER

Mail

Ralf Baechle <ralf@linux-mips.org>

Mailing list

linux-hams@vger.kernel.org

Status

Maintained

Web-page

<https://linux-ax25.in-berlin.de>

Files

include/net/netrom.h include/uapi/linux/netrom.h net/netrom/

NETRONIX EMBEDDED CONTROLLER

Mail

Jonathan Neuschäfer <j.neuschaefer@gmx.net>

Status

Maintained

Files

Documentation/devicetree/bindings/mfd/netronix,ntxec.yaml drivers/
mfd/ntxec.c drivers/pwm/pwm-ntxec.c drivers/rtc/rtc-ntxec.c include/
linux/mfd/ntxec.h

NETRONOME ETHERNET DRIVERS

Mail

Louis Peens <louis.peens@corigine.com>

Reviewer

Jakub Kicinski <kuba@kernel.org>

Mailing list

oss-drivers@corigine.com

Status

Maintained

Files

drivers/net/ethernet/netronome/

NETWORK BLOCK DEVICE (NBD)

Mail

Josef Bacik <josef@toxicpanda.com>

Mailing list

linux-block@vger.kernel.org, nbd@other.debian.org

Status

Maintained

Files

admin-guide/blockdev/nbd drivers/block/nbd.c include/trace/events/nbd.
h include/uapi/linux/nbd.h

NETWORK DROP MONITOR

Mail

Neil Horman <nhorman@tuxdriver.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Web-page

<https://fedorahosted.org/dropwatch/>

Files

```
include/uapi/linux/net_dropmon.h net/core/drop_monitor.c
```

NETWORKING DRIVERS

Mail

"David S. Miller" <davem@davemloft.net>, Eric Dumazet <edumazet@google.com>, Jakub Kicinski <kuba@kernel.org>, Paolo Abeni <pabeni@redhat.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

P

process/maintainer-netdev

Patchwork

<https://patchwork.kernel.org/project/netdevbpf/list/>

SCM

```
git          git://git.kernel.org/pub/scm/linux/kernel/git/netdev/net.git          git
git://git.kernel.org/pub/scm/linux/kernel/git/netdev/net-next.git
```

Files

```
Documentation/devicetree/bindings/net/ network-
ing/net_cachelines/net_device drivers/connector/ drivers/net/ include/
dt-bindings/net/ include/linux/cn_proc.h include/linux/etherdevice.h
include/linux/fcdevice.h include/linux/fddidevice.h include/linux/
hippidevice.h include/linux/if_* include/linux/inetdevice.h include/
linux/netdevice.h include/uapi/linux/cn_proc.h include/uapi/linux/
if_* include/uapi/linux/netdevice.h
```

Excluded

```
drivers/net/wireless/
```

NETWORKING DRIVERS (WIRELESS)

Mail

Kalle Valo <kvalo@kernel.org>

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

Web-page

<https://wireless.wiki.kernel.org/>

Patchwork

<https://patchwork.kernel.org/project/linux-wireless/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/wireless/wireless.git](https://git.kernel.org/pub/scm/linux/kernel/git/wireless/wireless.git) git
git://git.kernel.org/pub/scm/linux/kernel/git/wireless/wireless-next.git

Files

Documentation/devicetree/bindings/net/wireless/ drivers/net/
wireless/

NETWORKING [DSA]

Mail

Andrew Lunn <andrew@lunn.ch>, Florian Fainelli <f.fainelli@gmail.com>,
Vladimir Oltean <olteanv@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/net/dsa/ Documentation/devicetree/
bindings/net/ethernet-switch-port.yaml Documentation/devicetree/
bindings/net/ethernet-switch.yaml drivers/net/dsa/ include/linux/
dsa/ include/linux/platform_data/dsa.h include/net/dsa.h net/dsa/
tools/testing/selftests/drivers/net/dsa/

NETWORKING [GENERAL]

Mail

"David S. Miller" <davem@davemloft.net>, Eric Dumazet <edumazet@google.com>,
Jakub Kicinski <kuba@kernel.org>, Paolo Abeni
<pabeni@redhat.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

P

process/maintainer-netdev

Patchwork

<https://patchwork.kernel.org/project/netdevbpf/list/>

bugs

<mailto:netdev@vger.kernel.org>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/netdev/net.git](https://git.kernel.org/pub/scm/linux/kernel/git/netdev/net.git) git
git://git.kernel.org/pub/scm/linux/kernel/git/netdev/net-next.git

Files

core-api/netlink Documentation/netlink/ Documentation/networking/
Documentation/networking/net_cachelines/ *process/maintainer-netdev*
Documentation/userspace-api/netlink/ include/linux/framer/
framer-provider.h include/linux/framer/framer.h include/linux/in.h
include/linux/indirect_call_wrapper.h include/linux/net.h include/
linux/netdevice.h include/net/ include/uapi/linux/in.h include/uapi/
linux/net.h include/uapi/linux/net_namespace.h include/uapi/linux/
netdevice.h lib/net_utils.c lib/random32.c net/ tools/net/ tools/
testing/selftests/net/

Excluded

net/9p/ net/bluetooth/

NETWORKING [IPSEC]

Mail

Steffen Klassert <steffen.klassert@secunet.com>, Herbert Xu <herbert@gondor.apana.org.au>, "David S. Miller" <davem@davemloft.net>

Mailing list

netdev@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/klassert/ipsec.git](https://git.kernel.org/pub/scm/linux/kernel/git/klassert/ipsec.git) git
git://git.kernel.org/pub/scm/linux/kernel/git/klassert/ipsec-next.git

Files

include/net/xfrm.h include/uapi/linux/xfrm.h net/ipv4/ah4.c net/ipv4/
esp4* net/ipv4/ip_vti.c net/ipv4/ipcomp.c net/ipv4/xfrm* net/ipv6/ah6.
c net/ipv6/esp6* net/ipv6/ip6_vti.c net/ipv6/ipcomp6.c net/ipv6/xfrm*
net/key/ net/xfrm/ tools/testing/selftests/net/ipsec.c

NETWORKING [IPv4/IPv6]**Mail**

"David S. Miller" <davem@davemloft.net>, David Ahern <dsahern@kernel.org>

Mailing list

netdev@vger.kernel.org

Status

Maintained

SCM

`git git://git.kernel.org/pub/scm/linux/kernel/git/netdev/net.git`

Files

`arch/x86/net/* include/linux/ip.h include/linux/ipv6* include/net/fib* include/net/ip* include/net/route.h net/ipv4/ net/ipv6/`

NETWORKING [LABELED] (NetLabel, Labeled IPsec, SECMARK)**Mail**

Paul Moore <paul@paul-moore.com>

Mailing list

netdev@vger.kernel.org, linux-security-module@vger.kernel.org

Status

Supported

Web-page

<https://github.com/netlabel>

Files

`Documentation/netlabel/ include/net/calipso.h include/net/cipso_ipv4.h include/net/netlabel.h include/uapi/linux/netfilter/xt_CONNSECMARK.h include/uapi/linux/netfilter/xt_SECMARK.h net/ipv4/cipso_ipv4.c net/ipv6/calipso.c net/netfilter/xt_CONNSECMARK.c net/netfilter/xt_SECMARK.c net/netlabel/`

NETWORKING [MACSEC]**Mail**

Sabrina Dubroca <sd@queasysnail.net>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

`drivers/net/macsec.c include/net/macsec.h include/uapi/linux/if_macsec.h`

Content regex

`macsec \bmdo_`

NETWORKING [MPTCP]

Mail

Matthieu Baerts <matttbe@kernel.org>, Mat Martineau <martineau@kernel.org>

Reviewer

Geliang Tang <geliang@kernel.org>

Mailing list

netdev@vger.kernel.org, mptcp@lists.linux.dev

Status

Maintained

Web-page

https://github.com/multipath-tcp/mptcp_net-next/wiki

bugs

https://github.com/multipath-tcp/mptcp_net-next/issues

SCM

git https://github.com/multipath-tcp/mptcp_net-next.git export-net git https://github.com/multipath-tcp/mptcp_net-next.git export

Files

Documentation/netlink/specs/mptcp_pm.yaml networking/mptcp-sysctl
include/net/mptcp.h include/trace/events/mptcp.h include/uapi/linux/
mptcp*.h net/mptcp/ tools/testing/selftests/bpf/*/*mptcp*.c tools/
testing/selftests/net/mptcp/

NETWORKING [TCP]

Mail

Eric Dumazet <edumazet@google.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

networking/net_cachelines/tcp_sock include/linux/tcp.h include/net/
tcp.h include/trace/events/tcp.h include/uapi/linux/tcp.h net/ipv4/
syncookies.c net/ipv4/tcp*.c net/ipv6/syncookies.c net/ipv6/tcp*.c

NETWORKING [TLS]

Mail

Boris Pismenny <borisp@nvidia.com>, John Fastabend
<john.fastabend@gmail.com>, Jakub Kicinski <kuba@kernel.org>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

include/net/tls.h include/uapi/linux/tls.h net/tls/*

NETXEN (1/10) GbE SUPPORT

Mail

Manish Chopra <manishc@marvell.com>, Rahul Verma <rahulv@marvell.com>,
GR-Linux-NIC-Dev@marvell.com

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/ethernet/qlogic/netxen/

NET_FAILOVER MODULE

Mail

Sridhar Samudrala <sridhar.samudrala@intel.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

networking/net_failover drivers/net/net_failover.c include/net/
net_failover.h

NEXTHOP

Mail

David Ahern <dsahern@kernel.org>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

include/net/netns/nexthop.h include/net/nexthop.h include/uapi/linux/nexthop.h net/ipv4/nexthop.c

NFC SUBSYSTEM

Mail

Krzysztof Kozlowski <krzysztof.kozlowski@linaro.org>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/nfc/ drivers/nfc/ include/net/nfc/ include/uapi/linux/nfc.h net/nfc/

NFC VIRTUAL NCI DEVICE DRIVER

Mail

Bongsu Jeon <bongsu.jeon@samsung.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/nfc/virtual_ncidev.c tools/testing/selftests/nci/

NFS, SUNRPC, AND LOCKD CLIENTS

Mail

Trond Myklebust <trond.myklebust@hammerspace.com>, Anna Schumaker <anna@kernel.org>

Mailing list

linux-nfs@vger.kernel.org

Status

Maintained

Web-page

<http://client.linux-nfs.org>

SCM

git <git://git.linux-nfs.org/projects/trondmy/linux-nfs.git>

Files

Documentation/filesystems/nfs/ fs/lockd/ fs/nfs/ fs/nfs_common/
include/linux/lockd/ include/linux/nfs* include/linux/sunrpc/
include/uapi/linux/nfs* include/uapi/linux/sunrpc/ net/sunrpc/

NILFS2 FILESYSTEM**Mail**

Ryusuke Konishi <konishi.ryusuke@gmail.com>

Mailing list

linux-nilfs@vger.kernel.org

Status

Supported

Web-page

<https://nilfs.sourceforge.io/> <https://nilfs.osdn.jp/>

SCM

git <https://github.com/konis/nilfs2.git>

Files

filesystems/nilfs2 fs/nilfs2/ include/trace/events/nilfs2.h include/uapi/
linux/nilfs2_api.h include/uapi/linux/nilfs2_ondisk.h

NINJA SCSI-3 / NINJA SCSI-32Bi (16bit/CardBus) PCMCIA SCSI HOST ADAPTER DRIVER**Mail**

YOKOTA Hiroshi <yokota@netlab.is.tsukuba.ac.jp>

Status

Maintained

Web-page

<http://www.netlab.is.tsukuba.ac.jp/~yokota/izumi/ninja/>

Files

scsi/NinjaSCSI drivers/scsi/pcmcia/nsp_*

NINJA SCSI-32Bi/UDE PCI/CARDBUS SCSI HOST ADAPTER DRIVER

Mail

GOTO Masanori <gotom@debian.or.jp>, YOKOTA Hiroshi
<yokota@netlab.is.tsukuba.ac.jp>

Status

Maintained

Web-page

<http://www.netlab.is.tsukuba.ac.jp/~yokota/izumi/ninja/>

Files

scsi/NinjaSCSI drivers/scsi/nsp32*

NINTENDO HID DRIVER

Mail

Daniel J. Ogorchock <djogorchock@gmail.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/hid/hid-nintendo*

NIOS2 ARCHITECTURE

Mail

Dinh Nguyen <dinguyen@kernel.org>

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/dinguyen/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/dinguyen/linux.git)

Files

arch/nios2/

NITRO ENCLAVES (NE)

Mail

Alexandru Ciobotaru <alcioa@amazon.com>

Mailing list

linux-kernel@vger.kernel.org, The AWS Nitro Enclaves Team <aws-nitro-enclaves-devel@amazon.com>

Status

Supported

Web-page

<https://aws.amazon.com/ec2/nitro/nitro-enclaves/>

Files

virt/ne_overview drivers/virt/nitro_enclaves/ include/linux/
nitro_enclaves.h include/uapi/linux/nitro_enclaves.h samples/
nitro_enclaves/

NITRO SECURE MODULE (NSM)**Mail**

Alexander Graf <graf@amazon.com>

Mailing list

linux-kernel@vger.kernel.org, The AWS Nitro Enclaves Team <aws-nitro-enclaves-devel@amazon.com>

Status

Supported

Web-page

<https://aws.amazon.com/ec2/nitro/nitro-enclaves/>

Files

drivers/misc/nsm.c include/uapi/linux/nsm.h

NOHZ, DYNLOCKS SUPPORT**Mail**

Frederic Weisbecker <frederic@kernel.org>, Thomas Gleixner
<tglx@linutronix.de>, Ingo Molnar <mingo@kernel.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git](https://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git) timers/nohz

Files

include/linux/sched/nohz.h include/linux/tick.h kernel/time/tick*.*

NOKIA N900 CAMERA SUPPORT (ET8EK8 SENSOR, AD5820 FOCUS)**Mail**

Pavel Machek <pavel@ucw.cz>, Sakari Ailus <sakari.ailus@iki.fi>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/i2c/ad5820.c drivers/media/i2c/et8ek8

NOKIA N900 POWER SUPPLY DRIVERS

Reviewer

Pali Rohár <pali@kernel.org>

Files

drivers/power/supply/bq2415x_charger.c drivers/power/supply/
bq27xxx_battery.c drivers/power/supply/bq27xxx_battery_i2c.c drivers/
power/supply/ispl704_charger.c drivers/power/supply/rx51_battery.
c include/linux/power/bq2415x_charger.h include/linux/power/
bq27xxx_battery.h

NOLIBC HEADER FILE

Mail

Willy Tarreau <w@1wt.eu>, Thomas Weißschuh <linux@weissschuh.net>

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/nolibc/linux-nolibc.git](https://git.kernel.org/pub/scm/linux/kernel/git/nolibc/linux-nolibc.git)

Files

tools/include/nolibc/ tools/testing/selftests/nolibc/

NOVATEK NVT-TS I2C TOUCHSCREEN DRIVER

Mail

Hans de Goede <hdegoede@redhat.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/input/touchscreen/novatek-nvt-ts.c

NSDEPS

Mail

Matthias Maennich <maennich@google.com>

Status

Maintained

Files

core-api/symbol-namespaces scripts/nsdeps

NTB AMD DRIVER

Mail

Sanjay R Mehta <sanju.mehta@amd.com>, Shyam Sundar S K <Shyam-sundar.S-k@amd.com>

Mailing list

ntb@lists.linux.dev

Status

Supported

Files

drivers/ntb/hw/amd/

NTB DRIVER CORE

Mail

Jon Mason <jdmason@kudzu.us>, Dave Jiang <dave.jiang@intel.com>, Allen Hubbe <allenbh@gmail.com>

Mailing list

ntb@lists.linux.dev

Status

Supported

Web-page

<https://github.com/jonmason/ntb/wiki>

SCM

git <https://github.com/jonmason/ntb.git>

Files

drivers/net/ntb_netdev.c drivers/ntb/ drivers/pci/endpoint/functions/
pci-epf-*ntb.c include/linux/ntb.h include/linux/ntb_transport.h
tools/testing/selftests/ntb/

NTB IDT DRIVER

Mail

Serge Semin <fancer.lancer@gmail.com>

Mailing list

ntb@lists.linux.dev

Status

Supported

Files

drivers/ntb/hw/idt/

NTB INTEL DRIVER

Mail

Dave Jiang <dave.jiang@intel.com>

Mailing list

ntb@lists.linux.dev

Status

Supported

Web-page

<https://github.com/davejiang/linux/wiki>

SCM

git <https://github.com/davejiang/linux.git>

Files

drivers/ntb/hw/intel/

NTFS FILESYSTEM

Mail

Anton Altaparmakov <anton@tuxera.com>

Reviewer

Namjae Jeon <linkinjeon@kernel.org>

Mailing list

linux-ntfs-dev@lists.sourceforge.net

Status

Supported

Web-page

<http://www.tuxera.com/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/aia21/ntfs.git](https://git.kernel.org/pub/scm/linux/kernel/git/aia21/ntfs.git)

Files

filesystems/ntfs fs/ntfs/

NTFS3 FILESYSTEM

Mail

Konstantin Komarov <almaz.alexandrovich@paragon-software.com>

Mailing list

ntfs3@lists.linux.dev

Status

Supported

Web-page

<http://www.paragon-software.com/>

SCM

git <https://github.com/Paragon-Software-Group/linux-ntfs3.git>

Files

filesystems/ntfs3 fs/ntfs3/

NUBUS SUBSYSTEM

Mail

Finn Thain <fthain@linux-m68k.org>

Mailing list

linux-m68k@lists.linux-m68k.org

Status

Maintained

Files

arch/*/include/asm/nubus.h drivers/nubus/ include/linux/nubus.h
include/uapi/linux/nubus.h

NVIDIA (riva**fb** and nvidia**fb**) FRAMEBUFFER DRIVER

Mail

Antonino Daplas <adaplas@gmail.com>

Mailing list

linux-fbdev@vger.kernel.org

Status

Maintained

Files

drivers/video/fbdev/nvidia/ drivers/video/fbdev/riva/

NVIDIA WMI EC BACKLIGHT DRIVER

Mail

Daniel Dadap <ddadap@nvidia.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Supported

Files

drivers/platform/x86/nvidia-wmi-ec-backlight.c include/linux/
platform_data/x86/nvidia-wmi-ec-backlight.h

NVM EXPRESS DRIVER

Mail

Keith Busch <kbusch@kernel.org>, Jens Axboe <axboe@fb.com>, Christoph Hellwig <hch@lst.de>, Sagi Grimberg <sagi@grimberg.me>

Mailing list

linux-nvme@lists.infradead.org

Status

Supported

Web-page

<http://git.infradead.org/nvme.git>

SCM

git [git://git.infradead.org/nvme.git](http://git.infradead.org/nvme.git)

Files

Documentation/nvme/ drivers/nvme/common/ drivers/nvme/host/ include/
linux/nvme-*.h include/linux/nvme.h include/uapi/linux/nvme_ioctl.h

NVM EXPRESS FABRICS AUTHENTICATION

Mail

Hannes Reinecke <hare@suse.de>

Mailing list

linux-nvme@lists.infradead.org

Status

Supported

Files

drivers/nvme/host/auth.c drivers/nvme/target/auth.c drivers/nvme/
target/fabrics-cmd-auth.c include/linux/nvme-auth.h

NVM EXPRESS FC TRANSPORT DRIVERS

Mail

James Smart <james.smart@broadcom.com>

Mailing list

linux-nvme@lists.infradead.org

Status

Supported

Files

drivers/nvme/host/fc.c drivers/nvme/target/fc.c drivers/nvme/target/
fcloop.c include/linux/nvme-fc-driver.h include/linux/nvme-fc.h

NVM EXPRESS HARDWARE MONITORING SUPPORT

Mail

Guenter Roeck <linux@roeck-us.net>

Mailing list

linux-nvme@lists.infradead.org

Status

Supported

Files

drivers/nvme/host/hwmon.c

NVM EXPRESS TARGET DRIVER

Mail

Christoph Hellwig <hch@lst.de>, Sagi Grimberg <sagi@grimberg.me>, Chai-
tanya Kulkarni <kch@nvidia.com>

Mailing list

linux-nvme@lists.infradead.org

Status

Supported

Web-page

<http://git.infradead.org/nvme.git>

SCM

git [git://git.infradead.org/nvme.git](http://git.infradead.org/nvme.git)

Files

drivers/nvme/target/

NVMEM FRAMEWORK

Mail

Srinivas Kandagatla <srinivas.kandagatla@linaro.org>

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/srini/nvmem.git](https://git.kernel.org/pub/scm/linux/kernel/git/srini/nvmem.git)

Files

Documentation/ABI/stable/sysfs-bus-nvmem Documentation/devicetree/
bindings/nvmem/ drivers/nvmem/ include/linux/nvmem-consumer.h
include/linux/nvmem-provider.h

NXP BLUETOOTH WIRELESS DRIVERS

Mail

Amitkumar Karwar <amitkumar.karwar@nxp.com>, Neeraj Kale
<neeraj.sanjaykale@nxp.com>

Status

Maintained

Files

Documentation/devicetree/bindings/net/bluetooth/nxp,88w8987-bt.yaml
drivers/bluetooth/btnxpuart.c

NXP C45 TJA11XX PHY DRIVER

Mail

Andrei Botila <andrei.botila@oss.nxp.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/phy/nxp-c45-tja11xx*

NXP FSPI DRIVER

Mail

Han Xu <han.xu@nxp.com>, Haibo Chen <haibo.chen@nxp.com>

Reviewer

Yogesh Gaur <yogeshgaur.83@gmail.com>

Mailing list

linux-spi@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/spi/spi-nxp-fspi.yaml drivers/spi/spi-nxp-fspi.c

NXP FXAS21002C DRIVER**Mail**

Rui Miguel Silva <rmfrfs@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/gyroscope/nxp,fxas21002c.yaml
drivers/iio/gyro/fxas21002c.h drivers/iio/gyro/fxas21002c_core.c
drivers/iio/gyro/fxas21002c_i2c.c drivers/iio/gyro/fxas21002c_spi.c

NXP I.MX 7D/6SX/6UL/93 AND VF610 ADC DRIVER**Mail**

Haibo Chen <haibo.chen@nxp.com>

Mailing list

linux-iio@vger.kernel.org, imx@lists.linux.dev

Status

Maintained

Files

Documentation/devicetree/bindings/iio/adc/fsl,imx7d-adc.yaml
Documentation/devicetree/bindings/iio/adc/fsl,vf610-adc.yaml
Documentation/devicetree/bindings/iio/adc/nxp,imx93-adc.yaml
drivers/iio/adc/imx7d_adc.c drivers/iio/adc/imx93_adc.c drivers/
iio/adc/vf610_adc.c

NXP I.MX 8M ISI DRIVER**Mail**

Laurent Pinchart <laurent.pinchart@ideasonboard.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/nxp,imx8-isi.yaml drivers/
media/platform/nxp/imx8-isi/

NXP i.MX 8MP DW100 V4L2 DRIVER

Mail

Xavier Roumegue <xavier.roumegue@oss.nxp.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/nxp,dw100.yaml userspace-
api/media/drivers/dw100 drivers/media/platform/nxp/dw100/ include/
uapi/linux/dw100.h

NXP i.MX 8MQ DCSS DRIVER

Mail

Laurentiu Palcu <laurentiu.palcu@oss.nxp.com>

Reviewer

Lucas Stach <l.stach@pengutronix.de>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git git://anongit.freedesktop.org/drm/drm-misc

Files

Documentation/devicetree/bindings/display/imx/nxp,imx8mq-dcss.yaml
drivers/gpu/drm/imx/dcscs/

NXP i.MX 8QXP ADC DRIVER

Mail

Cai Huoqing <cai.huoqing@linux.dev>, Haibo Chen <haibo.chen@nxp.com>

Mailing list

imx@lists.linux.dev, linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/adc/nxp,imx8qxp-adc.yaml
drivers/iio/adc/imx8qxp-adc.c

NXP i.MX 8QXP/8QM JPEG V4L2 DRIVER

Mail

Mirela Rabulea <mirela.rabulea@nxp.com>

Mailing list

imx@lists.linux.dev, linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/nxp,imx8-jpeg.yaml drivers/
media/platform/nxp/imx-jpeg

NXP i.MX CLOCK DRIVERS

Mail

Abel Vesa <abelvesa@kernel.org>

Reviewer

Peng Fan <peng.fan@nxp.com>

Mailing list

linux-clk@vger.kernel.org, imx@lists.linux.dev

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/abelvesa/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/abelvesa/linux.git) clk/imx

Files

Documentation/devicetree/bindings/clock/imx* drivers/clk/imx/
include/dt-bindings/clock/imx*

NXP PF8100/PF8121A/PF8200 PMIC REGULATOR DEVICE DRIVER

Mail

Jagan Teki <jagan@amarulasolutions.com>

Status

Maintained

Files

Documentation/devicetree/bindings/regulator/nxp,pf8x00-regulator.
yaml drivers/regulator/pf8x00-regulator.c

NXP PTN5150A CC LOGIC AND EXTCON DRIVER

Mail

Krzysztof Kozlowski <krzysztof.kozlowski@linaro.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/extcon/extcon-ptn5150.yaml
drivers/extcon/extcon-ptn5150.c

NXP SGTL5000 DRIVER

Mail

Fabio Estevam <festevam@gmail.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/sound/sgtl5000.yaml sound/soc/
codecs/sgtl5000*

NXP SJA1105 ETHERNET SWITCH DRIVER

Mail

Vladimir Oltean <olteanv@gmail.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

drivers/net/dsa/sja1105 drivers/net/pcs/pcs-xpcs-nxp.c

NXP TDA998X DRM DRIVER

Mail

Russell King <linux@armlinux.org.uk>

Status

Maintained

SCM

git git://git.armlinux.org.uk/~rmk/linux-arm.git drm-tda998x-devel git
git://git.armlinux.org.uk/~rmk/linux-arm.git drm-tda998x-fixes

Files

drivers/gpu/drm/i2c/tda998x_drv.c include/drm/i2c/tda998x.h include/
dt-bindings/display/tda998x.h

Content regex

"nxp,tda998x"

NXP TFA9879 DRIVER**Mail**

Peter Rosin <peda@axentia.se>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/sound/nxp,tfa9879.yaml sound/soc/
codecs/tfa9879*

NXP-NCI NFC DRIVER**Status**

Orphan

Files

Documentation/devicetree/bindings/net/nfc/nxp,nci.yaml drivers/nfc/
nxp-nci

NXP/Goodix TFA989X (TFA1) DRIVER**Mail**

Stephan Gerhold <stephan@gerhold.net>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/sound/nxp,tfa989x.yaml sound/soc/
codecs/tfa989x.c

NZXT-KRAKEN2 HARDWARE MONITORING DRIVER

Mail

Jonas Malaco <jonas@protocubo.io>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/nzxt-kraken2 drivers/hwmon/nzxt-kraken2.c

NZXT-SMART2 HARDWARE MONITORING DRIVER

Mail

Aleksandr Mezin <mezin.alexander@gmail.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/nzxt-smart2 drivers/hwmon/nzxt-smart2.c

OBJAGG

Mail

Jiri Pirko <jiri@resnulli.us>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

include/linux/objagg.h lib/objagg.c lib/test_objagg.c

OBJPOOL

Mail

Matt Wu <wuqiang.matt@bytedance.com>

Status

Supported

Files

include/linux/objpool.h lib/objpool.c lib/test_objpool.c

OBJTOOL

Mail

Josh Poimboeuf <jpoimboe@kernel.org>, Peter Zijlstra <peterz@infradead.org>

Status

Supported

Files

include/linux/objtool*.h tools/objtool/

OCELOT ETHERNET SWITCH DRIVER

Mail

Vladimir Oltean <vladimir.oltean@nxp.com>, Claudiu Manoil
<claudiu.manoil@nxp.com>, Alexandre Belloni <alexandre.belloni@bootlin.com>, UNGLinuxDriver@microchip.com

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/dsa/ocelot/* drivers/net/ethernet/mscc/ include/soc/
mscc/ocelot* net/dsa/tag_ocelot.c net/dsa/tag_ocelot_8021q.c tools/
testing/selftests/drivers/net/ocelot/*

OCELOT EXTERNAL SWITCH CONTROL

Mail

Colin Foster <colin.foster@in-advantage.com>

Status

Supported

Files

Documentation/devicetree/bindings/mfd/mscc,ocelot.yaml drivers/mfd/
ocelot* drivers/net/dsa/ocelot/ocelot_ext.c include/linux/mfd/ocelot.
h

OCXL (Open Coherent Accelerator Processor Interface OpenCAPI) DRIVER

Mail

Frederic Barrat <fbarrat@linux.ibm.com>, Andrew Donnellan
<ajd@linux.ibm.com>

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Supported

Files

userspace-api/accelerators/ocxl arch/powerpc/include/asm/pnv-ocxl.h arch/
powerpc/platforms/powernv/ocxl.c drivers/misc/ocxl/ include/misc/
ocxl* include/uapi/misc/ocxl.h

OMAP AUDIO SUPPORT

Mail

Peter Ujfalusi <peter.ujfalusi@gmail.com>, Jarkko Nikula
<jarkko.nikula@bitmer.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers), linux-omap@vger.kernel.org

Status

Maintained

Files

sound/soc/ti/n810.c sound/soc/ti/omap* sound/soc/ti/rx51.c sound/soc/
ti/sdma-pcm.*

OMAP CLOCK FRAMEWORK SUPPORT

Mail

Paul Walmsley <paul@pwsan.com>

Mailing list

linux-omap@vger.kernel.org

Status

Maintained

Files

arch/arm/*omap*/clock*

OMAP DEVICE TREE SUPPORT

Mail

Benoît Cousson <bcousson@baylibre.com>, Tony Lindgren
<tony@atomide.com>

Mailing list

linux-omap@vger.kernel.org, devicetree@vger.kernel.org

Status

Maintained

Files

arch/arm/boot/dts/ti/omap/

OMAP DISPLAY SUBSYSTEM and FRAMEBUFFER SUPPORT (DSS2)

Mailing list

linux-omap@vger.kernel.org, linux-fbdev@vger.kernel.org

Status

Orphan

Files

arch/arm/omap/dss drivers/video/fbdev/omap2/

OMAP FRAMEBUFFER SUPPORT

Mailing list

linux-fbdev@vger.kernel.org, linux-omap@vger.kernel.org

Status

Orphan

Files

drivers/video/fbdev/omap/

OMAP GENERAL PURPOSE MEMORY CONTROLLER SUPPORT

Mail

Roger Quadros <rogerq@kernel.org>, Tony Lindgren <tony@atomide.com>

Mailing list

linux-omap@vger.kernel.org

Status

Maintained

Files

arch/arm/mach-omap2/*gpmc* drivers/memory/omap-gpmc.c

OMAP GPIO DRIVER

Mail

Grygorii Strashko <grygorii.strashko@ti.com>, Santosh Shilimkar <ssantosh@kernel.org>, Kevin Hilman <khilman@kernel.org>

Mailing list

linux-omap@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/gpio/ti,omap-gpio.yaml drivers/
gpio/gpio-omap.c

OMAP HARDWARE SPINLOCK SUPPORT

Mailing list

linux-omap@vger.kernel.org

Status

Orphan

Files

drivers/hwspinlock/omap_hwspinlock.c

OMAP HS MMC SUPPORT

Mailing list

linux-mmc@vger.kernel.org, linux-omap@vger.kernel.org

Status

Orphan

Files

drivers/mmc/host/omap_hsmmc.c

OMAP HWMOD DATA

Mail

Paul Walmsley <paul@pwsan.com>

Mailing list

linux-omap@vger.kernel.org

Status

Maintained

Files

arch/arm/mach-omap2/omap_hwmod*data*

OMAP HWMOD SUPPORT

Mail

Benoît Cousson <bcousson@baylibre.com>, Paul Walmsley <paul@pwsan.com>

Mailing list

linux-omap@vger.kernel.org

Status

Maintained

Files

arch/arm/mach-omap2/omap_hwmod.*

OMAP I2C DRIVER

Mail

Vignesh R <vigneshr@ti.com>

Mailing list

linux-omap@vger.kernel.org, linux-i2c@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/i2c/ti,omap4-i2c.yaml drivers/i2c/busses/i2c-omap.c

OMAP IMAGING SUBSYSTEM (OMAP3 ISP and OMAP4 ISS)

Mail

Laurent Pinchart <laurent.pinchart@ideasonboard.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/ti,omap3isp.txt drivers/media/platform/ti/omap3isp/ drivers/staging/media/omap4iss/

OMAP MMC SUPPORT

Mail

Aaro Koskinen <aaro.koskinen@iki.fi>

Mailing list

linux-omap@vger.kernel.org

Status

Odd Fixes

Files

drivers/mmc/host/omap.c

OMAP POWER MANAGEMENT SUPPORT

Mail

Kevin Hilman <khilman@kernel.org>

Mailing list

linux-omap@vger.kernel.org

Status

Maintained

Files

arch/arm/*omap*/*pm* drivers/cpufreq/omap-cpufreq.c

OMAP POWERDOMAIN SOC ADAPTATION LAYER SUPPORT

Mail

Paul Walmsley <paul@pwsan.com>

Mailing list

linux-omap@vger.kernel.org

Status

Maintained

Files

arch/arm/mach-omap2/prm*

OMAP RANDOM NUMBER GENERATOR SUPPORT

Mail

Deepak Saxena <dsaxena@plexity.net>

Status

Maintained

Files

drivers/char/hw_random/omap-rng.c

OMAP USB SUPPORT

Mailing list

linux-usb@vger.kernel.org, linux-omap@vger.kernel.org

Status

Orphan

Files

arch/arm/*omap*/usb* drivers/usb/*/*omap*

OMAP/NEWFLOW NANOBONE MACHINE SUPPORT

Mail

Mark Jackson <mpfj@newflow.co.uk>

Mailing list

linux-omap@vger.kernel.org

Status

Maintained

Files

arch/arm/boot/dts/ti/omap/am335x-nano.dts

OMAP1 SUPPORT

Mail

Aaro Koskinen <aaro.koskinen@iki.fi>, Janusz Krzysztofik
<jmkrzysztof@gmail.com>, Tony Lindgren <tony@atomide.com>

Mailing list

linux-omap@vger.kernel.org

Status

Maintained

Patchwork

<http://patchwork.kernel.org/project/linux-omap/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tmlind/linux-omap.git](https://git.kernel.org/pub/scm/linux/kernel/git/tmlind/linux-omap.git)

Files

arch/arm/configs/omap1_defconfig arch/arm/mach-omap1/ drivers/
i2c/busses/i2c-omap.c include/linux/platform_data/ams-delta-fiq.h
include/linux/platform_data/i2c-omap.h

OMAP2+ SUPPORT

Mail

Tony Lindgren <tony@atomide.com>

Mailing list

linux-omap@vger.kernel.org

Status

Maintained

Web-page

<http://www.muru.com/linux/omap/> <http://linux.omap.com/>

Patchwork

<http://patchwork.kernel.org/project/linux-omap/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tmlind/linux-omap.git](https://git.kernel.org/pub/scm/linux/kernel/git/tmlind/linux-omap.git)

Files

Documentation/devicetree/bindings/arm/ti/omap.yaml arch/arm/configs/
omap2plus_defconfig arch/arm/mach-omap2/ drivers/bus/omap*.[ch]
drivers/bus/ti-sysc.c drivers/gpio/gpio-tps65219.c drivers/i2c/
busses/i2c-omap.c drivers/irqchip/irq-omap-intc.c drivers/mfd/
omap.c drivers/mfd/menelaus.c drivers/mfd/palmas.c drivers/mfd/
tps65217.c drivers/mfd/tps65218.c drivers/mfd/tps65219.c drivers/
mfd/tps65910.c drivers/mfd/twl-core.[ch] drivers/mfd/twl4030*.c
drivers/mfd/twl6030*.c drivers/mfd/twl6040*.c drivers/regulator/
palmas-regulator*.c drivers/regulator/pbias-regulator.c drivers/
regulator/tps65217-regulator.c drivers/regulator/tps65218-regulator.
c drivers/regulator/tps65219-regulator.c drivers/regulator/
tps65910-regulator.c drivers/regulator/twl-regulator.c drivers/


```
regulator/twl6030-regulator.c include/linux/platform_data/i2c-omap.h  
include/linux/platform_data/ti-sysc.h
```

OMFS FILESYSTEM

Mail

Bob Copeland <me@bobcopeland.com>

Mailing list

linux-karma-devel@lists.sourceforge.net

Status

Maintained

Files

filesystems/omfs fs/omfs/

OMNIVISION OG01A1B SENSOR DRIVER

Mail

Sakari Ailus <sakari.ailus@linux.intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/i2c/og01a1b.c

OMNIVISION OV01A10 SENSOR DRIVER

Mail

Bingbu Cao <bingbu.cao@intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/i2c/ov01a10.c

OMNIVISION OV02A10 SENSOR DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/ovti,ov02a10.yaml
drivers/media/i2c/ov02a10.c

OMNIVISION OV08D10 SENSOR DRIVER

Mail

Jimmy Su <jimmy.su@intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/i2c/ov08d10.c

OMNIVISION OV08X40 SENSOR DRIVER

Mail

Jason Chen <jason.z.chen@intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/i2c/ov08x40.c

OMNIVISION OV13858 SENSOR DRIVER

Mail

Sakari Ailus <sakari.ailus@linux.intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

`drivers/media/i2c/ov13858.c`

OMNIVISION OV13B10 SENSOR DRIVER

Mail

Arec Kao <arec.kao@intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

`drivers/media/i2c/ov13b10.c`

OMNIVISION OV2680 SENSOR DRIVER

Mail

Rui Miguel Silva <rmfrfs@gmail.com>, Hans de Goede <hansg@kernel.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

`Documentation/devicetree/bindings/media/i2c/ovti,ov2680.yaml`
`drivers/media/i2c/ov2680.c`

OMNIVISION OV2685 SENSOR DRIVER

Mail

Shunqian Zheng <zhengsq@rock-chips.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/ovti,ov2685.yaml
drivers/media/i2c/ov2685.c

OMNIVISION OV2740 SENSOR DRIVER

Mail

Tianshu Qiu <tian.shu.qiu@intel.com>

Reviewer

Sakari Ailus <sakari.ailus@linux.intel.com>, Bingbu Cao
<bingbu.cao@intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/i2c/ov2740.c

OMNIVISION OV4689 SENSOR DRIVER

Mail

Mikhail Rudenko <mike.rudenko@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/ovti,ov4689.yaml
drivers/media/i2c/ov4689.c

OMNIVISION OV5640 SENSOR DRIVER

Mail

Steve Longerbeam <slongerbeam@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

`drivers/media/i2c/ov5640.c`

OMNIVISION OV5647 SENSOR DRIVER

Mail

Dave Stevenson <dave.stevenson@raspberrypi.com>, Jacopo Mondi <jacopo@jmondi.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

`Documentation/devicetree/bindings/media/i2c/ovti,ov5647.yaml`
`drivers/media/i2c/ov5647.c`

OMNIVISION OV5670 SENSOR DRIVER

Mail

Sakari Ailus <sakari.ailus@linux.intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

`Documentation/devicetree/bindings/media/i2c/ovti,ov5670.yaml`
`drivers/media/i2c/ov5670.c`

OMNIVISION OV5675 SENSOR DRIVER

Mail

Sakari Ailus <sakari.ailus@linux.intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/ovti,ov5675.yaml
drivers/media/i2c/ov5675.c

OMNIVISION OV5693 SENSOR DRIVER

Mail

Daniel Scally <djrscally@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/ovti,ov5693.yaml
drivers/media/i2c/ov5693.c

OMNIVISION OV5695 SENSOR DRIVER

Mail

Shunqian Zheng <zhengsq@rock-chips.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/i2c/ov5695.c

OMNIVISION OV64A40 SENSOR DRIVER

Mail

Jacopo Mondi <jacopo.mondi@ideasonboard.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/ovti,ov64a40.yaml
drivers/media/i2c/ov64a40.c

OMNIVISION OV7670 SENSOR DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/ov7670.txt drivers/
media/i2c/ov7670.c

OMNIVISION OV772x SENSOR DRIVER

Mail

Jacopo Mondi <jacopo@jmondi.org>

Mailing list

linux-media@vger.kernel.org

Status

Odd fixes

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/ovti,ov772x.yaml
drivers/media/i2c/ov772x.c include/media/i2c/ov772x.h

OMNIVISION OV7740 SENSOR DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/ov7740.txt drivers/
media/i2c/ov7740.c

OMNIVISION OV8856 SENSOR DRIVER

Mail

Sakari Ailus <sakari.ailus@linux.intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/ov8856.yaml drivers/
media/i2c/ov8856.c

OMNIVISION OV8858 SENSOR DRIVER

Mail

Jacopo Mondi <jacopo.mondi@ideasonboard.com>, Nicholas Roth
<nicholas@rothemail.net>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/ovti,ov8858.yaml
drivers/media/i2c/ov8858.c

OMNIVISION OV9282 SENSOR DRIVER

Mail

Dave Stevenson <dave.stevenson@raspberrypi.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/ovti,ov9282.yaml
drivers/media/i2c/ov9282.c

OMNIVISION OV9640 SENSOR DRIVER

Mail

Petr Cvek <petrcvekc@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/i2c/ov9640.*

OMNIVISION OV9650 SENSOR DRIVER

Mail

Sakari Ailus <sakari.ailus@linux.intel.com>

Reviewer

Akinobu Mita <akinobu.mita@gmail.com>, Sylwester Nawrocki
<s.nawrocki@samsung.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/ov9650.txt drivers/
media/i2c/ov9650.c

OMNIVISION OV9734 SENSOR DRIVER

Mail

Tianshu Qiu <tian.shu.qiu@intel.com>

Reviewer

Bingbu Cao <bingbu.cao@intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/i2c/ov9734.c

ONBOARD USB HUB DRIVER

Mail

Matthias Kaehlcke <mka@chromium.org>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-bus-platform-onboard-usb-hub
drivers/usb/misc/onboard_usb_hub.c

ONENAND FLASH DRIVER

Mail

Kyungmin Park <kyungmin.park@samsung.com>

Mailing list

linux-mtd@lists.infradead.org

Status

Maintained

Files

drivers/mtd/nand/onenand/ include/linux/mtd/onenand*.h

ONEXPLAYER FAN DRIVER

Mail

Derek John Clark <derekjohn.clark@gmail.com>, Joaquín Ignacio Aramendía <samsagax@gmail.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

drivers/hwmon/oxp-sensors.c

ONIE TLV NVMEM LAYOUT DRIVER

Mail

Miquel Raynal <miquel.raynal@bootlin.com>

Status

Maintained

Files

Documentation/devicetree/bindings/nvmem/layouts/onie,tlv-layout.yaml
drivers/nvmem/layouts/onie-tlv.c

ONION OMEGA2+ BOARD

Mail

Harvey Hunt <harveyhuntnexus@gmail.com>

Mailing list

linux-mips@vger.kernel.org

Status

Maintained

Files

arch/mips/boot/dts/ralink/omega2p.dts

ONSEMI ETHERNET PHY DRIVERS

Mail

Piergiorgio Beruto <piergiorgio.beruto@gmail.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Web-page

<http://www.onsemi.com>

Files

drivers/net/phy/ncn*

OP-TEE DRIVER

Mail

Jens Wiklander <jens.wiklander@linaro.org>

Mailing list

op-tee@lists.trustedfirmware.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-bus-optee-devices drivers/tee/optee/

OP-TEE RANDOM NUMBER GENERATOR (RNG) DRIVER

Mail

Sumit Garg <sumit.garg@linaro.org>

Mailing list

op-tee@lists.trustedfirmware.org

Status

Maintained

Files

drivers/char/hw_random/optee-rng.c

OP-TEE RTC DRIVER

Mail

Clément Léger <clement.leger@bootlin.com>

Mailing list

linux-rtc@vger.kernel.org

Status

Maintained

Files

drivers/rtc/rtc-optee.c

OPA-VNIC DRIVER

Mail

Dennis Dalessandro <dennis.dalessandro@cornelisnetworks.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Supported

Files

drivers/infiniband/ulp/opa_vnic

OPEN FIRMWARE AND FLATTENED DEVICE TREE

Mail

Rob Herring <robh+dt@kernel.org>, Frank Rowand <frowand.list@gmail.com>

Mailing list

devicetree@vger.kernel.org

Status

Maintained

Web-page

<http://www.devicetree.org/>

chat

<irc://irc.libera.chat/devicetree>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/robh/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/robh/linux.git)

Files

Documentation/ABI/testing/sysfs-firmware-ofw drivers/of/ include/
linux/of*.h scripts/dtc/ tools/testing/selftests/dt/

Content regex

of_overlay_notifier_of_overlay_fdt_apply of_overlay_remove

OPEN FIRMWARE AND FLATTENED DEVICE TREE BINDINGS

Mail

Rob Herring <robh+dt@kernel.org>, Krzysztof Kozlowski
<krzysztof.kozlowski+dt@linaro.org>, Conor Dooley <conor+dt@kernel.org>

Mailing list

devicetree@vger.kernel.org

Status

Maintained

Patchwork

<http://patchwork.ozlabs.org/project/devicetree-bindings/list/>

chat

<irc://irc.libera.chat/devicetree>

SCM

<git://git.kernel.org/pub/scm/linux/kernel/git/robh/linux.git>

Files

Documentation/devicetree/ arch/*/boot/dts/ include/dt-bindings/

OPENCOMPUTE PTP CLOCK DRIVER

Mail

Jonathan Lemon <jonathan.lemon@gmail.com>, Vadim Fedorenko
<vadfed@linux.dev>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/ptp/ptp_ocp.c

OPENCORES I2C BUS DRIVER

Mail

Peter Korsgaard <peter@korsgaard.com>, Andrew Lunn <andrew@lunn.ch>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/i2c/opencores,i2c-ocores.yaml
i2c/busses/i2c-ocores drivers/i2c/busses/i2c-ocores.c include/linux/
platform_data/i2c-ocores.h

OPENRISC ARCHITECTURE

Mail

Jonas Bonn <jonas@southpole.se>, Stefan Kristiansson <stefan.kristiansson@saunalahti.fi>, Stafford Horne <shorne@gmail.com>

Mailing list

linux-openrisc@vger.kernel.org

Status

Maintained

Web-page

<http://openrisc.io>

SCM

git <https://github.com/openrisc/linux.git>

Files

Documentation/arch/openrisc/ Documentation/devicetree/bindings/
openrisc/ arch/openrisc/ drivers/irqchip/irq-ompic.c drivers/irqchip/
irq-or1k-*

OPENVSWITCH

Mail

Pravin B Shelar <pshelar@ovn.org>

Mailing list

netdev@vger.kernel.org, dev@openvswitch.org

Status

Maintained

Web-page

<http://openvswitch.org>

Files

include/uapi/linux/openvswitch.h net/openvswitch/ tools/testing/
selftests/net/openvswitch/

OPERATING PERFORMANCE POINTS (OPP)

Mail

Viresh Kumar <vireshk@kernel.org>, Nishanth Menon <nm@ti.com>, Stephen
Boyd <sboyd@kernel.org>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/vireshk/pm.git](https://git.kernel.org/pub/scm/linux/kernel/git/vireshk/pm.git)

Files

Documentation/devicetree/bindings/opp/ power/opp drivers/opp/
include/linux/pm_opp.h

OPL4 DRIVER

Mail

Clemens Ladisch <clemens@ladisch.de>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tiwai/sound.git](https://git.kernel.org/pub/scm/linux/kernel/git/tiwai/sound.git)

Files

sound/drivers/opl4/

ORACLE CLUSTER FILESYSTEM 2 (OCFS2)

Mail

Mark Fasheh <mark@fasheh.com>, Joel Becker <jlbec@evilplan.org>, Joseph Qi <joseph.qi@linux.alibaba.com>

Mailing list

ocfs2-devel@lists.linux.dev

Status

Supported

Web-page

<http://ocfs2.wiki.kernel.org>

Files

filesystems/dlmfs filesystems/ocfs2 fs/ocfs2/

ORANGEFS FILESYSTEM

Mail

Mike Marshall <hubcap@omnibond.com>

Reviewer

Martin Brandenburg <martin@omnibond.com>

Mailing list

devel@lists.orangefs.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/hubcap/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/hubcap/linux.git)

Files

filesystems/orangefs fs/orangefs/

OV2659 OMNIVISION SENSOR DRIVER

Mail

"Lad, Prabhakar" <prabhakar.csengg@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

SCM

git [git://linuxtv.org/mhadli/v4l-dvb-davinci_devices.git](https://git.linuxtv.org/mhadli/v4l-dvb-davinci_devices.git)

Files

drivers/media/i2c/ov2659.c include/media/i2c/ov2659.h

OVERLAY FILESYSTEM

Mail

Miklos Szeredi <miklos@szeredi.hu>, Amir Goldstein <amir73il@gmail.com>

Mailing list

linux-unionfs@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/mszeredi/vfs.git](https://git.kernel.org/pub/scm/linux/kernel/git/mszeredi/vfs.git)

Files

filesystems/overlayfs fs/overlayfs/

P54 WIRELESS DRIVER

Mail

Christian Lamparter <chunkeey@gmail.com>

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

Web-page

<https://wireless.wiki.kernel.org/en/users/Drivers/p54>

Files

drivers/net/wireless/intersil/p54/

PACKET SOCKETS

Mail

Willem de Bruijn <willemdebruijn.kernel@gmail.com>

Status

Maintained

Files

include/uapi/linux/af_packet.h net/packet/af_packet.c

PACKING

Mail

Vladimir Oltean <olteanv@gmail.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

core-api/packing include/linux/packing.h lib/packing.c

PADATA PARALLEL EXECUTION MECHANISM

Mail

Steffen Klassert <steffen.klassert@secunet.com>, Daniel Jordan
<daniel.m.jordan@oracle.com>

Mailing list

linux-crypto@vger.kernel.org, linux-kernel@vger.kernel.org

Status

Maintained

Files

core-api/padata include/linux/padata.h kernel/padata.c

PAGE CACHE

Mail

Matthew Wilcox (Oracle) <willy@infradead.org>

Mailing list

linux-fsdevel@vger.kernel.org

Status

Supported

SCM

git [git://git.infradead.org/users/willy/pagecache.git](https://git.infradead.org/users/willy/pagecache.git)

Files

filesystems/locking filesystems/vfs include/linux/pagemap.h mm/filemap.c
mm/page-writeback.c mm/readahead.c mm/truncate.c

PAGE POOL

Mail

Jesper Dangaard Brouer <hawk@kernel.org>, Ilias Apalodimas <ilias.apalodimas@linaro.org>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

networking/page_pool include/net/page_pool/ include/trace/events/
page_pool.h net/core/page_pool.c

PAGE TABLE CHECK

Mail

Pasha Tatashin <pasha.tatashin@soleen.com>, Andrew Morton <akpm@linux-foundation.org>

Mailing list

linux-mm@kvack.org

Status

Maintained

Files

mm/page_table_check include/linux/page_table_check.h mm/
page_table_check.c

PANASONIC LAPTOP ACPI EXTRAS DRIVER

Mail

Kenneth Chan <kenneth.t.chan@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/panasonic-laptop.c

PARALLAX PING IIO SENSOR DRIVER

Mail

Andreas Klinger <ak@it-klinger.de>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/proximity/parallax-ping.yaml
drivers/iio/proximity/ping.c

PARALLEL LCD/KEYPAD PANEL DRIVER

Mail

Willy Tarreau <willy@haproxy.com>, Ksenija Stanojevic
<ksenija.stanojevic@gmail.com>

Status

Odd Fixes

Files

admin-guide/lcd-panel-cgram drivers/auxdisplay/panel.c

PARALLEL PORT SUBSYSTEM

Mail

Sudip Mukherjee <sudipm.mukherjee@gmail.com>, Sudip Mukherjee
<sudip.mukherjee@codethink.co.uk>

Mailing list

linux-parport@lists.infradead.org (subscribers-only)

Status

Maintained

Files

Documentation/driver-api/parport*.rst drivers/char/ppdev.c drivers/
parport/ include/linux/parport*.h include/uapi/linux/ppdev.h

PARAVIRT_OPS INTERFACE

Mail

Juergen Gross <jgross@suse.com>

Reviewer

Ajay Kaher <akaher@vmware.com>, Alexey Makhalov
<amakhalov@vmware.com>, VMware PV-Drivers Reviewers <pv-drivers@vmware.com>

Mailing list

virtualization@lists.linux.dev, x86@kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git](https://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git) x86/core

Files

virt/paravirt_ops arch/*/include/asm/paravirt*.h arch/*/kernel/paravirt*
include/linux/hypervisor.h

PARISC ARCHITECTURE

Mail

"James E.J. Bottomley" <James.Bottomley@HansenPartnership.com>, Helge
Deller <deller@gmx.de>

Mailing list

linux-parisc@vger.kernel.org

Status

Maintained

Web-page

<https://parisc.wiki.kernel.org>

Patchwork

<http://patchwork.kernel.org/project/linux-parisc/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/jejb/parisc-2.6.git](https://git.kernel.org/pub/scm/linux/kernel/git/jejb/parisc-2.6.git) git
[git://git.kernel.org/pub/scm/linux/kernel/git/deller/parisc-linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/deller/parisc-linux.git)

Files

Documentation/arch/parisc/ arch/parisc/ drivers/char/agp/parisc-agp.c
drivers/input/misc/hp_sdc_rtc.c drivers/input/serio/gscps2.c drivers/
input/serio/hp_sdc* drivers/parisc/ drivers/parport/parport_gsc.*
drivers/tty/serial/8250/8250_parisc.c drivers/video/console/sti*
drivers/video/fbdev/sti* drivers/video/logo/logo_parisc* include/
linux/hp_sdc.h

PARMAN

Mail

Jiri Pirko <jiri@resnulli.us>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

include/linux/parman.h lib/parman.c lib/test_parman.c

PC ENGINES APU BOARD DRIVER

Mail

Enrico Weigelt, metux IT consult <info@metux.net>

Status

Maintained

Files

drivers/platform/x86/pcengines-apuv2.c

PC87360 HARDWARE MONITORING DRIVER

Mail

Jim Cromie <jim.cromie@gmail.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/pc87360 drivers/hwmon/pc87360.c

PC8736x GPIO DRIVER

Mail

Jim Cromie <jim.cromie@gmail.com>

Status

Maintained

Files

drivers/char/pc8736x_gpio.c

PC87427 HARDWARE MONITORING DRIVER

Mail

Jean Delvare <jdelvare@suse.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/pc87427 drivers/hwmon/pc87427.c

PCA9532 LED DRIVER

Mail

Riku Voipio <riku.voipio@iki.fi>

Status

Maintained

Files

drivers/leds/leds-pca9532.c include/linux/leds-pca9532.h

PCA9541 I2C BUS MASTER SELECTOR DRIVER

Mail

Guenter Roeck <linux@roeck-us.net>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

drivers/i2c/muxes/i2c-mux-pca9541.c

PCI DRIVER FOR AARDVARK (Marvell Armada 3700)

Mail

Thomas Petazzoni <thomas.petazzoni@bootlin.com>, Pali Rohár
<pali@kernel.org>

Mailing list

linux-pci@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/pci/aardvark-pci.txt drivers/pci/
controller/pci-aardvark.c

PCI DRIVER FOR ALTERA PCIE IP

Mail

Joyce Ooi <joyce.ooi@intel.com>

Mailing list

linux-pci@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/pci/altera-pcie.txt drivers/pci/
controller/pcie-altera.c

PCI DRIVER FOR APPLIEDMICRO XGENE**Mail**

Toan Le <toan@os.amperecomputing.com>

Mailing list

linux-pci@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for
non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/pci/xgene-pci.txt drivers/pci/
controller/pci-xgene.c

PCI DRIVER FOR ARM VERSATILE PLATFORM**Mail**

Rob Herring <robh@kernel.org>

Mailing list

linux-pci@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for
non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/pci/versatile.yaml drivers/pci/
controller/pci-versatile.c

PCI DRIVER FOR ARMADA 8K**Mail**

Thomas Petazzoni <thomas.petazzoni@bootlin.com>

Mailing list

linux-pci@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for
non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/pci/pci-armada8k.txt drivers/pci/
controller/dwc/pcie-armada8k.c

PCI DRIVER FOR CADENCE PCIE IP

Mailing list

linux-pci@vger.kernel.org

Status

Orphan

Files

Documentation/devicetree/bindings/pci/cdns,* drivers/pci/controller/cadence/*cadence*

PCI DRIVER FOR FREESCALE LAYERSCAPE

Mail

Minghuan Lian <minghuan.Lian@nxp.com>, Mingkai Hu
<mingkai.hu@nxp.com>, Roy Zang <roy.zang@nxp.com>

Mailing list

linuxppc-dev@lists.ozlabs.org, linux-pci@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

drivers/pci/controller/dwc/*layerscape*

PCI DRIVER FOR FU740

Mail

Paul Walmsley <paul.walmsley@sifive.com>, Greentime Hu <green-time.hu@sifive.com>, Samuel Holland <samuel.holland@sifive.com>

Mailing list

linux-pci@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pci/sifive,fu740-pcie.yaml
drivers/pci/controller/dwc/pcie-fu740.c

PCI DRIVER FOR GENERIC OF HOSTS

Mail

Will Deacon <will@kernel.org>

Mailing list

linux-pci@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/pci/host-generic-pci.yaml
drivers/pci/controller/pci-host-common.c drivers/pci/controller/
pci-host-generic.c

PCI DRIVER FOR IMX6

Mail

Richard Zhu <hongxing.zhu@nxp.com>, Lucas Stach
<l.stach@pengutronix.de>

Mailing list

linux-pci@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/pci/fsl,imx6q-pcie-common.yaml
Documentation/devicetree/bindings/pci/fsl,imx6q-pcie-ep.yaml
Documentation/devicetree/bindings/pci/fsl,imx6q-pcie.yaml drivers/
pci/controller/dwc/*imx6*

PCI DRIVER FOR INTEL IXP4XX

Mail

Linus Walleij <linus.walleij@linaro.org>

Status

Maintained

Files

Documentation/devicetree/bindings/pci/intel,ixp4xx-pci.yaml drivers/
pci/controller/pci-ixp4xx.c

PCI DRIVER FOR INTEL VOLUME MANAGEMENT DEVICE (VMD)

Mail

Nirmal Patel <nirmal.patel@linux.intel.com>

Reviewer

Jonathan Derrick <jonathan.derrick@linux.dev>

Mailing list

linux-pci@vger.kernel.org

Status

Supported

Files

drivers/pci/controller/vmd.c

PCI DRIVER FOR MICROSEMI SWITCHTEC

Mail

Kurt Schwemmer <kurt.schwemmer@microsemi.com>, Logan Gunthorpe <lo-gang@deltatee.com>

Mailing list

linux-pci@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-class-switchtec driver-api/switchtec
drivers/ntb/hw/mscc/ drivers/pci/switch/switchtec* include/linux/
switchtec.h include/uapi/linux/switchtec_ioctl.h

PCI DRIVER FOR MOBIVEIL PCIE IP

Mail

Karthikeyan Mitran <m.karthikeyan@mobiveil.co.in>, Hou Zhiqiang
<Zhiqiang.Hou@nxp.com>

Mailing list

linux-pci@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/pci/mobiveil-pcie.txt drivers/pci/
controller/mobiveil/pcie-mobiveil*

PCI DRIVER FOR MVEBU (Marvell Armada 370 and Armada XP SOC support)

Mail

Thomas Petazzoni <thomas.petazzoni@bootlin.com>, Pali Rohár <pali@kernel.org>

Mailing list

linux-pci@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

drivers/pci/controller/*mvebu*

PCI DRIVER FOR NVIDIA TEGRA

Mail

Thierry Reding <thierry.reding@gmail.com>

Mailing list

linux-tegra@vger.kernel.org, linux-pci@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/pci/nvidia,tegra20-pcie.txt
drivers/pci/controller/pci-tegra.c

PCI DRIVER FOR NXP LAYERSCAPE GEN4 CONTROLLER

Mail

Hou Zhiqiang <Zhiqiang.Hou@nxp.com>

Mailing list

linux-pci@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/pci/layerscape-pcie-gen4.txt
drivers/pci/controller/mobiveil/pcie-layerscape-gen4.c

PCI DRIVER FOR RENESAS R-CAR

Mail

Marek Vasut <marek.vasut+renesas@gmail.com>, Yoshihiro Shimoda <yoshihiro.shimoda.uh@renesas.com>

Mailing list

linux-pci@vger.kernel.org, linux-renesas-soc@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pci/*rcar* drivers/pci/controller/*rcar* drivers/pci/controller/dwc/*rcar*

PCI DRIVER FOR SAMSUNG EXYNOS

Mail

Jingoo Han <jingoohan1@gmail.com>

Mailing list

linux-pci@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-samsung-soc@vger.kernel.org

Status

Maintained

Files

drivers/pci/controller/dwc/pci-exynos.c

PCI DRIVER FOR SYNOPSYS DESIGNWARE

Mail

Jingoo Han <jingoohan1@gmail.com>, Gustavo Pimentel <gustavo.pimentel@synopsys.com>, Manivannan Sadhasivam <manivannan.sadhasivam@linaro.org>

Mailing list

linux-pci@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pci/snps,dw-pcie-ep.yaml
Documentation/devicetree/bindings/pci/snps,dw-pcie.yaml drivers/pci/controller/dwc/*designware*

PCI DRIVER FOR TI DRA7XX/J721E

Mail

Vignesh Raghavendra <vigneshr@ti.com>

Reviewer

Siddharth Vadapalli <s-vadapalli@ti.com>

Mailing list

linux-omap@vger.kernel.org, linux-pci@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Supported

Files

Documentation/devicetree/bindings/pci/ti-pci.txt drivers/pci/
controller/cadence/pci-j721e.c drivers/pci/controller/dwc/
pci-dra7xx.c

PCI DRIVER FOR V3 SEMICONDUCTOR V360EPC

Mail

Linus Walleij <linus.walleij@linaro.org>

Mailing list

linux-pci@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pci/v3-v360epc-pci.txt drivers/
pci/controller/pci-v3-semi.c

PCI DRIVER FOR XILINX VERSAL CPM

Mail

Bharat Kumar Gogada <bharat.kumar.gogada@amd.com>, Michal Simek
<michal.simek@amd.com>

Mailing list

linux-pci@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pci/xilinx-versal-cpm.yaml
drivers/pci/controller/pcie-xilinx-cpm.c

PCI ENDPOINT SUBSYSTEM

Mail

Manivannan Sadhasivam <manivannan.sadhasivam@linaro.org>, Krzysztof Wilczyński <kw@linux.com>

Reviewer

Kishon Vijay Abraham I <kishon@kernel.org>

Mailing list

linux-pci@vger.kernel.org

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/linux-pci/list/>

bugs

<https://bugzilla.kernel.org>

chat

<irc://irc.oftc.net/linux-pci>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/pci/pci.git](https://git.kernel.org/pub/scm/linux/kernel/git/pci/pci.git)

Files

Documentation/PCI/endpoint/* misc-devices/pci-endpoint-test drivers/misc/
pci_endpoint_test.c drivers/pci/endpoint/ tools/pci/

PCI ENHANCED ERROR HANDLING (EEH) FOR POWERPC

Mail

Mahesh J Salgaonkar <mahesh@linux.ibm.com>

Reviewer

Oliver O'Halloran <oohall@gmail.com>

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Supported

Files

PCI/pci-error-recovery arch/powerpc/eeh-pci-error-recovery arch/powerpc/
include/*/eeh*.h arch/powerpc/kernel/eeh*.c arch/powerpc/platforms/
/eeh.c drivers/pci/pcie/aer.c drivers/pci/pcie/dpc.c drivers/pci/
pcie/err.c

PCI ERROR RECOVERY

Mail

Linus Vepstas <linasvepstas@gmail.com>

Mailing list

linux-pci@vger.kernel.org

Status

Supported

Files

PCI/pci-error-recovery

PCI MSI DRIVER FOR ALTERA MSI IP

Mail

Joyce Ooi <joyce.ooi@intel.com>

Mailing list

linux-pci@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/pci/altera-pcie-msi.txt drivers/
pci/controller/pcie-altera-msi.c

PCI MSI DRIVER FOR APPLIEDMICRO XGENE

Mail

Toan Le <toan@os.amperecomputing.com>

Mailing list

linux-pci@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for
non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/pci/xgene-pci-msi.txt drivers/pci/
controller/pci-xgene-msi.c

PCI NATIVE HOST BRIDGE AND ENDPOINT DRIVERS

Mail

Lorenzo Pieralisi <lpieralisi@kernel.org>, Krzysztof Wilczyński
<kw@linux.com>

Reviewer

Rob Herring <robh@kernel.org>

Mailing list

linux-pci@vger.kernel.org

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/linux-pci/list/>

bugs

<https://bugzilla.kernel.org>

chat

<irc://irc.oftc.net/linux-pci>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/pci/pci.git](https://git.kernel.org/pub/scm/linux/kernel/git/pci/pci.git)

Files

Documentation/devicetree/bindings/pci/ drivers/pci/controller/
drivers/pci/pci-bridge-emul.c drivers/pci/pci-bridge-emul.h

PCI PEER-TO-PEER DMA (P2PDMA)

Mail

Bjorn Helgaas <bhelgaas@google.com>, Logan Gunthorpe <lo-gang@deltatee.com>

Mailing list

linux-pci@vger.kernel.org

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/linux-pci/list/>

bugs

<https://bugzilla.kernel.org>

chat

<irc://irc.oftc.net/linux-pci>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/pci/pci.git](https://git.kernel.org/pub/scm/linux/kernel/git/pci/pci.git)

Files

driver-api/pci/p2pdma drivers/pci/p2pdma.c include/linux/pci-p2pdma.h

PCI SUBSYSTEM

Mail

Bjorn Helgaas <bhelgaas@google.com>

Mailing list

linux-pci@vger.kernel.org

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/linux-pci/list/>

bugs

<https://bugzilla.kernel.org>

chat

<irc://irc.oftc.net/linux-pci>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/pci/pci.git](https://git.kernel.org/pub/scm/linux/kernel/git/pci/pci.git)

Files

Documentation/PCI/ Documentation/devicetree/bindings/pci/ arch/x86/
kernel/early-quirks.c arch/x86/kernel/quirks.c arch/x86/pci/ drivers/
acpi/pci* drivers/pci/ include/asm-generic/pci* include/linux/of_pci.
h include/linux/pci* include/uapi/linux/pci* lib/pci*

PCIE DRIVER FOR AMAZON ANNAPURNA LABS

Mail

Jonathan Chocron <jonnyyc@amazon.com>

Mailing list

linux-pci@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pci/pcie-al.txt drivers/pci/
controller/dwc/pcie-al.c

PCIE DRIVER FOR AMLOGIC MESON

Mail

Yue Wang <yue.wang@Amlogic.com>

Mailing list

linux-pci@vger.kernel.org, linux-amlogic@lists.infradead.org

Status

Maintained

Files

drivers/pci/controller/dwc/pci-meson.c

PCIE DRIVER FOR AXIS ARTPEC

Mail

Jesper Nilsson <jesper.nilsson@axis.com>

Mailing list

linux-arm-kernel@axis.com, linux-pci@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pci/axis,artpec* drivers/pci/
controller/dwc/*artpec*

PCIE DRIVER FOR CAVIUM THUNDERX

Mail

Robert Richter <rric@kernel.org>

Mailing list

linux-pci@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for
non-subscribers)

Status

Odd Fixes

Files

drivers/pci/controller/pci-thunder-*

PCIE DRIVER FOR HISILICON

Mail

Zhou Wang <wangzhou1@hisilicon.com>

Mailing list

linux-pci@vger.kernel.org

Status

Maintained

Files

drivers/pci/controller/dwc/pcie-hisi.c

PCIE DRIVER FOR HISILICON KIRIN

Mail

Xiaowei Song <songxiaowei@hisilicon.com>, Binghui Wang <wang-binghui@hisilicon.com>

Mailing list

linux-pci@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pci/hisilicon,kinin-pcie.yaml
drivers/pci/controller/dwc/pcie-kinin.c

PCIE DRIVER FOR HISILICON STB

Mail

Shawn Guo <shawn.guo@linaro.org>

Mailing list

linux-pci@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pci/hisilicon-histb-pcie.txt
drivers/pci/controller/dwc/pcie-histb.c

PCIE DRIVER FOR INTEL KEEM BAY

Mail

Srikanth Thokala <srikanth.thokala@intel.com>

Mailing list

linux-pci@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/pci/intel,keembay-pcie* drivers/
pci/controller/dwc/pcie-keembay.c

PCIE DRIVER FOR INTEL LGM GW SOC

Mail

Chuanhua Lei <lchuanhua@maxlinear.com>

Mailing list

linux-pci@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pci/intel-gw-pcie.yaml drivers/
pci/controller/dwc/pcie-intel-gw.c

PCIE DRIVER FOR MEDIATEK

Mail

Ryder Lee <ryder.lee@mediatek.com>, Jianjun Wang <jian-jun.wang@mediatek.com>

Mailing list

linux-pci@vger.kernel.org, linux-mediatek@lists.infradead.org (moderated for
non-subscribers)

Status

Supported

Files

Documentation/devicetree/bindings/pci/mediatek* drivers/pci/
controller/*mediatek*

PCIE DRIVER FOR MICROCHIP

Mail

Daire McNamara <daire.mcnamara@microchip.com>

Mailing list

linux-pci@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/pci/microchip* drivers/pci/
controller/*microchip*

PCIE DRIVER FOR QUALCOMM MSM

Mail

Manivannan Sadhasivam <manivannan.sadhasivam@linaro.org>

Mailing list

linux-pci@vger.kernel.org, linux-arm-msm@vger.kernel.org

Status

Maintained

Files

`drivers/pci/controller/dwc/pcie-qcom.c`

PCIE DRIVER FOR ROCKCHIP

Mail

Shawn Lin <shawn.lin@rock-chips.com>

Mailing list

linux-pci@vger.kernel.org, linux-rockchip@lists.infradead.org

Status

Maintained

Files

`Documentation/devicetree/bindings/pci/rockchip,rk3399-pcie*` `drivers/pci/controller/pcie-rockchip*`

PCIE DRIVER FOR SOCIONEXT UNIPHIER

Mail

Kunihiko Hayashi <hayashi.kunihiko@socionext.com>

Mailing list

linux-pci@vger.kernel.org

Status

Maintained

Files

`Documentation/devicetree/bindings/pci/socionext,uniphier-pcie*`
`drivers/pci/controller/dwc/pcie-uniphier*`

PCIE DRIVER FOR ST SPEAR13XX

Mail

Pratyush Anand <pratyush.anand@gmail.com>

Mailing list

linux-pci@vger.kernel.org

Status

Maintained

Files

drivers/pci/controller/dwc/*spear*

PCIE ENDPOINT DRIVER FOR QUALCOMM

Mail

Manivannan Sadhasivam <manivannan.sadhasivam@linaro.org>

Mailing list

linux-pci@vger.kernel.org, linux-arm-msm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pci/qcom,pcie-ep.yaml drivers/pci/controller/dwc/pcie-qcom-ep.c

PCMCIA SUBSYSTEM

Mail

Dominik Brodowski <linux@dominikbrodowski.net>

Status

Odd Fixes

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/brodo/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/brodo/linux.git)

Files

Documentation/pcmcia/ drivers/pcmcia/ include/pcmcia/ tools/pcmcia/

PCNET32 NETWORK DRIVER

Mail

Don Fry <pcnet32@frontier.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/amd/pcnet32.c

PCRYPT PARALLEL CRYPTO ENGINE

Mail

Steffen Klassert <steffen.klassert@secunet.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Maintained

Files

crypto/pcrypt.c include/crypto/pcrypt.h

PDS DSC VIRTIO DATA PATH ACCELERATOR

Reviewer

Shannon Nelson <shannon.nelson@amd.com>

Files

drivers/vdpa/pds/

PECI HARDWARE MONITORING DRIVERS

Mail

Iwona Winiarska <iwona.winiarska@intel.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Supported

Files

hwmon/peci-cputemp hwmon/peci-dimmttemp drivers/hwmon/peci/

PECI SUBSYSTEM

Mail

Iwona Winiarska <iwona.winiarska@intel.com>

Mailing list

openbmc@lists.ozlabs.org (moderated for non-subscribers)

Status

Supported

Files

Documentation/devicetree/bindings/peci/ Documentation/peci/ drivers/
peci/ include/linux/peci-cpu.h include/linux/peci.h

PENSANDO ETHERNET DRIVERS

Mail

Shannon Nelson <shannon.nelson@amd.com>, Brett Creeley
<brett.creeley@amd.com>, drivers@pensando.io

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

networking/device_drivers/ethernet/pensando/ionic drivers/net/ethernet/
pensando/

PER-CPU MEMORY ALLOCATOR

Mail

Dennis Zhou <dennis@kernel.org>, Tejun Heo <tj@kernel.org>, Christoph
Lameter <cl@linux.com>

Mailing list

linux-mm@kvack.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/dennis/percpu.git](https://git.kernel.org/pub/scm/linux/kernel/git/dennis/percpu.git)

Files

arch/*/include/asm/percpu.h include/linux/percpu*.h lib/percpu*.c mm/
percpu*.c

PER-TASK DELAY ACCOUNTING

Mail

Balbir Singh <bsingharora@gmail.com>

Status

Maintained

Files

include/linux/delayacct.h kernel/delayacct.c

PERFORMANCE EVENTS SUBSYSTEM

Mail

Peter Zijlstra <peterz@infradead.org>, Ingo Molnar <mingo@redhat.com>, Arnaldo Carvalho de Melo <acme@kernel.org>, Namhyung Kim <namhyung@kernel.org>

Reviewer

Mark Rutland <mark.rutland@arm.com>, Alexander Shishkin <alexander.shishkin@linux.intel.com>, Jiri Olsa <jolsa@kernel.org>, Ian Rogers <irogers@google.com>, Adrian Hunter <adrian.hunter@intel.com>

Mailing list

linux-perf-users@vger.kernel.org, linux-kernel@vger.kernel.org

Status

Supported

Web-page

<https://perf.wiki.kernel.org/>

SCM

```
git      git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git      perf/core      git
git://git.kernel.org/pub/scm/linux/kernel/git/perf/perf-tools.git      perf-tools      git
git://git.kernel.org/pub/scm/linux/kernel/git/perf/perf-tools-next.git  perf-tools-
next
```

Files

```
arch/*/events/*      arch/*/events/*/*      arch/*/include/asm/perf_event.
h      arch/*/kernel/*/*perf_event*.c      arch/*/kernel/*/*perf_event*.c
arch/*/kernel/perf_callchain.c      arch/*/kernel/perf_event*.c      include/
linux/perf_event.h      include/uapi/linux/perf_event.h      kernel/events/*
tools/lib/perf/      tools/perf/
```

PERFORMANCE EVENTS TOOLING ARM64

Reviewer

John Garry <john.g.garry@oracle.com>, Will Deacon <will@kernel.org>, James Clark <james.clark@arm.com>, Mike Leach <mike.leach@linaro.org>, Leo Yan <leo.yan@linux.dev>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Supported

Files

```
tools/build/feature/test-libopencsd.c      tools/perf/arch/arm*/      tools/
perf/pmu-events/arch/arm64/      tools/perf/util/arm-spe*      tools/perf/
util/cs-etm*
```

PERSONALITY HANDLING

Mail

Christoph Hellwig <hch@infradead.org>

Mailing list

linux-abi-devel@lists.sourceforge.net

Status

Maintained

Files

include/linux/personality.h include/uapi/linux/personality.h

PHOENIX RC FLIGHT CONTROLLER ADAPTER

Mail

Marcus Folkesson <marcus.folkesson@gmail.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

input/devices/pxrc drivers/input/joystick/pxrc.c

PHONET PROTOCOL

Mail

Remi Denis-Courmont <courmisch@gmail.com>

Status

Supported

Files

networking/phonet include/linux/phonet.h include/net/phonet/ include/
uapi/linux/phonet.h net/phonet/

PHRAM MTD DRIVER

Mail

Joern Engel <joern@lazybastard.org>

Mailing list

linux-mtd@lists.infradead.org

Status

Maintained

Files

drivers/mtd/devices/phram.c

PICOLCD HID DRIVER

Mail

Bruno Prémont <bonbons@linux-vserver.org>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/hid/hid-picolcd*

PIDFD API

Mail

Christian Brauner <christian@brauner.io>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/brauner/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/brauner/linux.git)

Files

samples/pidfd/ tools/testing/selftests/clone3/ tools/testing/
selftests/pid_namespace/ tools/testing/selftests/pidfd/

Content regex

(?i)pidfd (?i)clone3 \b(clone_args|kernel_clone_args)\b

PIN CONTROL SUBSYSTEM

Mail

Linus Walleij <linus.walleij@linaro.org>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/linusw/linux-pinctrl.git](https://git.kernel.org/pub/scm/linux/kernel/git/linusw/linux-pinctrl.git)

Files

Documentation/devicetree/bindings/pinctrl/ driver-api/pin-control
drivers/pinctrl/ include/dt-bindings/pinctrl/ include/linux/pinctrl/

PIN CONTROLLER - AMD

Mail

Basavaraj Natikar <Basavaraj.Natikar@amd.com>, Shyam Sundar S K <Shyam-sundar.S-k@amd.com>

Status

Maintained

Files

drivers/pinctrl/pinctrl-amd.c

PIN CONTROLLER - FREESCALE

Mail

Dong Aisheng <aisheng.dong@nxp.com>, Fabio Estevam <festevam@gmail.com>, Shawn Guo <shawnguo@kernel.org>, Jacky Bai <ping.bai@nxp.com>

Reviewer

Pengutronix Kernel Team <kernel@pengutronix.de>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pinctrl/fsl,* drivers/pinctrl/freescale/

PIN CONTROLLER - INTEL

Mail

Mika Westerberg <mika.westerberg@linux.intel.com>, Andy Shevchenko <andy@kernel.org>

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/pinctrl/intel.git](https://git.kernel.org/pub/scm/linux/kernel/git/pinctrl/intel.git)

Files

drivers/pinctrl/intel/

PIN CONTROLLER - KEEMBAY**Mail**

Lakshmi Sowjanya D <lakshmi.sowjanya.d@intel.com>

Status

Supported

Files

drivers/pinctrl/pinctrl-keembay*

PIN CONTROLLER - MEDIATEK**Mail**

Sean Wang <sean.wang@kernel.org>

Mailing list

linux-mediatek@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/pinctrl/mediatek,mt65xx-pinctrl.yaml
 Documentation/devicetree/bindings/pinctrl/mediatek,mt6779-pinctrl.yaml
 Documentation/devicetree/bindings/pinctrl/mediatek,mt7622-pinctrl.yaml
 Documentation/devicetree/bindings/pinctrl/mediatek,mt8183-pinctrl.yaml
 drivers/pinctrl/mediatek/

PIN CONTROLLER - MEDIATEK MIPS**Mail**

Arinç ÜNAL <arinc.unal@arinc9.com>, Sergio Paracuellos <sergio.paracuellos@gmail.com>

Mailing list

linux-mediatek@lists.infradead.org (moderated for non-subscribers), linux-mips@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pinctrl/mediatek,mt7620-pinctrl.yaml
 Documentation/devicetree/bindings/pinctrl/mediatek,mt7621-pinctrl.yaml
 Documentation/devicetree/bindings/pinctrl/mediatek,mt76x8-pinctrl.yaml
 Documentation/devicetree/bindings/pinctrl/ralink,rt2880-pinctrl.yaml
 Documentation/devicetree/bindings/pinctrl/ralink,rt305x-pinctrl.yaml
 Documentation/devicetree/bindings/pinctrl/ralink,rt3352-pinctrl.yaml
 Documentation/devicetree/bindings/pinctrl/ralink,rt3883-pinctrl.yaml
 Documentation/devicetree/bindings/pinctrl/ralink,rt5350-pinctrl.yaml
 drivers/pinctrl/mediatek/pinctrl-mt7620.c
 drivers/pinctrl/mediatek/pinctrl-mt7621.c
 drivers/pinctrl/

mediatek/pinctrl-mt76x8.c drivers/pinctrl/mediatek/pinctrl-mtmips.*
drivers/pinctrl/mediatek/pinctrl-rt2880.c drivers/pinctrl/mediatek/
pinctrl-rt305x.c drivers/pinctrl/mediatek/pinctrl-rt3883.c

PIN CONTROLLER - MICROCHIP AT91

Mail

Ludovic Desroches <ludovic.desroches@microchip.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-gpio@vger.kernel.org

Status

Supported

Files

drivers/gpio/gpio-sama5d2-piobu.c drivers/pinctrl/pinctrl-at91*

PIN CONTROLLER - NXP S32

Mail

Chester Lin <clin@suse.com>

Reviewer

NXP S32 Linux Team <s32@nxp.com>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pinctrl/nxp,s32* drivers/pinctrl/
nxp/

PIN CONTROLLER - QUALCOMM

Mail

Bjorn Andersson <andersson@kernel.org>

Mailing list

linux-arm-msm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pinctrl/qcom,* drivers/pinctrl/
qcom/

PIN CONTROLLER - RENESAS

Mail

Geert Uytterhoeven <geert+renesas@glider.be>

Mailing list

linux-renesas-soc@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/geert/renesas-drivers.git](https://git.kernel.org/pub/scm/linux/kernel/git/geert/renesas-drivers.git)
renesas-pinctrl

Files

Documentation/devicetree/bindings/pinctrl/renesas,* drivers/pinctrl/
renesas/

PIN CONTROLLER - SAMSUNG

Mail

Tomasz Figa <tomasz.figa@gmail.com>, Krzysztof Ko-
złowski <krzysztof.kozłowski@linaro.org>, Sylwester Nawrocki
<s.nawrocki@samsung.com>

Reviewer

Alim Akhtar <alim.akhtar@samsung.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-samsung-soc@vger.kernel.org

Status

Maintained

Patchwork

<https://patchwork.kernel.org/project/linux-samsung-soc/list/>

bugs

<mailto:linux-samsung-soc@vger.kernel.org>

chat

<irc://irc.libera.chat/linux-exynos>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/pinctrl/samsung.git](https://git.kernel.org/pub/scm/linux/kernel/git/pinctrl/samsung.git)

Files

Documentation/devicetree/bindings/pinctrl/samsung,pinctrl*.yaml
drivers/pinctrl/samsung/ include/dt-bindings/pinctrl/samsung.h

PIN CONTROLLER - SINGLE

Mail

Tony Lindgren <tony@atomide.com>, Haojian Zhuang <haojian.zhuang@linaro.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-omap@vger.kernel.org

Status

Maintained

Files

drivers/pinctrl/pinctrl-single.c

PIN CONTROLLER - SUNPLUS / TIBBO

Mail

Dvorkin Dmitry <dvorkin@tibbo.com>, Wells Lu <wellslutw@gmail.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Web-page

<https://sunplus.atlassian.net/wiki/spaces/doc/overview>

Files

Documentation/devicetree/bindings/pinctrl/sunplus,* drivers/pinctrl/sunplus/ include/dt-bindings/pinctrl/spcctl*.h

PINE64 PINEPHONE KEYBOARD DRIVER

Mail

Samuel Holland <samuel@sholland.org>

Status

Supported

Files

Documentation/devicetree/bindings/input/pine64,pinephone-keyboard.yaml drivers/input/keyboard/pinephone-keyboard.c

PKTCDVD DRIVER

Mail

linux-block@vger.kernel.org

Status

Orphan

Files

drivers/block/pktcdvd.c include/linux/pktcdvd.h include/uapi/linux/pktcdvd.h

PLANTOWER PMS7003 AIR POLLUTION SENSOR DRIVER

Mail

Tomasz Duszynski <tduszyns@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/iio/chemical/plantower,pms7003.yaml drivers/iio/chemical/pms7003.c

PLCA RECONCILIATION SUBLAYER (IEEE802.3 Clause 148)

Mail

Piergiorgio Beruto <piergiorgio.beruto@gmail.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/phy/mdio-open-alliance.h net/ethtool/plca.c

PLDMFW LIBRARY

Mail

Jacob Keller <jacob.e.keller@intel.com>

Status

Maintained

Files

Documentation/driver-api/pldmfw/ include/linux/pldmfw.h lib/pldmfw/

PLX DMA DRIVER

Mail

Logan Gunthorpe <logang@deltatee.com>

Status

Maintained

Files

drivers/dma/plx_dma.c

PM-GRAPH UTILITY

Mail

"Todd E Brandt" <todd.e.brandt@linux.intel.com>

Mailing list

linux-pm@vger.kernel.org

Status

Supported

Web-page

<https://01.org/pm-graph>

bugs

<https://bugzilla.kernel.org/buglist.cgi?component=pm-graph&product=Tools>

SCM

git [git://github.com/intel/pm-graph](https://github.com/intel/pm-graph)

Files

tools/power/pm-graph

PM6764TR DRIVER

Mail

Charles Hsu <hsu.yungteng@gmail.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/pm6764tr drivers/hwmon/pmbus/pm6764tr.c

PMBUS HARDWARE MONITORING DRIVERS

Mail

Guenter Roeck <linux@roeck-us.net>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Web-page

<http://hwmon.wiki.kernel.org/> <http://www.roeck-us.net/linux/drivers/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/groeck/linux-staging.git](https://git.kernel.org/pub/scm/linux/kernel/git/groeck/linux-staging.git)

Files

Documentation/devicetree/bindings/hwmon/ltc2978.txt Documentation/
devicetree/bindings/hwmon/max31785.txt hwmon/adm1275 hwmon/ibm-
cffps hwmon/ir35221 hwmon/lm25066 hwmon/ltc2978 hwmon/ltc3815 hw-
mon/max16064 hwmon/max20751 hwmon/max31785 hwmon/max34440
hwmon/max8688 hwmon/pmbus-core hwmon/pmbus hwmon/tps40422 hw-
mon/ucd9000 hwmon/ucd9200 hwmon/zl6100 drivers/hwmon/pmbus/ include/
linux/pmbus.h

PMC SIERRA MaxRAID DRIVER

Mailing list

linux-scsi@vger.kernel.org

Status

Orphan

Web-page

<http://www.pmc-sierra.com/>

Files

drivers/scsi/pmraid.*

PMC SIERRA PM8001 DRIVER

Mail

Jack Wang <jinpu.wang@cloud.ionos.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Files

drivers/scsi/pm8001/

PNI RM3100 IIO DRIVER

Mail

Song Qiang <songqiang1304521@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/magnetometer/pni_rm3100.yaml
drivers/iio/magnetometer/rm3100*

PNP SUPPORT

Mail

"Rafael J. Wysocki" <rafael.j.wysocki@intel.com>

Mailing list

linux-acpi@vger.kernel.org

Status

Maintained

Files

drivers/pnp/ include/linux/pnp.h

POSIX CLOCKS and TIMERS

Mail

Thomas Gleixner <tglx@linutronix.de>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

SCM

git git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git timers/core

Files

fs/timerfd.c include/linux/time_namespace.h include/linux/timer*
kernel/time/*timer* kernel/time/namespace.c

POWER MANAGEMENT CORE

Mail

"Rafael J. Wysocki" <rafael@kernel.org>

Mailing list

linux-pm@vger.kernel.org

Status

Supported

bugs

<https://bugzilla.kernel.org>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/rafael/linux-pm](https://git.kernel.org/pub/scm/linux/kernel/git/rafael/linux-pm)

Files

drivers/base/power/ drivers/powercap/ include/linux/intel_rapl.
h include/linux/pm.h include/linux/pm_* include/linux/powercap.h
kernel/configs/nopm.config

POWER STATE COORDINATION INTERFACE (PSCI)

Mail

Mark Rutland <mark.rutland@arm.com>, Lorenzo Pieralisi <lpieralisi@kernel.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

drivers/firmware/psci/ include/linux/psci.h include/uapi/linux/psci.h

POWER SUPPLY CLASS/SUBSYSTEM and DRIVERS

Mail

Sebastian Reichel <sre@kernel.org>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/sre/linux-power-supply.git](https://git.kernel.org/pub/scm/linux/kernel/git/sre/linux-power-supply.git)

Files

Documentation/ABI/testing/sysfs-class-power Documentation/
devicetree/bindings/power/supply/ drivers/power/supply/ include/
linux/power/ include/linux/power_supply.h

POWERNV OPERATOR PANEL LCD DISPLAY DRIVER

Mail

Suraj Jitindar Singh <sjitindarsingh@gmail.com>

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Maintained

Files

drivers/char/powernv-op-panel.c

PPP OVER ATM (RFC 2364)

Mail

Mitchell Blank Jr <mitch@sfgoth.com>

Status

Maintained

Files

include/uapi/linux/atmppp.h net/atm/pppoatm.c

PPP OVER ETHERNET

Mail

Michal Ostrowski <mostrows@earthlink.net>

Status

Maintained

Files

drivers/net/ppp/pppoe.c drivers/net/ppp/pppox.c

PPP OVER L2TP

Mail

James Chapman <jchapman@katalix.com>

Status

Maintained

Files

include/linux/if_pppol2tp.h include/uapi/linux/if_pppol2tp.h net/
l2tp/l2tp_ppp.c

PPP PROTOCOL DRIVERS AND COMPRESSORS

Mailing list

linux-ppp@vger.kernel.org

Status

Orphan

Files

drivers/net/ppp/ppp_*

PPS SUPPORT

Mail

Rodolfo Giometti <giometti@enneenne.com>

Mailing list

linuxpps@ml.enneenne.com (subscribers-only)

Status

Maintained

Web-page

http://wiki.enneenne.com/index.php/LinuxPPS_support

Files

Documentation/ABI/testing/sysfs-pps Documentation/devicetree/
bindings/pps/pps-gpio.yaml driver-api/pps drivers/pps/ include/linux/
pps*.h include/uapi/linux/pps.h

PPTP DRIVER

Mail

Dmitry Kozlov <xeb@mail.ru>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Web-page

<http://sourceforge.net/projects/accel-pptp>

Files

drivers/net/ppp/pptp.c

PRESSURE STALL INFORMATION (PSI)

Mail

Johannes Weiner <hannes@cmpxchg.org>, Suren Baghdasaryan
<surenb@google.com>

Reviewer

Peter Zijlstra <peterz@infradead.org>

Status

Maintained

Files

include/linux/psi* kernel/sched/psi.c

PRINTK

Mail

Petr Mladek <pmladek@suse.com>

Reviewer

Steven Rostedt <rostedt@goodmis.org>, John Og-
ness <john.ogness@linutronix.de>, Sergey Senozhatsky
<senozhatsky@chromium.org>

Status

Maintained

SCM

git git://git.kernel.org/pub/scm/linux/kernel/git/printk/linux.git

Files

include/linux/printk.h kernel/printk/

PRINTK INDEXING

Reviewer

Chris Down <chris@chrisdown.name>

Status

Maintained

Files

core-api/printk-index kernel/printk/index.c

Content regex

printk_index

PROC FILESYSTEM

Mailing list

linux-kernel@vger.kernel.org, linux-fsdevel@vger.kernel.org

Status

Maintained

Files

filesystems/proc fs/proc/ include/linux/proc_fs.h tools/testing/
selftests/proc/

PROC SYSCTL

Mail

Luis Chamberlain <mcgrof@kernel.org>, Kees Cook
<keescook@chromium.org>, Joel Granados <j.granados@samsung.com>

Mailing list

linux-kernel@vger.kernel.org, linux-fsdevel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/mcgrof/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/mcgrof/linux.git) sysctl-next

Files

fs/proc/proc_sysctl.c include/linux/sysctl.h kernel/sysctl-test.c
kernel/sysctl.c tools/testing/selftests/sysctl/

PS3 NETWORK SUPPORT

Mail

Geoff Levand <geoff@infradead.org>

Mailing list

netdev@vger.kernel.org, linuxppc-dev@lists.ozlabs.org

Status

Maintained

Files

drivers/net/ethernet/toshiba/ps3_gelic_net.*

PS3 PLATFORM SUPPORT

Mail

Geoff Levand <geoff@infradead.org>

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Maintained

Files

arch/powerpc/boot/ps3* arch/powerpc/include/asm/lv1call.h arch/
powerpc/include/asm/ps3*.h arch/powerpc/platforms/ps3/ drivers/*/ps3*
drivers/ps3/ drivers/rtc/rtc-ps3.c drivers/usb/host/*ps3.c sound/ppc/
snd_ps3*

PS3VRAM DRIVER

Mail

Jim Paris <jim@jtan.com>, Geoff Levand <geoff@infradead.org>

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Maintained

Files

drivers/block/ps3vram.c

PSAMPLE PACKET SAMPLING SUPPORT

Mail

Yotam Gigi <yotam.gi@gmail.com>

Status

Maintained

Files

include/net/psample.h include/uapi/linux/psample.h net/psample

PSTORE FILESYSTEM

Mail

Kees Cook <keescook@chromium.org>

Reviewer

Tony Luck <tony.luck@intel.com>, Guilherme G. Piccoli <gpiccoli@igalia.com>

Mailing list

linux-hardening@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/kees/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/kees/linux.git) for-next/pstore

Files

admin-guide/pstore-blk admin-guide/ramoops Documentation/devicetree/
bindings/reserved-memory/ramoops.yaml drivers/acpi/apei/erst.c
drivers/firmware/efi/efi-pstore.c fs/pstore/ include/linux/pstore*

Content regex

\b(pstore|ramoops)

PTP HARDWARE CLOCK SUPPORT**Mail**

Richard Cochran <richardcochran@gmail.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Web-page

<http://linuxptp.sourceforge.net/>

Files

Documentation/ABI/testing/sysfs-ptp driver-api/ptp drivers/net/phy/
dp83640* drivers/ptp/* include/linux/ptp_cl*

Content regex

(?:\b|_)ptp(?:\b|_)

PTP MOCKUP CLOCK SUPPORT**Mail**

Vladimir Oltean <vladimir.oltean@nxp.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/ptp/ptp_mock.c include/linux/ptp_mock.h

PTP VIRTUAL CLOCK SUPPORT

Mail

Yangbo Lu <yangbo.lu@nxp.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/ptp/ptp_vclock.c net/ethtool/phc_vclocks.c

PTRACE SUPPORT

Mail

Oleg Nesterov <oleg@redhat.com>

Status

Maintained

Files

arch/*/*/ptrace*.c arch/*/include/asm/ptrace*.h arch/*/ptrace*.c
include/asm-generic/syscall.h include/linux/ptrace.h include/linux/
regset.h include/uapi/linux/ptrace.h kernel/ptrace.c

PULSE8-CEC DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/cec/usb/pulse8/

PURELIFI PLFXLC DRIVER

Mail

Srinivasan Raju <srini.raju@purelifi.com>

Mailing list

linux-wireless@vger.kernel.org

Status

Supported

Files

drivers/net/wireless/purelifi/plfxlc/

PVRUSB2 VIDEO4LINUX DRIVER**Mail**

Mike Isely <isely@pobox.com>

Mailing list

pvrusb2@isely.net (subscribers-only), linux-media@vger.kernel.org

Status

Maintained

Web-page

<http://www.isely.net/pvrusb2/>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/driver-api/media/drivers/pvrusb2* drivers/media/usb/
pvrusb2/

PWC WEBCAM DRIVER**Mail**

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Odd Fixes

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/usb/pwc/* include/trace/events/pwc.h

PWM IR Transmitter**Mail**

Sean Young <sean@mess.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/leds/irled/pwm-ir-tx.yaml drivers/
media/rc/pwm-ir-tx.c

PWM SUBSYSTEM

Mail

Uwe Kleine-König <u.kleine-koenig@pengutronix.de>

Mailing list

linux-pwm@vger.kernel.org

Status

Maintained

Patchwork

<https://patchwork.ozlabs.org/project/linux-pwm/list/>

SCM

git <https://git.kernel.org/pub/scm/linux/kernel/git/ukleinek/linux.git>

Files

Documentation/devicetree/bindings/gpio/gpio-mvebu.yaml
Documentation/devicetree/bindings/pwm/ driver-api/pwm drivers/gpio/
gpio-mvebu.c drivers/pwm/ drivers/video/backlight/pwm_bl.c include/
dt-bindings/pwm/ include/linux/pwm.h include/linux/pwm_backlight.h

Content regex

`pwm_(config|apply_might_sleep|apply_atomic|ops)`

PXA GPIO DRIVER

Mail

Robert Jarzmik <robert.jarzmik@free.fr>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

drivers/gpio/gpio-pxa.c

PXA MMCI DRIVER

Status

Orphan

PXA RTC DRIVER

Mail

Robert Jarzmik <robert.jarzmik@free.fr>

Mailing list

linux-rtc@vger.kernel.org

Status

Maintained

PXA2xx/PXA3xx SUPPORT

Mail

Daniel Mack <daniel@zonque.org>, Haojian Zhuang <haojian.zhuang@gmail.com>, Robert Jarzmik <robert.jarzmik@free.fr>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://github.com/hzhuang1/linux.git](https://github.com/hzhuang1/linux.git) git [git://github.com/rjarzmik/linux.git](https://github.com/rjarzmik/linux.git)

Files

arch/arm/boot/dts/intel/pxa/ arch/arm/mach-pxa/ drivers/dma/pxa*
drivers/pcmcia/pxa2xx* drivers/pinctrl/pxa/ drivers/spi/spi-pxa2xx*
drivers/usb/gadget/udc/pxa2* include/sound/pxa2xx-lib.h sound/arm/
pxa* sound/soc/pxa/

QAT DRIVER

Mail

Giovanni Cabiddu <giovanni.cabiddu@intel.com>

Mailing list

qat-linux@intel.com

Status

Supported

Files

drivers/crypto/intel/qat/

QCOM AUDIO (ASoC) DRIVERS

Mail

Srinivas Kandagatla <srinivas.kandagatla@linaro.org>, Banajit Goswami <bgoswami@quicinc.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Supported

Files

Documentation/devicetree/bindings/soc/qcom/qcom,apr* Documentation/devicetree/bindings/sound/qcom,* drivers/soc/qcom/apr.c
include/dt-bindings/sound/qcom,wcd9335.h sound/soc/codecs/lpass-rx-macro.* sound/soc/codecs/lpass-tx-macro.* sound/soc/codecs/lpass-va-macro.c sound/soc/codecs/lpass-wsa-macro.* sound/soc/codecs/msm8916-wcd-analog.c sound/soc/codecs/msm8916-wcd-digital.c sound/soc/codecs/wcd-clsh-v2.* sound/soc/codecs/wcd-mbhc-v2.* sound/soc/codecs/wcd9335.* sound/soc/codecs/wcd934x.c sound/soc/codecs/wsa881x.c sound/soc/codecs/wsa883x.c sound/soc/codecs/wsa884x.c sound/soc/qcom/

QCOM EMBEDDED USB DEBUGGER (EUD)

Mail

Souradeep Chowdhury <quic_schowdhu@quicinc.com>

Mailing list

linux-arm-msm@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-driver-eud Documentation/devicetree/bindings/soc/qcom/qcom,eud.yaml drivers/usb/misc/qcom_eud.c

QCOM IPA DRIVER

Mail

Alex Elder <elder@kernel.org>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/ipa/

QEMU MACHINE EMULATOR AND VIRTUALIZER SUPPORT

Mail

Gabriel Somlo <somlo@cmu.edu>, "Michael S. Tsirkin" <mst@redhat.com>

Mailing list

qemu-devel@nongnu.org

Status

Maintained

Files

drivers/firmware/qemu_fw_cfg.c include/uapi/linux/qemu_fw_cfg.h

QIB DRIVER

Mail

Dennis Dalessandro <dennis.dalessandro@cornelisnetworks.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Supported

Files

drivers/infiniband/hw/qib/

QLOGIC QL41xxx FCOE DRIVER

Mail

Saurav Kashyap <skashyap@marvell.com>, Javed Hasan
<jhasan@marvell.com>, GR-QLogic-Storage-Upstream@marvell.com

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Files

drivers/scsi/qedf/

QLOGIC QL41xxx ISCSI DRIVER

Mail

Nilesh Javali <njavali@marvell.com>, Manish Rangankar <mrangankar@marvell.com>, GR-QLogic-Storage-Upstream@marvell.com

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Files

drivers/scsi/qedi/

QLOGIC QL4xxx ETHERNET DRIVER

Mail

Ariel Elicr <aelior@marvell.com>, Manish Chopra <manishc@marvell.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/ethernet/qlogic/qed/ drivers/net/ethernet/qlogic/qede/
include/linux/qed/

QLOGIC QL4xxx RDMA DRIVER

Mail

Michal Kalderon <mkalderon@marvell.com>, Ariel Elicr <aelior@marvell.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Supported

Files

drivers/infiniband/hw/qedr/ include/uapi/rdma/qedr-abi.h

QLOGIC QLA1280 SCSI DRIVER

Mail

Michael Reed <mdr@sgi.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Maintained

Files

drivers/scsi/qla1280.[ch]

QLOGIC QLA2XXX FC-SCSI DRIVER

Mail

Nilesh Javali <njavali@marvell.com>, GR-QLogic-Storage-Upstream@marvell.com

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Files

drivers/scsi/qla2xxx/

QLOGIC QLA3XXX NETWORK DRIVER

Mail

GR-Linux-NIC-Dev@marvell.com

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/ethernet/qlogic/qla3xxx.*

QLOGIC QLA4XXX iSCSI DRIVER

Mail

Nilesh Javali <njavali@marvell.com>, Manish Rangankar <mrangankar@marvell.com>, GR-QLogic-Storage-Upstream@marvell.com

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Files

drivers/scsi/qla4xxx/

QLOGIC QLCNIC (1/10)Gb ETHERNET DRIVER

Mail

Shahed Shaikh <shshaikh@marvell.com>, Manish Chopra <manishc@marvell.com>, GR-Linux-NIC-Dev@marvell.com

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/ethernet/qlogic/qlcnict/

QM1D1B0004 MEDIA DRIVER

Mail

Akihiro Tsukada <tskd08@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Odd Fixes

Files

drivers/media/tuners/qm1d1b0004*

QM1D1C0042 MEDIA DRIVER

Mail

Akihiro Tsukada <tskd08@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Odd Fixes

Files

drivers/media/tuners/qm1d1c0042*

QNX4 FILESYSTEM

Mail

Anders Larsen <al@alarsen.net>

Status

Maintained

Web-page

<http://www.alarsen.net/linux/qnx4fs/>

Files

fs/qnx4/ include/uapi/linux/qnx4_fs.h include/uapi/linux/qnxtypes.h

QNX6 FILESYSTEM

Status

Orphan

Files

filesystems/qnx6 fs/qnx6/ include/linux/qnx6_fs.h

QORIQ DPAA2 FSL-MC BUS DRIVER

Mail

Stuart Yoder <stuyoder@gmail.com>, Laurentiu Tudor <laurentiu.tudor@nxp.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/stable/sysfs-bus-fsl-mc	Documentation/
devicetree/bindings/misc/fsl,goriq-mc.txt	network-
ing/device_drivers/ethernet/freescale/dpaa2/overview	drivers/bus/fsl-mc/
include/uapi/linux/fsl_mc.h	

QT1010 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/tuners/qt1010*

QUALCOMM ATH12K WIRELESS DRIVER

Mail

Kalle Valo <kvalo@kernel.org>, Jeff Johnson <jjohnson@kernel.org>

Mailing list

ath12k@lists.infradead.org

Status

Supported

Web-page

<https://wireless.wiki.kernel.org/en/users/Drivers/ath12k>

SCM

git git://git.kernel.org/pub/scm/linux/kernel/git/kvalo/ath.git

Files

drivers/net/wireless/ath/ath12k/

Regex

ath12k

QUALCOMM Atheros ATH10K Wireless Driver

Mail

Kalle Valo <kvalo@kernel.org>, Jeff Johnson <jjohnson@kernel.org>

Mailing list

ath10k@lists.infradead.org

Status

Supported

Web-page

<https://wireless.wiki.kernel.org/en/users/Drivers/ath10k>

SCM

git git://git.kernel.org/pub/scm/linux/kernel/git/kvalo/ath.git

Files

drivers/net/wireless/ath/ath10k/

Regex

ath10k

QUALCOMM Atheros ATH11K Wireless Driver

Mail

Kalle Valo <kvalo@kernel.org>, Jeff Johnson <jjohnson@kernel.org>

Mailing list

ath11k@lists.infradead.org

Status

Supported

Web-page

<https://wireless.wiki.kernel.org/en/users/Drivers/ath11k>

bugs

<https://wireless.wiki.kernel.org/en/users/Drivers/ath11k/bugreport>

SCM

git git://git.kernel.org/pub/scm/linux/kernel/git/kvalo/ath.git

Files

drivers/net/wireless/ath/ath11k/

Regex

ath11k

QUALCOMM ATHEROS ATH9K WIRELESS DRIVER

Mail

Toke Høiland-Jørgensen <toke@toke.dk>

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

Web-page

<https://wireless.wiki.kernel.org/en/users/Drivers/ath9k>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/kvalo/ath.git](https://git.kernel.org/pub/scm/linux/kernel/git/kvalo/ath.git)

Files

Documentation/devicetree/bindings/net/wireless/qca,ath9k.yaml
drivers/net/wireless/ath/ath9k/

QUALCOMM BAM-DMUX WWAN NETWORK DRIVER

Mail

Stephan Gerhold <stephan@gerhold.net>

Mailing list

netdev@vger.kernel.org, linux-arm-msm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/qcom,bam-dmux.yaml drivers/
net/wwan/qcom_bam_dmux.c

QUALCOMM CAMERA SUBSYSTEM DRIVER

Mail

Robert Foss <rfoss@kernel.org>, Todor Tomov <todor.too@gmail.com>, Bryan
O'Donoghue <bryan.odonoghue@linaro.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

admin-guide/media/qcom_camss Documentation/devicetree/bindings/
media/*camss* drivers/media/platform/qcom/camss/

QUALCOMM CLOCK DRIVERS

Mail

Bjorn Andersson <andersson@kernel.org>

Mailing list

linux-arm-msm@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/qcom/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/qcom/linux.git)

Files

Documentation/devicetree/bindings/clock/qcom,* drivers/clock/qcom/
include/dt-bindings/clock/qcom,*

QUALCOMM CLOUD AI (QAIC) DRIVER

Mail

Jeffrey Hugo <quic_jhugo@quicinc.com>

Reviewer

Carl Vanderlip <quic_carlv@quicinc.com>, Pranjali Ramajor Asha Kanojiya
<quic_pkanojiy@quicinc.com>

Mailing list

linux-arm-msm@vger.kernel.org, dri-devel@lists.freedesktop.org

Status

Supported

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

Documentation/accel/qaic/ drivers/accel/qaic/ include/uapi/drm/
qaic_accel.h

QUALCOMM CORE POWER REDUCTION (CPR) AVS DRIVER

Mail

Bjorn Andersson <andersson@kernel.org>, Konrad Dybcio <konrad.dybcio@linaro.org>

Mailing list

linux-pm@vger.kernel.org, linux-arm-msm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/power/avs/qcom,cpr.yaml drivers/
pmdomain/qcom/cpr.c

QUALCOMM CPUFREQ DRIVER MSM8996/APQ8096

Mail

Ilia Lin <ilia.lin@kernel.org>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/cpufreq/qcom-cpufreq-nvmem.yaml
Documentation/devicetree/bindings/opp/opp-v2-kryo-cpu.yaml drivers/
cpufreq/qcom-cpufreq-nvmem.c

QUALCOMM CRYPTO DRIVERS

Mail

Thara Gopinath <thara.gopinath@gmail.com>

Mailing list

linux-crypto@vger.kernel.org, linux-arm-msm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/crypto/qcom-qce.yaml drivers/
crypto/qce/

QUALCOMM EMAC GIGABIT ETHERNET DRIVER

Mail

Timur Tabi <timur@kernel.org>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/qualcomm/emac/

QUALCOMM ETHQOS ETHERNET DRIVER

Mail

Vinod Koul <vkoul@kernel.org>

Mailing list

netdev@vger.kernel.org, linux-arm-msm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/qcom,ethqos.yaml drivers/net/
ethernet/stmicro/stmmac/dwmac-qcom-ethqos.c

QUALCOMM FASTRPC DRIVER

Mail

Srinivas Kandagatla <srinivas.kandagatla@linaro.org>, Amol Maheshwari
<amahesh@qti.qualcomm.com>

Mailing list

linux-arm-msm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/misc/qcom,fastrpc.yaml drivers/
misc/fastrpc.c include/uapi/misc/fastrpc.h

QUALCOMM HEXAGON ARCHITECTURE

Mail

Brian Cain <bcain@quicinc.com>

Mailing list

linux-hexagon@vger.kernel.org

Status

Supported

SCM

`git git://git.kernel.org/pub/scm/linux/kernel/git/bcain/linux.git`

Files

arch/hexagon/

QUALCOMM HIDMA DRIVER

Mail

Sinan Kaya <okaya@kernel.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), linux-arm-msm@vger.kernel.org, dmaengine@vger.kernel.org

Status

Supported

Files

`drivers/dma/qcom/hidma*`

QUALCOMM I2C CCI DRIVER

Mail

Loic Poulain <loic.poulain@linaro.org>, Robert Foss <rfoss@kernel.org>

Mailing list

linux-i2c@vger.kernel.org, linux-arm-msm@vger.kernel.org

Status

Maintained

Files

`Documentation/devicetree/bindings/i2c/qcom,i2c-cci.yaml` `drivers/i2c/busses/i2c-qcom-cci.c`

QUALCOMM INTERCONNECT BWMON DRIVER

Mail

Krzysztof Kozlowski <krzysztof.kozlowski@linaro.org>

Mailing list

linux-arm-msm@vger.kernel.org

Status

Maintained

Files

`Documentation/devicetree/bindings/interconnect/qcom,msm8998-bwmon.yaml` `drivers/soc/qcom/icc-bwmon.c`

QUALCOMM IOMMU

Mail

Rob Clark <robdclark@gmail.com>

Mailing list

iommu@lists.linux.dev, linux-arm-msm@vger.kernel.org

Status

Maintained

Files

`drivers/iommu/arm/arm-smmu/qcom_iommu.c` `drivers/iommu/arm/arm-smmu/arm-smmu-qcom*` `drivers/iommu/msm_iommu*`

QUALCOMM IPC ROUTER (QRTR) DRIVER

Mail

Manivannan Sadhasivam <manivannan.sadhasivam@linaro.org>

Mailing list

linux-arm-msm@vger.kernel.org

Status

Maintained

Files

`include/trace/events/qrtr.h` `include/uapi/linux/qrtr.h` `net/qrtr/`

QUALCOMM IPCC MAILBOX DRIVER

Mail

Manivannan Sadhasivam <manivannan.sadhasivam@linaro.org>

Mailing list

linux-arm-msm@vger.kernel.org

Status

Supported

Files

`Documentation/devicetree/bindings/mailbox/qcom-ipcc.yaml` `drivers/mailbox/qcom-ipcc.c` `include/dt-bindings/mailbox/qcom-ipcc.h`

QUALCOMM IPQ4019 USB PHY DRIVER

Mail

Robert Marko <robert.marko@sartura.hr>, Luka Perkovic <luka.perkov@sartura.hr>

Mailing list

linux-arm-msm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/phy/qcom-usb-ipq4019-phy.yaml
drivers/phy/qualcomm/phy-qcom-ipq4019-usb.c

QUALCOMM IPQ4019 VQMMC REGULATOR DRIVER**Mail**

Robert Marko <robert.marko@sartura.hr>, Luka Perkovic
<luka.perkov@sartura.hr>

Mailing list

linux-arm-msm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/regulator/vqmmc-ipq4019-regulator.
yaml drivers/regulator/vqmmc-ipq4019-regulator.c

QUALCOMM NAND CONTROLLER DRIVER**Mail**

Manivannan Sadhasivam <manivannan.sadhasivam@linaro.org>

Mailing list

linux-mtd@lists.infradead.org, linux-arm-msm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/mtd/qcom,nandc.yaml drivers/mtd/
nand/raw/qcom_nandc.c

QUALCOMM QSEECOM DRIVER**Mail**

Maximilian Luz <luzmaximilian@gmail.com>

Mailing list

linux-arm-msm@vger.kernel.org

Status

Maintained

Files

drivers/firmware/qcom/qcom_qseecom.c

QUALCOMM QSEECOM UEFISECAPP DRIVER

Mail

Maximilian Luz <luzmaximilian@gmail.com>

Mailing list

linux-arm-msm@vger.kernel.org

Status

Maintained

Files

drivers/firmware/qcom/qcom_qseecom_uefisecapp.c

QUALCOMM RMNET DRIVER

Mail

Subash Abhinov Kasiviswanathan <quic_subashab@quicinc.com>, Sean Tranchetti <quic_stranche@quicinc.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

networking/device_drivers/cellular/qualcomm/rmnet drivers/net/ethernet/
qualcomm/rmnet/ include/linux/if_rmnet.h

QUALCOMM TSENS THERMAL DRIVER

Mail

Amit Kucheria <amitk@kernel.org>, Thara Gopinath
<thara.gopinath@gmail.com>

Mailing list

linux-pm@vger.kernel.org, linux-arm-msm@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/thermal/qcom-tsens.yaml drivers/
thermal/qcom/

QUALCOMM TYPEC PORT MANAGER DRIVER

Mail

Bryan O'Donoghue <bryan.odonoghue@linaro.org>

Mailing list

linux-arm-msm@vger.kernel.org, linux-usb@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/usb/qcom,pmic-*.yaml drivers/usb/
typec/tcpm/qcom/

QUALCOMM VENUS VIDEO ACCELERATOR DRIVER

Mail

Stanimir Varbanov <stanimir.k.varbanov@gmail.com>, Vikash Garodia
<quic_vgarodia@quicinc.com>

Reviewer

Bryan O'Donoghue <bryan.odonoghue@linaro.org>

Mailing list

linux-media@vger.kernel.org, linux-arm-msm@vger.kernel.org

Status

Maintained

SCM

[git git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/*venus* drivers/media/
platform/qcom/venus/

QUALCOMM WCN36XX WIRELESS DRIVER

Mail

Loic Poulain <loic.poulain@linaro.org>

Mailing list

wcn36xx@lists.infradead.org

Status

Supported

Web-page

<https://wireless.wiki.kernel.org/en/users/Drivers/wcn36xx>

Files

drivers/net/wireless/ath/wcn36xx/

QUANTENNA QTNFMAC WIRELESS DRIVER

Mail

Igor Mitsyanko <imitsyanko@quantenna.com>

Reviewer

Sergey Matyukevich <geomatsi@gmail.com>

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

Files

drivers/net/wireless/quantenna

RADEON and AMDGPU DRM DRIVERS

Mail

Alex Deucher <alexander.deucher@amd.com>, Christian König <christian.koenig@amd.com>, Pan, Xinhui <Xinhui.Pan@amd.com>

Mailing list

amd-gfx@lists.freedesktop.org

Status

Supported

bugs

<https://gitlab.freedesktop.org/drm/amd/-/issues>

chat

<irc://irc.oftc.net/radeon>

SCM

git <https://gitlab.freedesktop.org/agd5f/linux.git>

Files

Documentation/gpu/amdgpu/ drivers/gpu/drm/amd/ drivers/gpu/drm/ci/
xfails/amd* drivers/gpu/drm/radeon/ include/uapi/drm/amdgpu_drm.h
include/uapi/drm/radeon_drm.h

RADEON FRAMEBUFFER DISPLAY DRIVER

Mail

Benjamin Herrenschmidt <benh@kernel.crashing.org>

Mailing list

linux-fbdev@vger.kernel.org

Status

Maintained

Files

drivers/video/fbdev/aty/radeon* include/uapi/linux/radeonfb.h

RADIOHARK RADIO DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/radio/radio-shark.c

RADIOHARK2 RADIO DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/radio/radio-shark2.c
radio-tea5777.c

drivers/media/radio/

RADOS BLOCK DEVICE (RBD)

Mail

Ilya Dryomov <idryomov@gmail.com>

Reviewer

Dongsheng Yang <dongsheng.yang@easystack.cn>

Mailing list

ceph-devel@vger.kernel.org

Status

Supported

Web-page

<http://ceph.com/>

SCM

git <https://github.com/ceph/ceph-client.git>

Files

Documentation/ABI/testing/sysfs-bus-rbd drivers/block/rbd.c drivers/
block/rbd_types.h

RAGE128 FRAMEBUFFER DISPLAY DRIVER

Mailing list

linux-fbdev@vger.kernel.org

Status

Orphan

Files

drivers/video/fbdev/aty/aty128fb.c

RAINSHADOW-CEC DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/cec/usb/rainshadow/

RALINK MIPS ARCHITECTURE

Mail

John Crispin <john@phrozen.org>, Sergio Paracuellos <sergio.paracuellos@gmail.com>

Mailing list

linux-mips@vger.kernel.org

Status

Maintained

Files

arch/mips/ralink

RALINK MT7621 MIPS ARCHITECTURE

Mail

Arinç ÜNAL <arinc.unal@arinc9.com>, Sergio Paracuellos <sergio.paracuellos@gmail.com>

Mailing list

linux-mips@vger.kernel.org

Status

Maintained

Files

arch/mips/boot/dts/ralink/mt7621*

RALINK RT2X00 WIRELESS LAN DRIVER

Mail

Stanislaw Gruszka <stf_xl@wp.pl>

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

Files

drivers/net/wireless/ralink/rt2x00/

RAMDISK RAM BLOCK DEVICE DRIVER

Mail

Jens Axboe <axboe@kernel.dk>

Status

Maintained

Files

admin-guide/blockdev/ramdisk drivers/block/brd.c

RANCHU VIRTUAL BOARD FOR MIPS

Mail

Miodrag Dinic <miodrag.dinic@mips.com>

Mailing list

linux-mips@vger.kernel.org

Status

Supported

Files

arch/mips/configs/generic/board-ranchu.config arch/mips/generic/
board-ranchu.c

RANDOM NUMBER DRIVER

Mail

"Theodore Ts'o" <tytso@mit.edu>, Jason A. Donenfeld <Jason@zx2c4.com>

Status

Maintained

SCM

git <https://git.kernel.org/pub/scm/linux/kernel/git/crng/random.git>

Files

drivers/char/random.c drivers/virt/vmgenid.c

RAPIDIO SUBSYSTEM

Mail

Matt Porter <mporter@kernel.crashing.org>, Alexandre Bounine
<alex.bou9@gmail.com>

Status

Maintained

Files

drivers/rapidio/

RAS INFRASTRUCTURE

Mail

Tony Luck <tony.luck@intel.com>, Borislav Petkov <bp@alien8.de>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

admin-guide/ras drivers/ras/ include/linux/ras.h include/ras/
ras_event.h

RC-CORE / LIRC FRAMEWORK

Mail

Sean Young <sean@mess.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<http://linxrtv.org>

SCM

git git://linuxtv.org/media_tree.git

Files

driver-api/media/rc-core Documentation/userspace-api/media/rc/ drivers/
media/rc/ include/media/rc-core.h include/media/rc-map.h include/
uapi/linux/lirc.h

RCMM REMOTE CONTROLS DECODER**Mail**

Patrick Lerda <patrick9876@free.fr>

Status

Maintained

Files

drivers/media/rc/ir-rcmm-decoder.c

RCUTORTURE TEST FRAMEWORK**Mail**

"Paul E. McKenney" <paulmck@kernel.org>, Josh Triplett
<josh@joshtriplett.org>

Reviewer

Steven Rostedt <rostedt@goodmis.org>, Mathieu Desnoyers <mathieu.desnoyers@efficios.com>, Lai Jiangshan <jiangshanlai@gmail.com>

Mailing list

rcu@vger.kernel.org

Status

Supported

SCM

git git://git.kernel.org/pub/scm/linux/kernel/git/paulmck/linux-rcu.git dev

Files

tools/testing/selftests/rcutorture

RDACM20 Camera Sensor**Mail**

Jacopo Mondi <jacopo+renesas@jmondi.org>, Kieran Bingham
<kieran.bingham+renesas@ideasonboard.com>, Laurent Pinchart
<laurent.pinchart+renesas@ideasonboard.com>, Niklas Söderlund
<niklas.soderlund+renesas@ragnatech.se>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/i2c/imi,rdacm2x-gmsl.yaml
drivers/media/i2c/max9271.c drivers/media/i2c/max9271.h drivers/
media/i2c/rdacm20.c

RDACM21 Camera Sensor

Mail

Jacopo Mondi <jacopo+renesas@jmondi.org>, Kieran Bingham
<kieran.bingham+renesas@ideasonboard.com>, Laurent Pinchart
<laurent.pinchart+renesas@ideasonboard.com>, Niklas Söderlund
<niklas.soderlund+renesas@ragnatech.se>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/i2c/imi,rdacm2x-gmsl.yaml
drivers/media/i2c/max9271.c drivers/media/i2c/max9271.h drivers/
media/i2c/rdacm21.c

RDC R-321X SoC

Mail

Florian Fainelli <florian@openwrt.org>

Status

Maintained

RDC R6040 FAST ETHERNET DRIVER

Mail

Florian Fainelli <f.fainelli@gmail.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/rdc/r6040.c

RDMAVT - RDMA verbs software

Mail

Dennis Dalessandro <dennis.dalessandro@cornelisnetworks.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Supported

Files

drivers/infiniband/sw/rdmavt

RDS - RELIABLE DATAGRAM SOCKETS

Mail

Allison Henderson <allison.henderson@oracle.com>

Mailing list

netdev@vger.kernel.org, linux-rdma@vger.kernel.org, rds-devel@oss.oracle.com
(moderated for non-subscribers)

Status

Supported

Web-page

<https://oss.oracle.com/projects/rds/>

Files

networking/rds net/rds/

RDT - RESOURCE ALLOCATION

Mail

Fenghua Yu <fenghua.yu@intel.com>, Reinette Chatre
<reinette.chatre@intel.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

Files

Documentation/arch/x86/resctrl* arch/x86/include/asm/resctrl.h arch/
x86/kernel/cpu/resctrl/ tools/testing/selftests/resctrl/

READ-COPY UPDATE (RCU)

Mail

"Paul E. McKenney" <paulmck@kernel.org>, Frederic Weisbecker <frederic@kernel.org> (kernel/rcu/tree_nocb.h), Neeraj Upadhyay <quic_neeraju@quicinc.com> (kernel/rcu/tasks.h), Joel Fernandes <joel@joelfernandes.org>, Josh Triplett <josh@joshtriplett.org>, Boqun Feng <boqun.feng@gmail.com>

Reviewer

Steven Rostedt <rostedt@goodmis.org>, Mathieu Desnoyers <mathieu.desnoyers@efficios.com>, Lai Jiangshan <jiangshanlai@gmail.com>, Zqiang <qiang.zhang1211@gmail.com>

Mailing list

rcu@vger.kernel.org

Status

Supported

Web-page

<http://www.rdrop.com/users/paulmck/RCU/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/paulmck/linux-rcu.git](https://git.kernel.org/pub/scm/linux/kernel/git/paulmck/linux-rcu.git) dev

Files

Documentation/RCU/ include/linux/rcu* kernel/rcu/

Excluded

RCU/torture include/linux/srcu*.h kernel/rcu/srcu*.c

REAL TIME CLOCK (RTC) SUBSYSTEM

Mail

Alexandre Belloni <alexandre.belloni@bootlin.com>

Mailing list

linux-rtc@vger.kernel.org

Status

Maintained

Patchwork

<http://patchwork.ozlabs.org/project/rtc-linux/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/abelloni/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/abelloni/linux.git)

Files

admin-guide/rtc Documentation/devicetree/bindings/rtc/ drivers/rtc/
include/linux/rtc.h include/linux/rtc/ include/uapi/linux/rtc.h
tools/testing/selftests/rtc/

Real-time Linux Analysis (RTLA) tools

Mail

Daniel Bristot de Oliveira <bristot@kernel.org>, Steven Rostedt <rost-edt@goodmis.org>

Mailing list

linux-trace-kernel@vger.kernel.org

Status

Maintained

Files

Documentation/tools/rtla/ tools/tracing/rtla/

REALTEK AUDIO CODECS

Mail

Oder Chiou <oder_chiou@realtek.com>

Status

Maintained

Files

include/sound/rt*.h sound/soc/codecs/rt*

REALTEK OTTO WATCHDOG

Mail

Sander Vanheule <sander@svanheule.net>

Mailing list

linux-watchdog@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/watchdog/realtek,otto-wdt.yaml
drivers/watchdog/realtek_otto_wdt.c

REALTEK RTL83xx SMI DSA ROUTER CHIPS

Mail

Linus Walleij <linus.walleij@linaro.org>, Alvin Šipraga <alsi@bang-olufsen.dk>

Status

Maintained

Files

Documentation/devicetree/bindings/net/dsa/realtek.yaml drivers/net/dsa/realtek/*

REALTEK WIRELESS DRIVER (rtlwifi family)

Mail

Ping-Ke Shih <pkshih@realtek.com>

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

Files

drivers/net/wireless/realtek/rtlwifi/

REALTEK WIRELESS DRIVER (rtw88)

Mail

Ping-Ke Shih <pkshih@realtek.com>

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

Files

drivers/net/wireless/realtek/rtw88/

REALTEK WIRELESS DRIVER (rtw89)

Mail

Ping-Ke Shih <pkshih@realtek.com>

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

Files

drivers/net/wireless/realtek/rtw89/

REDPINE WIRELESS DRIVER

Mailing list

linux-wireless@vger.kernel.org

Status

Orphan

Files

drivers/net/wireless/rsi/

REGISTER MAP ABSTRACTION

Mail

Mark Brown <broonie@kernel.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/broonie/regmap.git](https://git.kernel.org/pub/scm/linux/kernel/git/broonie/regmap.git)

Files

Documentation/devicetree/bindings/regmap/ drivers/base/regmap/
include/linux/regmap.h

REISERFS FILE SYSTEM

Mailing list

reiserfs-devel@vger.kernel.org

Status

Obsolete

Files

fs/reiserfs/

REMOTE PROCESSOR (REMOTEPROC) SUBSYSTEM

Mail

Bjorn Andersson <andersson@kernel.org>, Mathieu Poirier <mathieu.poirier@linaro.org>

Mailing list

linux-remoteproc@vger.kernel.org

Status

Maintained

SCM

git <https://git.kernel.org/pub/scm/linux/kernel/git/remoteproc/linux.git> rproc-next

Files

Documentation/ABI/testing/sysfs-class-remoteproc Documentation/
devicetree/bindings/remoteproc/ staging/remoteproc drivers/remoteproc/
include/linux/remoteproc.h include/linux/remoteproc/

REMOTE PROCESSOR MESSAGING (RPMSG) SUBSYSTEM

Mail

Bjorn Andersson <andersson@kernel.org>, Mathieu Poirier <mathieu.poirier@linaro.org>

Mailing list

linux-remoteproc@vger.kernel.org

Status

Maintained

SCM

git <https://git.kernel.org/pub/scm/linux/kernel/git/remoteproc/linux.git> rpmsg-next

Files

Documentation/ABI/testing/sysfs-bus-rpmsg staging/rpmsg drivers/rpmsg/ include/linux/rpmsg.h include/linux/rpmsg/ include/uapi/linux/rpmsg.h samples/rpmsg/

REMOTE PROCESSOR MESSAGING (RPMSG) WWAN CONTROL DRIVER

Mail

Stephan Gerhold <stephan@gerhold.net>

Mailing list

netdev@vger.kernel.org, linux-remoteproc@vger.kernel.org

Status

Maintained

Files

drivers/net/wwan/rpmsg_wwan_ctrl.c

RENESAS CLOCK DRIVERS

Mail

Geert Uytterhoeven <geert+renesas@glider.be>

Mailing list

linux-renesas-soc@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/geert/renesas-drivers.git](https://git.kernel.org/pub/scm/linux/kernel/git/geert/renesas-drivers.git)
renesas-clk

Files

Documentation/devicetree/bindings/clock/renesas,* drivers/clock/renesas/

RENESAS EMEV2 I2C DRIVER

Mail

Wolfram Sang <wsa+renesas@sang-engineering.com>

Mailing list

linux-renesas-soc@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/i2c/renesas,iic-emev2.yaml
drivers/i2c/busses/i2c-emev2.c

RENESAS ETHERNET DRIVERS

Reviewer

Sergey Shtylyov <s.shtylyov@omp.ru>

Mailing list

netdev@vger.kernel.org, linux-renesas-soc@vger.kernel.org

Files

Documentation/devicetree/bindings/net/renesas,*.yaml drivers/net/
ethernet/renesas/ include/linux/sh_eth.h

RENESAS IDT821034 ASoC CODEC

Mail

Herve Codina <herve.codina@bootlin.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/sound/renesas,idt821034.yaml
sound/soc/codecs/idt821034.c

RENESAS R-CAR GEN3 & RZ/N1 NAND CONTROLLER DRIVER

Mail

Miquel Raynal <miquel.raynal@bootlin.com>

Mailing list

linux-mtd@lists.infradead.org, linux-renesas-soc@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/mtd/renesas-nandc.yaml drivers/
mtd/nand/raw/renesas-nand-controller.c

RENESAS R-CAR GYROADC DRIVER

Mail

Marek Vasut <marek.vasut@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/iio/adc/renesas,rcar-gyroadc.yaml
drivers/iio/adc/rcar-gyroadc.c

RENESAS R-CAR I2C DRIVERS

Mail

Wolfram Sang <wsa+renesas@sang-engineering.com>

Mailing list

linux-renesas-soc@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/i2c/renesas,rcar-i2c.yaml
Documentation/devicetree/bindings/i2c/renesas,rmobile-iic.yaml
drivers/i2c/busses/i2c-rcar.c drivers/i2c/busses/i2c-sh_mobile.c

RENESAS R-CAR SATA DRIVER

Reviewer

Sergey Shtylyov <s.shtylyov@omp.ru>

Mailing list

linux-ide@vger.kernel.org, linux-renesas-soc@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/ata/renesas,rcar-sata.yaml
drivers/ata/sata_rcar.c

RENESAS R-CAR THERMAL DRIVERS

Mail

Niklas Söderlund <niklas.soderlund@ragnatech.se>

Mailing list

linux-renesas-soc@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/thermal/rcar-gen3-thermal.yaml
Documentation/devicetree/bindings/thermal/rcar-thermal.yaml drivers/
thermal/rcar_gen3_thermal.c drivers/thermal/rcar_thermal.c

RENESAS RIIC DRIVER

Mail

Chris Brandt <chris.brandt@renesas.com>

Mailing list

linux-renesas-soc@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/i2c/renesas,riic.yaml drivers/i2c/
busses/i2c-riic.c

RENESAS RZ/G2L A/D DRIVER

Mail

Lad Prabhakar <prabhakar.mahadev-lad.rj@bp.renesas.com>

Mailing list

linux-iio@vger.kernel.org, linux-renesas-soc@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/iio/adx/renesas,rzg2l-adc.yaml
drivers/iio/adx/rzg2l_adc.c

RENESAS RZ/G2L MTU3a COUNTER DRIVER

Mail

Biju Das <biju.das.jz@bp.renesas.com>

Mailing list

linux-iio@vger.kernel.org, linux-renesas-soc@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/timer/renesas,rz-mtu3.yaml
drivers/counter/rz-mtu3-cnt.c

RENESAS RZ/N1 A5PSW SWITCH DRIVER

Mail

Clément Léger <clement.leger@bootlin.com>

Mailing list

linux-renesas-soc@vger.kernel.org, netdev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/dsa/renesas,rzn1-a5psw.yaml
Documentation/devicetree/bindings/net/pcs/renesas,rzn1-miic.yaml
drivers/net/dsa/rzn1_a5psw* drivers/net/pcs/pcs-rzn1-miic.c include/
dt-bindings/net/pcs-rzn1-miic.h include/linux/pcs-rzn1-miic.h net/
dsa/tag_rzn1_a5psw.c

RENESAS RZ/N1 RTC CONTROLLER DRIVER

Mail

Miquel Raynal <miquel.raynal@bootlin.com>

Mailing list

linux-rtc@vger.kernel.org, linux-renesas-soc@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/rtc/renesas,rzn1-rtc.yaml drivers/
rtc/rtc-rzn1.c

RENESAS RZ/N1 USBF CONTROLLER DRIVER

Mail

Herve Codina <herve.codina@bootlin.com>

Mailing list

linux-renesas-soc@vger.kernel.org, linux-usb@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/usb/renesas,rzn1-usbfs.yaml
drivers/usb/gadget/udc/renesas_usbfs.c

RENESAS RZ/V2M I2C DRIVER

Mail

Fabrizio Castro <fabrizio.castro.jz@renesas.com>

Mailing list

linux-i2c@vger.kernel.org, linux-renesas-soc@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/i2c/renesas,rzv2m.yaml drivers/
i2c/busses/i2c-rzv2m.c

RENESAS USB PHY DRIVER

Mail

Yoshihiro Shimoda <yoshihiro.shimoda.uh@renesas.com>

Mailing list

linux-renesas-soc@vger.kernel.org

Status

Maintained

Files

drivers/phy/renesas/phy-rcar-gen3-usb*.c

RENESAS VERSACLOCK 7 CLOCK DRIVER

Mail

Alex Helms <alexander.helms.jy@renesas.com>

Status

Maintained

Files

Documentation/devicetree/bindings/clock/renesas,versaclock7.yaml
drivers/clk/clk-versaclock7.c

RENESAS X9250 DIGITAL POTENTIOMETERS DRIVER

Mail

Herve Codina <herve.codina@bootlin.com>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/potentiometer/renesas,x9250.
yaml drivers/iio/potentiometer/x9250.c

RESET CONTROLLER FRAMEWORK

Mail

Philipp Zabel <p.zabel@pengutronix.de>

Status

Maintained

SCM

git git://git.pengutronix.de/git/pza/linux

Files

Documentation/devicetree/bindings/reset/ driver-api/reset drivers/
reset/ include/dt-bindings/reset/ include/linux/reset-controller.h
include/linux/reset.h include/linux/reset/

Content regex

`\b(?:devm_|of_)?reset_control(?:ler_[a-z]+|_[a-z_]+)?\b`

RESTARTABLE SEQUENCES SUPPORT

Mail

Mathieu Desnoyers <mathieu.desnoyers@efficios.com>, Peter Zijlstra <petez@infradead.org>, "Paul E. McKenney" <paulmck@kernel.org>, Boqun Feng <boqun.feng@gmail.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

Files

include/trace/events/rseq.h include/uapi/linux/rseq.h kernel/rseq.c
tools/testing/selftests/rseq/

RFKILL

Mail

Johannes Berg <johannes@sipsolutions.net>

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

Web-page

<https://wireless.wiki.kernel.org/>

Patchwork

<https://patchwork.kernel.org/project/linux-wireless/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/wireless/wireless.git](https://git.kernel.org/pub/scm/linux/kernel/git/wireless/wireless.git) git
git://git.kernel.org/pub/scm/linux/kernel/git/wireless/wireless-next.git

Files

Documentation/ABI/stable/sysfs-class-rfkill driver-api/rfkill include/
linux/rfkill.h include/uapi/linux/rfkill.h net/rfkill/

RHASHTABLE

Mail

Thomas Graf <tgraf@suug.ch>, Herbert Xu <herbert@gondor.apana.org.au>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

include/linux/rhashtable-types.h include/linux/rhashtable.h lib/
rhashtable.c lib/test_rhashtable.c

RICOH R5C592 MEMORYSTICK DRIVER

Mail

Maxim Levitsky <maximlevitsky@gmail.com>

Status

Maintained

Files

drivers/memstick/host/r592.*

RICOH SMARTMEDIA/XD DRIVER

Mail

Maxim Levitsky <maximlevitsky@gmail.com>

Status

Maintained

Files

`drivers/mtd/nand/raw/r852.c` `drivers/mtd/nand/raw/r852.h`

RISC-V ARCHITECTURE

Mail

Paul Walmsley <paul.walmsley@sifive.com>, Palmer Dabbelt
<palmer@dabbelt.com>, Albert Ou <aou@eecs.berkeley.edu>

Mailing list

linux-riscv@lists.infradead.org

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/linux-riscv/list/>

chat

<irc://irc.libera.chat/riscv>

P

[arch/riscv/patch-acceptance](#)

SCM

git <git://git.kernel.org/pub/scm/linux/kernel/git/riscv/linux.git>

Files

`arch/riscv/`

Regex

`riscv`

Content regex

`riscv`

RISC-V MICROCHIP FPGA SUPPORT

Mail

Conor Dooley <conor.dooley@microchip.com>, Daire McNamara
<daire.mcnamara@microchip.com>

Mailing list

linux-riscv@lists.infradead.org

Status

Supported

Files

```

Documentation/devicetree/bindings/clock/microchip,mpfs*.yaml
Documentation/devicetree/bindings/gpio/microchip,mpfs-gpio.yaml
Documentation/devicetree/bindings/i2c/microchip,corei2c.yaml
Documentation/devicetree/bindings/mailbox/microchip,mpfs-mailbox.
yaml Documentation/devicetree/bindings/net/can/microchip,mpfs-can.
yaml Documentation/devicetree/bindings/pwm/microchip,corepwm.
yaml Documentation/devicetree/bindings/riscv/microchip.yaml
Documentation/devicetree/bindings/soc/microchip/microchip,
mpfs-sys-controller.yaml Documentation/devicetree/bindings/spi/
microchip,mpfs-spi.yaml Documentation/devicetree/bindings/usb/
microchip,mpfs-musb.yaml arch/riscv/boot/dts/microchip/ drivers/
char/hw_random/mpfs-rng.c drivers/clk/microchip/clk-mpfs*.c
drivers/firmware/microchip/mpfs-auto-update.c drivers/i2c/busses/
i2c-microchip-corei2c.c drivers/mailbox/mailbox-mpfs.c drivers/pci/
controller/pcie-microchip-host.c drivers/pwm/pwm-microchip-core.
c drivers/reset/reset-mpfs.c drivers/rtc/rtc-mpfs.c drivers/soc/
microchip/mpfs-sys-controller.c drivers/spi/spi-microchip-core-qspi.
c drivers/spi/spi-microchip-core.c drivers/usb/musb/mpfs.c include/
soc/microchip/mpfs.h

```

RISC-V MISC SOC SUPPORT**Mail**

Conor Dooley <conor@kernel.org>

Mailing list

linux-riscv@lists.infradead.org

Status

Maintained

Patchwork

<https://patchwork.kernel.org/project/linux-riscv/list/>

SCM

git <https://git.kernel.org/pub/scm/linux/kernel/git/conor/linux.git/>

Files

Documentation/devicetree/bindings/riscv/ arch/riscv/boot/dts/

Excluded

arch/riscv/boot/dts/allwinner/ arch/riscv/boot/dts/renesas/

RISC-V PMU DRIVERS

Mail

Atish Patra <atishp@atishpatra.org>

Reviewer

Anup Patel <anup@brainfault.org>

Mailing list

linux-riscv@lists.infradead.org

Status

Supported

Files

drivers/perf/riscv_pmu.c drivers/perf/riscv_pmu_legacy.c drivers/
perf/riscv_pmu_sbi.c

RISC-V THEAD SoC SUPPORT

Mail

Jisheng Zhang <jszhang@kernel.org>, Guo Ren <guoren@kernel.org>, Fu Wei
<wefu@redhat.com>

Mailing list

linux-riscv@lists.infradead.org

Status

Maintained

Files

arch/riscv/boot/dts/thead/

RNBD BLOCK DRIVERS

Mail

Md. Haris Iqbal <haris.iqbal@ionos.com>, Jack Wang <jinpu.wang@ionos.com>

Mailing list

linux-block@vger.kernel.org

Status

Maintained

Files

drivers/block/rnbd/

ROCCAT DRIVERS

Mail

Stefan Achatz <erazor_de@users.sourceforge.net>

Status

Maintained

Web-page

<http://sourceforge.net/projects/roccat/>

Files

Documentation/ABI/*/sysfs-driver-hid-roccat* drivers/hid/hid-roccat*
include/linux/hid-roccat*

ROCKCHIP CRYPTO DRIVERS

Mail

Corentin Labbe <clabbe@baylibre.com>

Mailing list

linux-crypto@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/crypto/rockchip,rk3288-crypto.
yaml drivers/crypto/rockchip/

ROCKCHIP I2S TDM DRIVER

Mail

Nicolas Frattaroli <frattaroli.nicolas@gmail.com>

Mailing list

linux-rockchip@lists.infradead.org

Status

Maintained

Files

Documentation/devicetree/bindings/sound/rockchip,i2s-tdm.yaml sound/
soc/rockchip/rockchip_i2s_tdm.*

ROCKCHIP ISP V1 DRIVER

Mail

Dafna Hirschfeld <dafna@fastmail.com>, Laurent Pinchart <laurent.pinchart@ideasonboard.com>

Mailing list

linux-media@vger.kernel.org, linux-rockchip@lists.infradead.org

Status

Maintained

Files

admin-guide/media/rkisp1 Documentation/devicetree/bindings/media/rockchip-isp1.yaml userspace-api/media/v4l/metafmt-rkisp1 drivers/media/platform/rockchip/rkisp1 include/uapi/linux/rkisp1-config.h

ROCKCHIP RASTER 2D GRAPHIC ACCELERATION UNIT DRIVER

Mail

Jacob Chen <jacob-chen@iotwrt.com>, Ezequiel Garcia <ezequiel@vanguardiasur.com.ar>

Mailing list

linux-media@vger.kernel.org, linux-rockchip@lists.infradead.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/rockchip-rga.yaml drivers/media/platform/rockchip/rga/

ROCKCHIP VIDEO DECODER DRIVER

Mail

Ezequiel Garcia <ezequiel@vanguardiasur.com.ar>

Mailing list

linux-media@vger.kernel.org, linux-rockchip@lists.infradead.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/rockchip,vdec.yaml drivers/staging/media/rkvdec/

ROCKER DRIVER

Mail

Jiri Pirko <jiri@resnulli.us>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/ethernet/rocker/

ROCKETPORT EXPRESS/INFINITY DRIVER

Mail

Kevin Cernekee <cernekee@gmail.com>

Mailing list

linux-serial@vger.kernel.org

Status

Odd Fixes

Files

drivers/tty/serial/rp2.*

ROHM BD99954 CHARGER IC

Mail

Matti Vaittinen <mazziesaccount@gmail.com>

Status

Supported

Files

drivers/power/supply/bd99954-charger.c
bd99954-charger.h

drivers/power/supply/

ROHM BH1750 AMBIENT LIGHT SENSOR DRIVER

Mail

Tomasz Duszynski <tduszyns@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/iio/light/bh1750.yaml drivers/iio/
light/bh1750.c

ROHM BM1390 PRESSURE SENSOR DRIVER

Mail

Matti Vaittinen <mazziesaccount@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Files

drivers/iio/pressure/rohm-bm1390.c

ROHM BU270xx LIGHT SENSOR DRIVERS

Mail

Matti Vaittinen <mazziesaccount@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Files

drivers/iio/light/rohm-bu27008.c drivers/iio/light/rohm-bu27034.c

ROHM MULTIFUNCTION BD9571MWV-M PMIC DEVICE DRIVERS

Mail

Marek Vasut <marek.vasut+renesas@gmail.com>

Mailing list

linux-kernel@vger.kernel.org, linux-renesas-soc@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/mfd/rohm,bd9571mwv.yaml drivers/
gpio/gpio-bd9571mwv.c drivers/mfd/bd9571mwv.c drivers/regulator/
bd9571mwv-regulator.c include/linux/mfd/bd9571mwv.h

ROHM POWER MANAGEMENT IC DEVICE DRIVERS

Mail

Matti Vaittinen <mazziesaccount@gmail.com>

Status

Supported

Files

drivers/clk/clk-bd718x7.c drivers/gpio/gpio-bd71815.c drivers/gpio/
gpio-bd71828.c drivers/mfd/rohm-bd71828.c drivers/mfd/rohm-bd718x7.
c drivers/mfd/rohm-bd9576.c drivers/regulator/bd71815-regulator.
c drivers/regulator/bd71828-regulator.c drivers/regulator/
bd718x7-regulator.c drivers/regulator/bd9576-regulator.c drivers/
regulator/rohm-regulator.c drivers/rtc/rtc-bd70528.c drivers/
watchdog/bd9576_wdt.c include/linux/mfd/rohm-bd71815.h include/linux/
mfd/rohm-bd71828.h include/linux/mfd/rohm-bd718x7.h include/linux/
mfd/rohm-bd957x.h include/linux/mfd/rohm-generic.h include/linux/
mfd/rohm-shared.h

ROSE NETWORK LAYER**Mail**

Ralf Baechle <ralf@linux-mips.org>

Mailing list

linux-hams@vger.kernel.org

Status

Maintained

Web-page

<https://linux-ax25.in-berlin.de>

Files

include/net/rose.h include/uapi/linux/rose.h net/rose/

ROTATION DRIVER FOR ALLWINNER A83T**Mail**

Jernej Skrabec <jernej.skrabec@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

[git git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/allwinner,
sun8i-a83t-de2-rotate.yaml drivers/media/platform/sunxi/
sun8i-rotate/

RPMSG TTY DRIVER

Mail

Arnaud Pouliquen <arnaud.pouliquen@foss.st.com>

Mailing list

linux-remoteproc@vger.kernel.org

Status

Maintained

Files

drivers/tty/rpmsg_tty.c

RTL2830 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/dvb-frontends/rtl2830*

RTL2832 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/dvb-frontends/rtl2832*

RTL2832_SDR MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/dvb-frontends/rtl2832_sdr*

RTL8180 WIRELESS DRIVER

Mailing list

linux-wireless@vger.kernel.org

Status

Orphan

Files

drivers/net/wireless/realtek/rtl818x/rtl8180/

RTL8187 WIRELESS DRIVER

Mail

Hin-Tak Leung <hintak.leung@gmail.com>, <Larry.Finger@lwfinger.net>

Larry

Finger

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

Files

drivers/net/wireless/realtek/rtl818x/rtl8187/

RTL8XXXU WIRELESS DRIVER (rtl8xxxu)

Mail

Jes Sorensen <Jes.Sorensen@gmail.com>

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

Files

drivers/net/wireless/realtek/rtl8xxxu/

RTRS TRANSPORT DRIVERS

Mail

Md. Haris Iqbal <haris.iqbal@ionos.com>, Jack Wang <jinpu.wang@ionos.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Maintained

Files

drivers/infiniband/ulp/rtrs/

RUNTIME VERIFICATION (RV)

Mail

Daniel Bristot de Oliveira <bristot@kernel.org>, Steven Rostedt <rostedt@goodmis.org>

Mailing list

linux-trace-kernel@vger.kernel.org

Status

Maintained

Files

Documentation/trace/rv/ include/linux/rv.h include/rv/ kernel/trace/rv/ tools/verification/

RUST

Mail

Miguel Ojeda <ojeda@kernel.org>, Alex Gaynor <alex.gaynor@gmail.com>, Wedson Almeida Filho <wedsonaf@gmail.com>

Reviewer

Boqun Feng <boqun.feng@gmail.com>, Gary Guo <gary@garyguo.net>, Björn Roy Baron <bjorn3_gh@protonmail.com>, Benno Lossin <benno.lossin@proton.me>, Andreas Hindborg <a.hindborg@samsung.com>, Alice Ryhl <aliceryhl@google.com>

Mailing list

rust-for-linux@vger.kernel.org

Status

Supported

Web-page

<https://rust-for-linux.com>

bugs

<https://github.com/Rust-for-Linux/linux/issues>

chat

<zulip://rust-for-linux.zulipchat.com>

P

<https://rust-for-linux.com/contributing>

SCM

git <https://github.com/Rust-for-Linux/linux.git> rust-next

Files

Documentation/rust/ rust/ samples/rust/ scripts/*rust*

Content regex

`\b(?i:rust)\b`

RXRPC SOCKETS (AF_RXRPC)

Mail

David Howells <dhowells@redhat.com>, Marc Dionne
<marc.dionne@auristor.com>

Mailing list

linux-afs@lists.infradead.org

Status

Supported

Web-page

<https://www.infradead.org/~dhowells/kafs/>

Files

networking/rxrpc include/keys/rxrpc-type.h include/net/af_rxrpc.h
include/trace/events/rxrpc.h include/uapi/linux/rxrpc.h net/rxrpc/

S3 SAVAGE FRAMEBUFFER DRIVER

Mail

Antonino Daplas <adaplas@gmail.com>

Mailing list

linux-fbdev@vger.kernel.org

Status

Maintained

Files

drivers/video/fbdev/savage/

S390 ARCHITECTURE

Mail

Heiko Carstens <hca@linux.ibm.com>, Vasily Gorbik <gor@linux.ibm.com>, Alexander Gordeev <agordeev@linux.ibm.com>

Reviewer

Christian Borntraeger <borntraeger@linux.ibm.com>, Sven Schnelle <svens@linux.ibm.com>

Mailing list

linux-s390@vger.kernel.org

Status

Supported

SCM

`git git://git.kernel.org/pub/scm/linux/kernel/git/s390/linux.git`

Files

`driver-api/s390-drivers Documentation/arch/s390/ arch/s390/ drivers/s390/ drivers/watchdog/diag288_wdt.c`

S390 COMMON I/O LAYER

Mail

Vineeth Vijayan <vneethv@linux.ibm.com>, Peter Oberparleiter <oberpar@linux.ibm.com>

Mailing list

linux-s390@vger.kernel.org

Status

Supported

Files

`drivers/s390/cio/`

S390 DASD DRIVER

Mail

Stefan Haberland <sth@linux.ibm.com>, Jan Hoeppner <hoeppner@linux.ibm.com>

Mailing list

linux-s390@vger.kernel.org

Status

Supported

Files

`block/partitions/ibm.c drivers/s390/block/dasd* include/linux/dasd_mod.h`

S390 IOMMU (PCI)

Mail

Niklas Schnelle <schnelle@linux.ibm.com>, Matthew Rosato
<mjrosato@linux.ibm.com>

Reviewer

Gerald Schaefer <gerald.schaefer@linux.ibm.com>

Mailing list

linux-s390@vger.kernel.org

Status

Supported

Files

drivers/iommu/s390-iommu.c

S390 IUCV NETWORK LAYER

Mail

Alexandra Winter <wintera@linux.ibm.com>, Thorsten Winkler <twinkler@linux.ibm.com>

Mailing list

linux-s390@vger.kernel.org, netdev@vger.kernel.org

Status

Supported

Files

drivers/s390/net/*iucv* include/net/iucv/ net/iucv/

S390 MM

Mail

Alexander Gordeev <agordeev@linux.ibm.com>, Gerald Schaefer <gerald.schaefer@linux.ibm.com>

Mailing list

linux-s390@vger.kernel.org

Status

Supported

SCM

`git git://git.kernel.org/pub/scm/linux/kernel/git/s390/linux.git`

Files

arch/s390/include/asm/pgtable.h arch/s390/mm

S390 NETWORK DRIVERS

Mail

Alexandra Winter <wintera@linux.ibm.com>, Thorsten Winkler <[twin-
kler@linux.ibm.com](mailto:twin-
kler@linux.ibm.com)>

Mailing list

linux-s390@vger.kernel.org, netdev@vger.kernel.org

Status

Supported

Files

drivers/s390/net/

S390 PCI SUBSYSTEM

Mail

Niklas Schnelle <schnelle@linux.ibm.com>, Gerald Schaefer <[ald.schaefer@linux.ibm.com](mailto:ger-
ald.schaefer@linux.ibm.com)>

Mailing list

linux-s390@vger.kernel.org

Status

Supported

Files

arch/s390/pci arch/s390/pci/ drivers/pci/hotplug/s390_pci_hpc.c

S390 SCM DRIVER

Mail

Vineeth Vijayan <vneethv@linux.ibm.com>

Mailing list

linux-s390@vger.kernel.org

Status

Supported

Files

drivers/s390/block/scm* drivers/s390/cio/scm.c

S390 VFIO AP DRIVER

Mail

Tony Krowiak <akrowiak@linux.ibm.com>, Halil Pasic <pasic@linux.ibm.com>, Jason Herne <jjherne@linux.ibm.com>

Mailing list

linux-s390@vger.kernel.org

Status

Supported

Files

Documentation/arch/s390/vfio-ap* drivers/s390/crypto/vfio_ap*

S390 VFIO-CCW DRIVER**Mail**

Eric Farman <farman@linux.ibm.com>, Matthew Rosato
<mjrosato@linux.ibm.com>

Reviewer

Halil Pasic <pasic@linux.ibm.com>

Mailing list

linux-s390@vger.kernel.org, kvm@vger.kernel.org

Status

Supported

Files

arch/s390/vfio-ccw drivers/s390/cio/vfio_ccw* include/uapi/linux/
vfio_ccw.h

S390 VFIO-PCI DRIVER**Mail**

Matthew Rosato <mjrosato@linux.ibm.com>, Eric Farman <far-
man@linux.ibm.com>

Mailing list

linux-s390@vger.kernel.org, kvm@vger.kernel.org

Status

Supported

Files

arch/s390/kvm/pci* drivers/vfio/pci/vfio_pci_zdev.c include/uapi/
linux/vfio_zdev.h

S390 ZCRYPT DRIVER**Mail**

Harald Freudenberger <freude@linux.ibm.com>

Mailing list

linux-s390@vger.kernel.org

Status

Supported

Files

drivers/s390/crypto/

S390 ZFCP DRIVER

Mail

Steffen Maier <maier@linux.ibm.com>, Benjamin Block
<bblock@linux.ibm.com>

Mailing list

linux-s390@vger.kernel.org

Status

Supported

Files

drivers/s390/scsi/zfcp_*

SAA6588 RDS RECEIVER DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Odd Fixes

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/i2c/saa6588*

SAA7134 VIDEO4LINUX DRIVER

Mail

Mauro Carvalho Chehab <mchehab@kernel.org>

Mailing list

linux-media@vger.kernel.org

Status

Odd fixes

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/driver-api/media/drivers/saa7134* drivers/media/pci/
saa7134/

SAA7146 VIDEO4LINUX-2 DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/common/saa7146/ drivers/media/pci/saa7146/ include/
media/drv-intf/saa7146*

SAFESETID SECURITY MODULE

Mail

Micah Morton <mortonm@chromium.org>

Status

Supported

Files

admin-guide/LSM/SafeSetID security/safesetid/

SAMSUNG AUDIO (ASoC) DRIVERS

Mail

Sylwester Nawrocki <s.nawrocki@samsung.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

bugs

<mailto:linux-samsung-soc@vger.kernel.org>

Files

Documentation/devicetree/bindings/sound/samsung* sound/soc/samsung/

SAMSUNG EXYNOS PSEUDO RANDOM NUMBER GENERATOR (RNG) DRIVER

Mail

Krzysztof Kozlowski <krzysztof.kozlowski@linaro.org>

Mailing list

linux-crypto@vger.kernel.org, linux-samsung-soc@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/rng/samsung,exynos4-rng.yaml
drivers/crypto/exynos-rng.c

SAMSUNG EXYNOS TRUE RANDOM NUMBER GENERATOR (TRNG) DRIVER

Mail

Łukasz Stelmach <l.stelmach@samsung.com>

Mailing list

linux-samsung-soc@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/rng/samsung,exynos5250-trng.yaml
drivers/char/hw_random/exynos-trng.c

SAMSUNG FRAMEBUFFER DRIVER

Mail

Jingoo Han <jingooohan1@gmail.com>

Mailing list

linux-fbdev@vger.kernel.org

Status

Maintained

Files

drivers/video/fbdev/s3c-fb.c

SAMSUNG INTERCONNECT DRIVERS

Mail

Sylwester Nawrocki <s.nawrocki@samsung.com>, Artur Świgoń
<a.swigon@samsung.com>

Mailing list

linux-pm@vger.kernel.org, linux-samsung-soc@vger.kernel.org

Status

Supported

Files

drivers/interconnect/samsung/

SAMSUNG LAPTOP DRIVER**Mail**

Corentin Chary <corentin.chary@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/samsung-laptop.c

SAMSUNG MULTIFUNCTION PMIC DEVICE DRIVERS**Mail**

Krzysztof Kozlowski <krzysztof.kozlowski@linaro.org>

Mailing list

linux-kernel@vger.kernel.org, linux-samsung-soc@vger.kernel.org

Status

Maintained

bugs

<mailto:linux-samsung-soc@vger.kernel.org>

Files

Documentation/devicetree/bindings/clock/samsung,s2mps11.
yaml Documentation/devicetree/bindings/mfd/samsung,s2m*.
yaml Documentation/devicetree/bindings/mfd/samsung,s5m*.yaml
Documentation/devicetree/bindings/regulator/samsung,s2m*.yaml
Documentation/devicetree/bindings/regulator/samsung,s5m*.yaml
drivers/clk/clk-s2mps11.c drivers/mfd/sec*.c drivers/regulator/s2m*.
c drivers/regulator/s5m*.c drivers/rtc/rtc-s5m.c include/linux/mfd/
samsung/

SAMSUNG S3C24XX/S3C64XX SOC SERIES CAMIF DRIVER**Mail**

Sylwester Nawrocki <sylvester.nawrocki@gmail.com>

Mailing list

linux-media@vger.kernel.org, linux-samsung-soc@vger.kernel.org

Status

Maintained

Files

drivers/media/platform/samsung/s3c-camif/ include/media/drv-intf/
s3c_camif.h

SAMSUNG S3FWRN5 NFC DRIVER

Mail

Krzysztof Kozlowski <krzysztof.kozlowski@linaro.org>

Status

Maintained

Files

Documentation/devicetree/bindings/net/nfc/samsung,s3fwrn5.yaml
drivers/nfc/s3fwrn5

SAMSUNG S5C73M3 CAMERA DRIVER

Mail

Sylwester Nawrocki <s.nawrocki@samsung.com>, Andrzej Hajda <andrzej.hajda@intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/media/samsung,s5c73m3.yaml
drivers/media/i2c/s5c73m3/*

SAMSUNG S5K5BAF CAMERA DRIVER

Mail

Sylwester Nawrocki <s.nawrocki@samsung.com>, Andrzej Hajda <andrzej.hajda@intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Files

drivers/media/i2c/s5k5baf.c

SAMSUNG S5P Security SubSystem (SSS) DRIVER

Mail

Krzysztof Kozlowski <krzysztof.kozlowski@linaro.org>, Vladimir Zapolskiy <vz@mleia.com>

Mailing list

linux-crypto@vger.kernel.org, linux-samsung-soc@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/crypto/samsung-slimsss.yaml
Documentation/devicetree/bindings/crypto/samsung-sss.yaml drivers/
crypto/s5p-sss.c

SAMSUNG S5P/EXYNOS4 SOC SERIES CAMERA SUBSYSTEM DRIVERS

Mail

Sylwester Nawrocki <s.nawrocki@samsung.com>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Patchwork

<https://patchwork.linuxtv.org/project/linux-media/list/>

Files

Documentation/devicetree/bindings/media/samsung,exynos4210-csis.
yaml Documentation/devicetree/bindings/media/samsung,
exynos4210-fimc.yaml Documentation/devicetree/bindings/
samsung,exynos4212-fimc-is.yaml Documentation/devicetree/bindings/
media/samsung,exynos4212-fimc-lite.yaml Documentation/devicetree/
bindings/media/samsung,fimc.yaml drivers/media/platform/samsung/
exynos4-is/

SAMSUNG SOC CLOCK DRIVERS

Mail

Krzysztof Kozlowski <krzysztof.kozlowski@linaro.org>, Sylwester Nawrocki <s.nawrocki@samsung.com>, Tomasz Figa <tomasz.figa@gmail.com>, Chan-woo Choi <cw00.choi@samsung.com>

Reviewer

Alim Akhtar <alim.akhtar@samsung.com>

Mailing list

linux-samsung-soc@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/krzk/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/krzk/linux.git)

Files

Documentation/devicetree/bindings/clock/samsung,*.yaml
Documentation/devicetree/bindings/clock/samsung,s3c* drivers/clock/
samsung/ include/dt-bindings/clock/exynos*.h include/dt-bindings/
clock/s5p*.h include/dt-bindings/clock/samsung,*.h include/linux/
clk/samsung.h

SAMSUNG SPI DRIVERS

Mail

Andi Shyti <andi.shyti@kernel.org>

Mailing list

linux-spi@vger.kernel.org, linux-samsung-soc@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/spi/samsung,spi*.yaml drivers/spi/
spi-s3c* include/linux/platform_data/spi-s3c64xx.h

SAMSUNG SXGBE DRIVERS

Mail

Byungho An <bh74.an@samsung.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/ethernet/samsung/sxgbe/

SAMSUNG THERMAL DRIVER

Mail

Bartlomiej Zolnierkiewicz <bzolnier@gmail.com>, Krzysztof Kozlowski
<krzysztof.kozlowski@linaro.org>

Mailing list

linux-pm@vger.kernel.org, linux-samsung-soc@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/thermal/samsung,exynos-thermal.
yaml drivers/thermal/samsung/

SAMSUNG USB2 PHY DRIVER

Mail

Sylwester Nawrocki <s.nawrocki@samsung.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/phy/samsung,usb2-phy.yaml driver-
api/phy/samsung-usb2 drivers/phy/samsung/phy-exynos4210-usb2.c
drivers/phy/samsung/phy-exynos4x12-usb2.c drivers/phy/samsung/
phy-exynos5250-usb2.c drivers/phy/samsung/phy-s5pv210-usb2.c drivers/
phy/samsung/phy-samsung-usb2.c drivers/phy/samsung/phy-samsung-usb2.
h

SANCLOUD BEAGLEBONE ENHANCED DEVICE TREE

Mail

Paul Barker <paul.barker@sancloud.com>

Reviewer

Marc Murphy <marc.murphy@sancloud.com>

Status

Supported

Files

arch/arm/boot/dts/ti/omap/am335x-sancloud*

SC1200 WDT DRIVER

Mail

Zwane Mwaikambo <zwanem@gmail.com>

Status

Maintained

Files

drivers/watchdog/sc1200wdt.c

SCHEDULER

Mail

Ingo Molnar <mingo@redhat.com>, Peter Zijlstra <peterz@infradead.org>, Juri Lelli <juri.elli@redhat.com> (SCHED_DEADLINE), Vincent Guittot <vincent.guittot@linaro.org> (SCHED_NORMAL)

Reviewer

Dietmar Eggemann <dietmar.eggemann@arm.com> (SCHED_NORMAL), Steven Rostedt <rostedt@goodmis.org> (SCHED_FIFO/SCHED_RR), Ben Segall <bsegall@google.com> (CONFIG_CFS_BANDWIDTH), Mel Gorman <mgorman@suse.de> (CONFIG_NUMA_BALANCING), Daniel Bristot de Oliveira <bristot@redhat.com> (SCHED_DEADLINE), Valentin Schneider <vschneid@redhat.com> (TOPOLOGY)

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

SCM

git git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git sched/core

Files

include/linux/preempt.h include/linux/sched.h include/linux/wait.h
include/uapi/linux/sched.h kernel/sched/

SCSI LIBSAS SUBSYSTEM

Reviewer

John Garry <john.g.garry@oracle.com>, Jason Yan <yanaijie@huawei.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Files

scsi/libsas drivers/scsi/libsas/ include/scsi/libsas.h include/scsi/
sas_ata.h

SCSI RDMA PROTOCOL (SRP) INITIATOR

Mail

Bart Van Assche <bvanassche@acm.org>

Mailing list

linux-rdma@vger.kernel.org

Status

Supported

Patchwork

<http://patchwork.kernel.org/project/linux-rdma/list/>

Files

drivers/infiniband/ulp/srp/ include/scsi/srp.h

SCSI RDMA PROTOCOL (SRP) TARGET**Mail**

Bart Van Assche <bvanassche@acm.org>

Mailing list

linux-rdma@vger.kernel.org, target-devel@vger.kernel.org

Status

Supported

Patchwork

<http://patchwork.kernel.org/project/linux-rdma/list/>

Files

drivers/infiniband/ulp/srpt/

SCSI SG DRIVER**Mail**

Doug Gilbert <dgilbert@interlog.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Maintained

Web-page

<http://sg.danny.cz/sg>

Files

scsi/scsi-generic drivers/scsi/sg.c include/scsi/sg.h

SCSI SUBSYSTEM**Mail**

"James E.J. Bottomley" <jejb@linux.ibm.com>, "Martin K. Petersen" <martin.petersen@oracle.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Maintained

Patchwork

<https://patchwork.kernel.org/project/linux-scsi/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/jejb/scsi.git](https://git.kernel.org/pub/scm/linux/kernel/git/jejb/scsi.git) git
[git://git.kernel.org/pub/scm/linux/kernel/git/mkp/scsi.git](https://git.kernel.org/pub/scm/linux/kernel/git/mkp/scsi.git)

Files

Documentation/devicetree/bindings/scsi/ drivers/scsi/ drivers/ufs/
include/scsi/

SCSI TAPE DRIVER

Mail

Kai Mäkisara <Kai.Makisara@kolumbus.fi>

Mailing list

linux-scsi@vger.kernel.org

Status

Maintained

Files

scsi/st drivers/scsi/st.* drivers/scsi/st_*.h

SCSI TARGET CORE USER DRIVER

Mail

Bodo Stroesser <bostroesser@gmail.com>

Mailing list

linux-scsi@vger.kernel.org, target-devel@vger.kernel.org

Status

Supported

Files

target/tcmu-design drivers/target/target_core_user.c include/uapi/
linux/target_core_user.h

SCSI TARGET SUBSYSTEM

Mail

"Martin K. Petersen" <martin.petersen@oracle.com>

Mailing list

linux-scsi@vger.kernel.org, target-devel@vger.kernel.org

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/target-devel/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/mkp/scsi.git](https://git.kernel.org/pub/scm/linux/kernel/git/mkp/scsi.git)

Files

Documentation/target/ drivers/target/ include/target/

SCTP PROTOCOL**Mail**

Marcelo Ricardo Leitner <marcelo.leitner@gmail.com>, Xin Long <lu-cien.xin@gmail.com>

Mailing list

linux-sctp@vger.kernel.org

Status

Maintained

Web-page

<https://github.com/sctp/lksctp-tools/wiki>

Files

networking/sctp include/linux/sctp.h include/net/sctp/ include/uapi/
linux/sctp.h net/sctp/

SCx200 CPU SUPPORT**Mail**

Jim Cromie <jim.cromie@gmail.com>

Status

Odd Fixes

Files

i2c/busses/scx200_acb arch/x86/platform/scx200/ drivers/i2c/busses/
scx200* drivers/mtd/maps/scx200_docflash.c drivers/watchdog/
scx200_wdt.c include/linux/scx200.h

SCx200 GPIO DRIVER**Mail**

Jim Cromie <jim.cromie@gmail.com>

Status

Maintained

Files

drivers/char/scx200_gpio.c include/linux/scx200_gpio.h

SCx200 HRT CLOCKSOURCE DRIVER

Mail

Jim Cromie <jim.cromie@gmail.com>

Status

Maintained

Files

drivers/clocksource/scx200_hrt.c

SDRICOH_CS MMC/SD HOST CONTROLLER INTERFACE DRIVER

Mail

Sascha Sommer <saschasommer@freenet.de>

Mailing list

sdricohcs-devel@lists.sourceforge.net (subscribers-only)

Status

Maintained

Files

drivers/mmc/host/sdricoh_cs.c

SECO BOARDS CEC DRIVER

Mail

Ettore Chimenti <ek5.chimenti@gmail.com>

Status

Maintained

Files

drivers/media/cec/platform/seco/seco-cec.c drivers/media/cec/
platform/seco/seco-cec.h

SECURE COMPUTING

Mail

Kees Cook <keescook@chromium.org>

Reviewer

Andy Lutomirski <luto@amacapital.net>, Will Drewry <wad@chromium.org>

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/kees/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/kees/linux.git) for-next/seccomp

Files

userspace-api/seccomp_filter include/linux/seccomp.h include/uapi/linux/
seccomp.h kernel/seccomp.c tools/testing/selftests/kselftest_harness.
h tools/testing/selftests/seccomp/*

Content regex

\bsecure_computing\bTIF_SECCOMP\b

SECURE DIGITAL HOST CONTROLLER INTERFACE (SDHCI) Broadcom BRCMSTB DRIVER**Mail**

Kamal Dasu <kamal.dasu@broadcom.com>, Al Cooper <alcooperx@gmail.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-mmc@vger.kernel.org

Status

Maintained

Files

drivers/mmc/host/sdhci-brcmstb*

SECURE DIGITAL HOST CONTROLLER INTERFACE (SDHCI) DRIVER**Mail**

Adrian Hunter <adrian.hunter@intel.com>

Mailing list

linux-mmc@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/mmc/sdhci-common.yaml drivers/mmc/host/sdhci*

SECURE DIGITAL HOST CONTROLLER INTERFACE (SDHCI) MICROCHIP DRIVER**Mail**

Aubin Constans <aubin.constans@microchip.com>

Reviewer

Eugen Hristev <eugen.hristev@collabora.com>

Mailing list

linux-mmc@vger.kernel.org

Status

Supported

Files

drivers/mmc/host/sdhci-of-at91.c

SECURE DIGITAL HOST CONTROLLER INTERFACE (SDHCI) NXP i.MX DRIVER

Mail

Haibo Chen <haibo.chen@nxp.com>

Mailing list

imx@lists.linux.dev, linux-mmc@vger.kernel.org

Status

Maintained

Files

`drivers/mmc/host/sdhci-esdhc-imx.c`

SECURE DIGITAL HOST CONTROLLER INTERFACE (SDHCI) SAMSUNG DRIVER

Mail

Ben Dooks <ben-linux@fluff.org>, Jaehoon Chung <jh80.chung@samsung.com>

Mailing list

linux-mmc@vger.kernel.org

Status

Maintained

Files

`drivers/mmc/host/sdhci-s3c*`

SECURE DIGITAL HOST CONTROLLER INTERFACE (SDHCI) ST SPEAR DRIVER

Mail

Viresh Kumar <vireshk@kernel.org>

Mailing list

linux-mmc@vger.kernel.org

Status

Maintained

Files

`drivers/mmc/host/sdhci-spear.c`

SECURE DIGITAL HOST CONTROLLER INTERFACE (SDHCI) TI OMAP DRIVER

Mail

Vignesh Raghavendra <vigneshr@ti.com>

Mailing list

linux-mmc@vger.kernel.org

Status

Maintained

Files

`drivers/mmc/host/sdhci-omap.c`

SECURE ENCRYPTING DEVICE (SED) OPAL DRIVER

Mail

Jonathan Derrick <jonathan.derrick@linux.dev>

Mailing list

linux-block@vger.kernel.org

Status

Supported

Files

block/opal_proto.h block/sed* include/linux/sed* include/uapi/linux/sed*

SECURE MONITOR CALL(SMC) CALLING CONVENTION (SMCCC)

Mail

Mark Rutland <mark.rutland@arm.com>, Lorenzo Pieralisi <lpieralisi@kernel.org>, Sudeep Holla <sudeep.holla@arm.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

drivers/firmware/smccc/ include/linux/arm-smccc.h

SECURITY CONTACT

Mail

Security Officers <security@kernel.org>

Status

Supported

Files

[process/security-bugs](#)

SECURITY SUBSYSTEM

Mail

Paul Moore <paul@paul-moore.com>, James Morris <jmorris@namei.org>, "Serge E. Hallyn" <serge@hallyn.com>

Mailing list

linux-security-module@vger.kernel.org

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/linux-security-module/list>

bugs

<mailto:linux-security-module@vger.kernel.org>

P

<https://github.com/LinuxSecurityModule/kernel/blob/main/README.md>

SCM

git <https://git.kernel.org/pub/scm/linux/kernel/git/pcmoore/lsm.git>

Files

include/uapi/linux/lsm.h security/ tools/testing/selftests/lsm/

Excluded

security/selinux/

Content regex

\bsecurity_[a-z_0-9]\+\b

SELINUX SECURITY MODULE

Mail

Paul Moore <paul@paul-moore.com>, Stephen Smalley
<stephen.smalley.work@gmail.com>

Reviewer

Ondrej Mosnacek <omosnace@redhat.com>

Mailing list

selinux@vger.kernel.org

Status

Supported

Web-page

<https://github.com/SELinuxProject>

Patchwork

<https://patchwork.kernel.org/project/selinux/list>

bugs

<mailto:selinux@vger.kernel.org>

P

<https://github.com/SELinuxProject/selinux-kernel/blob/main/README.md>

SCM

git <https://git.kernel.org/pub/scm/linux/kernel/git/pcmoore/selinux.git>

Files

Documentation/ABI/removed/sysfs-selinux-checkreqprot Documentation/
ABI/removed/sysfs-selinux-disable admin-guide/LSM/SELinux include/
trace/events/avc.h include/uapi/linux/selinux_netlink.h scripts/
selinux/ security/selinux/

SENSABLE PHANTOM

Mail

Jiri Slaby <jirislaby@kernel.org>

Status

Maintained

Files

drivers/misc/phantom.c include/uapi/linux/phantom.h

SENSEAIR SUNRISE 006-0-0007

Mail

Jacopo Mondì <jacopo@jmondi.org>

Status

Maintained

Files

Documentation/ABI/testing/sysfs-bus-iio-chemical-sunrise-co2
Documentation/devicetree/bindings/iio/chemical/senseair,sunrise.
yaml drivers/iio/chemical/sunrise_co2.c

SENSIRION SCD30 CARBON DIOXIDE SENSOR DRIVER

Mail

Tomasz Duszynski <tomasz.duszynski@octakon.com>

Status

Maintained

Files

Documentation/devicetree/bindings/iio/chemical/sensirion,scd30.
yaml drivers/iio/chemical/scd30.h drivers/iio/chemical/scd30_core.c
drivers/iio/chemical/scd30_i2c.c drivers/iio/chemical/scd30_serial.c

SENSIRION SCD4X CARBON DIOXIDE SENSOR DRIVER

Mail

Roan van Dijk <roan@protonic.nl>

Status

Maintained

Files

Documentation/devicetree/bindings/iio/chemical/sensirion,scd4x.yaml
drivers/iio/chemical/scd4x.c

SENSIRION SGP40 GAS SENSOR DRIVER

Mail

Andreas Klinger <ak@it-klinger.de>

Status

Maintained

Files

Documentation/ABI/testing/sysfs-bus-iio-chemical-sgp40 drivers/iio/chemical/sgp40.c

SENSIRION SPS30 AIR POLLUTION SENSOR DRIVER

Mail

Tomasz Duszynski <tduszyns@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/iio/chemical/sensirion,sps30.yaml drivers/iio/chemical/sps30.c drivers/iio/chemical/sps30_i2c.c drivers/iio/chemical/sps30_serial.c

SERIAL DEVICE BUS

Mail

Rob Herring <robh@kernel.org>

Mailing list

linux-serial@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/serial/serial.yaml drivers/tty/serdev/ include/linux/serdev.h

SERIAL IR RECEIVER

Mail

Sean Young <sean@mess.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/rc/serial_ir.c

SERIAL LOW-POWER INTER-CHIP MEDIA BUS (SLIMbus)

Mail

Srinivas Kandagatla <srinivas.kandagatla@linaro.org>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/slimbus/ drivers/slimbus/ include/
linux/slimbus.h

SFC NETWORK DRIVER

Mail

Edward Cree <ecree.xilinx@gmail.com>, Martin Habets <habetsm.xilinx@gmail.com>

Mailing list

netdev@vger.kernel.org, linux-net-drivers@amd.com

Status

Supported

Files

networking/devlink/sfc drivers/net/ethernet/sfc/

SFCTEMP HWMON DRIVER

Mail

Emil Renner Berthing <kernel@esmil.dk>, Hal Feng
<hal.feng@starfivetech.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/hwmon/starfive,jh71x0-temp.yaml
hwmon/sfctemp drivers/hwmon/sfctemp.c

SFF/SFP/SFP+ MODULE SUPPORT

Mail

Russell King <linux@armlinux.org.uk>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/sff,sfp.yaml drivers/net/
phy/phylink.c drivers/net/phy/sfp* include/linux/mdio/mdio-i2c.h
include/linux/phylink.h include/linux/sfp.h

Content regex

phylink\.h|struct\s+phylink|\.phylink|>phylink_|phylink_(autoneg|clear|connect)

SGI GRU DRIVER

Mail

Dimitri Sivanich <dimitri.sivanich@hpe.com>

Status

Maintained

Files

drivers/misc/sgi-gru/

SGI XP/XPC/XPNET DRIVER

Mail

Robin Holt <robinmholt@gmail.com>, Steve Wahl <steve.wahl@hpe.com>

Status

Maintained

Files

drivers/misc/sgi-xp/

SHARED MEMORY COMMUNICATIONS (SMC) SOCKETS

Mail

Wenjia Zhang <wenjia@linux.ibm.com>, Jan Karcher <jaka@linux.ibm.com>

Reviewer

D. Wythe <alibuda@linux.alibaba.com>, Tony Lu <tonylu@linux.alibaba.com>,
Wen Gu <guwen@linux.alibaba.com>

Mailing list

linux-s390@vger.kernel.org

Status

Supported

Files

net/smc/

SHARP GP2AP002A00F/GP2AP002S00F SENSOR DRIVER**Mail**

Linus Walleij <linus.walleij@linaro.org>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/jic23/iio.git](https://git.kernel.org/pub/scm/linux/kernel/git/jic23/iio.git)

Files

Documentation/devicetree/bindings/iio/light/sharp,gp2ap002.yaml
drivers/iio/light/gp2ap002.c

SHARP RJ54N1CB0C SENSOR DRIVER**Mail**

Jacopo Mondi <jacopo@jmondi.org>

Mailing list

linux-media@vger.kernel.org

Status

Odd fixes

SCM

git [git://linxrtv.org/media_tree.git](https://linxrtv.org/media_tree.git)

Files

drivers/media/i2c/rj54n1cb0c.c include/media/i2c/rj54n1cb0c.h

SHRINKER**Mail**

Andrew Morton <akpm@linux-foundation.org>, Dave Chinner
<david@fromorbit.com>

Reviewer

Qi Zheng <zhengqi.arch@bytedance.com>, Roman Gushchin <roman.gushchin@linux.dev>, Muchun Song <muchun.song@linux.dev>

Mailing list

linux-mm@kvack.org

Status

Maintained

Files

admin-guide/mm/shrinker_debugfs include/linux/shrinker.h mm/shrinker.c
mm/shrinker_debug.c

SH_VOU V4L2 OUTPUT DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Files

drivers/media/platform/renesas/sh_vou.c include/media/drv-intf/
sh_vou.h

SI2157 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/tuners/si2157*

SI2165 MEDIA DRIVER

Mail

Matthias Schwarzott <zzam@gentoo.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/dvb-frontends/si2165*

SI2168 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/dvb-frontends/si2168*

SI470X FM RADIO RECEIVER I2C DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Odd Fixes

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/silabs,si470x.yaml drivers/
media/radio/si470x/radio-si470x-i2c.c

SI470X FM RADIO RECEIVER USB DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/radio/si470x/radio-si470x-common.c drivers/media/
radio/si470x/radio-si470x-usb.c drivers/media/radio/si470x/
radio-si470x.h

SI4713 FM RADIO TRANSMITTER I2C DRIVER**Mail**

Eduardo Valentin <edubezval@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Odd Fixes

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/radio/si4713/si4713.?

SI4713 FM RADIO TRANSMITTER PLATFORM DRIVER**Mail**

Eduardo Valentin <edubezval@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Odd Fixes

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/radio/si4713/radio-platform-si4713.c

SI4713 FM RADIO TRANSMITTER USB DRIVER**Mail**

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git git://linuxtv.org/media_tree.git

Files

drivers/media/radio/si4713/radio-usb-si4713.c

SIANO DVB DRIVER**Mail**

Mauro Carvalho Chehab <mchehab@kernel.org>

Mailing list

linux-media@vger.kernel.org

Status

Odd fixes

Web-page

<https://linuxtv.org>

SCM

git git://linuxtv.org/media_tree.git

Files

drivers/media/common/siano/ drivers/media/mmc/siano/ drivers/media/
usb/siano/ drivers/media/usb/siano/

SIEMENS IPC LED DRIVERS**Mail**

Gerd Haeussler <gerd.haeussler.ext@siemens.com>, Xing Tong Wu <xing-tong.wu@siemens.com>, Tobias Schaffner <tobias.schaffner@siemens.com>

Mailing list

linux-leds@vger.kernel.org

Status

Maintained

Files

drivers/leds/simple/

SIEMENS IPC PLATFORM DRIVERS**Mail**

Gerd Haeussler <gerd.haeussler.ext@siemens.com>, Xing Tong Wu <xing-tong.wu@siemens.com>, Tobias Schaffner <tobias.schaffner@siemens.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/siemens/ include/linux/platform_data/x86/
simatic-ipc-base.h include/linux/platform_data/x86/simatic-ipc.h

SIEMENS IPC WATCHDOG DRIVERS

Mail

Gerd Haeussler <gerd.haeussler.ext@siemens.com>, Xing Tong Wu <xing-tong.wu@siemens.com>, Tobias Schaffner <tobias.schaffner@siemens.com>

Mailing list

linux-watchdog@vger.kernel.org

Status

Maintained

Files

drivers/watchdog/simatic-ipc-wdt.c

SIFIVE DRIVERS

Mail

Paul Walmsley <paul.walmsley@sifive.com>, Samuel Holland
<samuel.holland@sifive.com>

Mailing list

linux-riscv@lists.infradead.org

Status

Supported

Files

drivers/dma/sf-pdma/

Regex

sifive

Content regex

fu[57]40 [^@]sifive

SILEAD TOUCHSCREEN DRIVER

Mail

Hans de Goede <hdegoede@redhat.com>

Mailing list

linux-input@vger.kernel.org, platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/input/touchscreen/silead.c drivers/platform/x86/
touchscreen_dmi.c

SILICON LABS WIRELESS DRIVERS (for WFxxx series)**Mail**

Jérôme Pouiller <jerome.pouiller@silabs.com>

Status

Supported

Files

Documentation/devicetree/bindings/net/wireless/silabs,wfx.yaml
drivers/net/wireless/silabs/wfx/

SILICON MOTION SM712 FRAME BUFFER DRIVER**Mail**

Sudip Mukherjee <sudipm.mukherjee@gmail.com>, Teddy
Wang <teddy.wang@siliconmotion.com>, Sudip Mukherjee
<sudip.mukherjee@codethink.co.uk>

Mailing list

linux-fbdev@vger.kernel.org

Status

Maintained

Files

fb/sm712fb drivers/video/fbdev/sm712*

SILVACO I3C DUAL-ROLE MASTER**Mail**

Miquel Raynal <miquel.raynal@bootlin.com>, Conor Culhane
<conor.culhane@silvaco.com>

Mailing list

linux-i3c@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/i3c/silvaco,i3c-master.yaml
drivers/i3c/master/svc-i3c-master.c

SIMPLEFB FB DRIVER

Mail

Hans de Goede <hdegoede@redhat.com>

Mailing list

linux-fbdev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/display/simple-framebuffer.yaml
drivers/video/fbdev/simplefb.c include/linux/platform_data/simplefb.h

SIOX

Mail

Thorsten Scherer <t.scherer@eckelmann.de>, Uwe Kleine-König <u.kleine-koenig@pengutronix.de>

Reviewer

Pengutronix Kernel Team <kernel@pengutronix.de>

Status

Supported

Files

drivers/gpio/gpio-siox.c drivers/siox/* include/trace/events/siox.h

SIPHASH PRF ROUTINES

Mail

Jason A. Donenfeld <Jason@zx2c4.com>

Status

Maintained

Files

include/linux/siphash.h lib/siphash.c lib/siphash_kunit.c

SIS 190 ETHERNET DRIVER

Mail

Francois Romieu <romieu@fr.zoreil.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/sis/sis190.c

SIS 900/7016 FAST ETHERNET DRIVER

Mail

Daniele Venzano <venza@brownhat.org>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Web-page

<http://www.brownhat.org/sis900.html>

Files

drivers/net/ethernet/sis/sis900.*

SIS FRAMEBUFFER DRIVER

Status

Orphan

Files

fb/sisfb drivers/video/fbdev/sis/ include/video/sisfb.h

SIS I2C TOUCHSCREEN DRIVER

Mail

Mika Penttilä <mpenttil@redhat.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/input/touchscreen/sis_i2c.txt
drivers/input/touchscreen/sis_i2c.c

SIS USB2VGA DRIVER

Mail

Thomas Winischhofer <thomas@winischhofer.net>

Status

Maintained

Web-page

<http://www.winischhofer.at/linuxsisusbvga.shtml>

Files

drivers/usb/misc/sisusbvga/

SL28 CPLD MFD DRIVER

Mail

Michael Walle <mwalle@kernel.org>

Status

Maintained

Files

Documentation/devicetree/bindings/gpio/kontron,sl28cpld-gpio.yaml
Documentation/devicetree/bindings/hwmon/kontron,sl28cpld-hwmon.yaml
Documentation/devicetree/bindings/interrupt-controller/kontron,
sl28cpld-intc.yaml Documentation/devicetree/bindings/mfd/kontron,
sl28cpld.yaml Documentation/devicetree/bindings/pwm/kontron,
sl28cpld-pwm.yaml Documentation/devicetree/bindings/watchdog/
kontron,sl28cpld-wdt.yaml drivers/gpio/gpio-sl28cpld.c drivers/
hwmon/sl28cpld-hwmon.c drivers/irqchip/irq-sl28cpld.c drivers/pwm/
pwm-sl28cpld.c drivers/watchdog/sl28cpld_wdt.c

SL28 VPD NVMEM LAYOUT DRIVER

Mail

Michael Walle <mwalle@kernel.org>

Status

Maintained

Files

Documentation/devicetree/bindings/nvmem/layouts/kontron,sl28-vpd.
yaml drivers/nvmem/layouts/sl28vpd.c

SLAB ALLOCATOR

Mail

Christoph Lameter <cl@linux.com>, Pekka Enberg <penberg@kernel.org>,
David Rientjes <rientjes@google.com>, Joonsoo Kim <iamjoon-soo.kim@lge.com>,
Andrew Morton <akpm@linux-foundation.org>, Vlastimil
Babka <vbabka@suse.cz>

Reviewer

Roman Gushchin <roman.gushchin@linux.dev>, Hyeonggon Yoo
<42.hyeyoo@gmail.com>

Mailing list

linux-mm@kvack.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/vbabka/slab.git](https://git.kernel.org/pub/scm/linux/kernel/git/vbabka/slab.git)

Files

include/linux/sl?b*.h mm/sl?b*

SLCAN CAN NETWORK DRIVER

Mail

Dario Binacchi <dario.binacchi@amarulasolutions.com>

Mailing list

linux-can@vger.kernel.org

Status

Maintained

Files

drivers/net/can/slcan/

SLEEPABLE READ-COPY UPDATE (SRCU)

Mail

Lai Jiangshan <jiangshanlai@gmail.com>, "Paul E. McKenney" <paulmck@kernel.org>, Josh Triplett <josh@joshtriplett.org>

Reviewer

Steven Rostedt <rostedt@goodmis.org>, Mathieu Desnoyers <mathieu.desnoyers@efficios.com>

Mailing list

rcu@vger.kernel.org

Status

Supported

Web-page

<http://www.rdrop.com/users/paulmck/RCU/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/paulmck/linux-rcu.git](https://git.kernel.org/pub/scm/linux/kernel/git/paulmck/linux-rcu.git) dev

Files

include/linux/srcu*.h kernel/rcu/srcu*.c

SMACK SECURITY MODULE

Mail

Casey Schaufler <casey@schaufler-ca.com>

Mailing list

linux-security-module@vger.kernel.org

Status

Maintained

Web-page

<http://schaufler-ca.com>

SCM

git [git://github.com/cschaufler/smack-next](https://github.com/cschaufler/smack-next)

Files

admin-guide/LSM/Smack security/smack/

SMC91x ETHERNET DRIVER

Mail

Nicolas Pitre <nico@fluxnic.net>

Status

Odd Fixes

Files

drivers/net/ethernet/smc/smc91x.*

SMSC EMC2103 HARDWARE MONITOR DRIVER

Mail

Steve Glendinning <steve.glendinning@shawell.net>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/emc2103 drivers/hwmon/emc2103.c

SMSC SCH5627 HARDWARE MONITOR DRIVER

Mail

Hans de Goede <hdegoede@redhat.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Supported

Files

hwmon/sch5627 drivers/hwmon/sch5627.c

SMSC UFX6000 and UFX7000 USB to VGA DRIVER

Mail

Steve Glendinning <steve.glendinning@shawell.net>

Mailing list

linux-fbdev@vger.kernel.org

Status

Maintained

Files

drivers/video/fbdev/smscufx.c

SMSC47B397 HARDWARE MONITOR DRIVER

Mail

Jean Delvare <jdelvare@suse.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/smsc47b397 drivers/hwmon/smsc47b397.c

SMSC911x ETHERNET DRIVER

Mail

Steve Glendinning <steve.glendinning@shawell.net>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/smsc/smsc911x.* include/linux/smsc911x.h

SMSC9420 PCI ETHERNET DRIVER

Mail

Steve Glendinning <steve.glendinning@shawell.net>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/smsc/smsc9420.*

SNET DPU VIRTIO DATA PATH ACCELERATOR

Reviewer

Alvaro Karsz <alvaro.karsz@solid-run.com>

Files

drivers/vdpa/solidrun/

SOCIONEXT (SNI) AVE NETWORK DRIVER

Mail

Kunihiko Hayashi <hayashi.kunihiko@socionext.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/socionext,uniphier-ave4.yaml
drivers/net/ethernet/socionext/sni_ave.c

SOCIONEXT (SNI) NETSEC NETWORK DRIVER

Mail

Ilias Apalodimas <ilias.apalodimas@linaro.org>, Masahisa Kojima <kojima.masahisa@socionext.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/socionext,synquacer-netsec.
yaml drivers/net/ethernet/socionext/netsec.c

SOCIONEXT (SNI) Synquacer SPI DRIVER

Mail

Masahisa Kojima <masahisa.kojima@linaro.org>, Jassi Brar
<jaswinder.singh@linaro.org>

Mailing list

linux-spi@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/spi/socionext,synquacer-spi.yaml
drivers/spi/spi-synquacer.c

SOCIONEXT SYNQUACER I2C DRIVER

Mail

Ard Biesheuvel <ardb@kernel.org>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/i2c/socionext,synquacer-i2c.yaml
drivers/i2c/busses/i2c-synquacer.c

SOCIONEXT UNIPHIER SOUND DRIVER

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Orphan

Files

sound/soc/uniphier/

SOCKET TIMESTAMPING

Mail

Willem de Bruijn <willemdebruijn.kernel@gmail.com>

Status

Maintained

Files

networking/timestamping include/uapi/linux/net_tstamp.h tools/testing/
selftests/net/so_txttime.c

SOEKRI NET48XX LED SUPPORT

Mail

Chris Boot <bootc@bootc.net>

Status

Maintained

Files

drivers/leds/leds-net48xx.c

SOFT-IWARP DRIVER (siw)

Mail

Bernard Metzler <bmt@zurich.ibm.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Supported

Files

drivers/infiniband/sw/siw/ include/uapi/rdma/siw-abi.h

SOFT-ROCE DRIVER (rxe)

Mail

Zhu Yanjun <zyjzyj2000@gmail.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Supported

Files

drivers/infiniband/sw/rxe/ include/uapi/rdma/rdma_user_rxe.h

SOFTLOGIC 6x10 MPEG CODEC

Mail

Bluecherry Maintainers <maintainers@bluecherrydvr.com>, Anton Sviridenko <anton@corp.bluecherry.net>, Andrey Utkin <andrey_utkin@fastmail.com>, Ismael Luceno <ismael@iodev.co.uk>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Files

drivers/media/pci/solo6x10/

SOFTWARE DELEGATED EXCEPTION INTERFACE (SDEI)

Mail

James Morse <james.morse@arm.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/arm/firmware/sdei.txt drivers/
firmware/arm_sdei.c include/linux/arm_sdei.h include/uapi/linux/
arm_sdei.h

SOFTWARE NODES AND DEVICE PROPERTIES**Reviewer**

Andy Shevchenko <andriy.shevchenko@linux.intel.com>, Daniel Scally
<djrscally@gmail.com>, Heikki Krogerus <heikki.krogerus@linux.intel.com>,
Sakari Ailus <sakari.ailus@linux.intel.com>

Mailing list

linux-acpi@vger.kernel.org

Status

Maintained

Files

drivers/base/property.c drivers/base/swnode.c include/linux/fwnode.h
include/linux/property.h

SOFTWARE RAID (Multiple Disks) SUPPORT**Mail**

Song Liu <song@kernel.org>

Reviewer

Yu Kuai <yukuai3@huawei.com>

Mailing list

linux-raid@vger.kernel.org

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/linux-raid/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/song/md.git](https://git.kernel.org/pub/scm/linux/kernel/git/song/md.git)

Files

drivers/md/Kconfig drivers/md/Makefile drivers/md/md* drivers/md/
raid* include/linux/raid/ include/uapi/linux/raid/

SOLIDRUN CLEARFOG SUPPORT

Mail

Russell King <linux@armlinux.org.uk>

Status

Maintained

Files

arch/arm/boot/dts/marvell/armada-388-clearfog* arch/arm/boot/dts/
marvell/armada-38x-solidrun-*

SOLIDRUN CUBOX-I/HUMMINGBOARD SUPPORT

Mail

Russell King <linux@armlinux.org.uk>

Status

Maintained

Files

arch/arm/boot/dts/nxp/imx/imx6*-cubox-i* arch/arm/boot/dts/nxp/imx/
imx6*-hummingboard* arch/arm/boot/dts/nxp/imx/imx6*-sr-*

SONIC NETWORK DRIVER

Mail

Thomas Bogendoerfer <tsbogend@alpha.franken.de>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/natsemi/sonic.*

SONICS SILICON BACKPLANE DRIVER (SSB)

Mail

Michael Buesch <m@bues.ch>

Mailing list

linux-wireless@vger.kernel.org

Status

Maintained

Files

drivers/ssb/ include/linux/ssb/

SONY IMX208 SENSOR DRIVER

Mail

Sakari Ailus <sakari.ailus@linux.intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/i2c/imx208.c

SONY IMX214 SENSOR DRIVER

Mail

Ricardo Ribalda <ribalda@kernel.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/sony,imx214.yaml
drivers/media/i2c/imx214.c

SONY IMX219 SENSOR DRIVER

Mail

Dave Stevenson <dave.stevenson@raspberrypi.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/imx219.yaml drivers/
media/i2c/imx219.c

SONY IMX258 SENSOR DRIVER

Mail

Sakari Ailus <sakari.ailus@linux.intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/imx258.yaml drivers/
media/i2c/imx258.c

SONY IMX274 SENSOR DRIVER

Mail

Leon Luo <leonl@leopardimaging.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/sony,imx274.yaml
drivers/media/i2c/imx274.c

SONY IMX290 SENSOR DRIVER

Mail

Manivannan Sadhasivam <manivannan.sadhasivam@linaro.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/sony,imx290.yaml
drivers/media/i2c/imx290.c

SONY IMX296 SENSOR DRIVER

Mail

Laurent Pinchart <laurent.pinchart@ideasonboard.com>, Manivannan Sadhasivam <manivannan.sadhasivam@linaro.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/sony,imx296.yaml
drivers/media/i2c/imx296.c

SONY IMX319 SENSOR DRIVER

Mail

Bingbu Cao <bingbu.cao@intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/i2c/imx319.c

SONY IMX334 SENSOR DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/sony,imx334.yaml
drivers/media/i2c/imx334.c

SONY IMX335 SENSOR DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/sony,imx335.yaml
drivers/media/i2c/imx335.c

SONY IMX355 SENSOR DRIVER

Mail

Tianshu Qiu <tian.shu.qiu@intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/i2c/imx355.c

SONY IMX412 SENSOR DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/sony,imx412.yaml
drivers/media/i2c/imx412.c

SONY IMX415 SENSOR DRIVER

Mail

Michael Riesch <michael.riesch@wolfvision.net>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/sony,imx415.yaml
drivers/media/i2c/imx415.c

SONY MEMORYSTICK SUBSYSTEM

Mail

Maxim Levitsky <maximlevitsky@gmail.com>, Alex Dubov
<oakad@yahoo.com>, Ulf Hansson <ulf.hansson@linaro.org>

Mailing list

linux-mmc@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/ulfh/mmc.git](https://git.kernel.org/pub/scm/linux/kernel/git/ulfh/mmc.git)

Files

drivers/memstick/ include/linux/memstick.h

SONY VAIO CONTROL DEVICE DRIVER

Mail

Mattia Dongili <malattia@linux.it>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Web-page

http://www.linux.it/~malattia/wiki/index.php/Sony_drivers

Files

admin-guide/laptops/sony-laptop drivers/char/sonypi.c drivers/platform/
x86/sony-laptop.c include/linux/sony-laptop.h

SOPHGO DEVICETREES

Mail

Chao Wei <chao.wei@sophgo.com>, Chen Wang <unicorn_wang@outlook.com>

Status

Maintained

Files

arch/riscv/boot/dts/sophgo/ Documentation/devicetree/bindings/riscv/
sophgo.yaml

SOUND

Mail

Jaroslav Kysela <perex@perex.cz>, Takashi Iwai <tiwai@suse.com>

Mailing list

linux-sound@vger.kernel.org

Status

Maintained

Web-page

<http://www.alsa-project.org/>

Patchwork

<http://patchwork.kernel.org/project/alsa-devel/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tiwai/sound.git](https://git.kernel.org/pub/scm/linux/kernel/git/tiwai/sound.git)

Files

Documentation/sound/ include/sound/ include/uapi/sound/ sound/ tools/
testing/selftests/alsa

SOUND - ALSA SELFTESTS

Mail

Mark Brown <broonie@kernel.org>

Mailing list

linux-sound@vger.kernel.org, linux-kselftest@vger.kernel.org

Status

Supported

Files

tools/testing/selftests/alsa

SOUND - COMPRESSED AUDIO

Mail

Vinod Koul <vkoul@kernel.org>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tiwai/sound.git](https://git.kernel.org/pub/scm/linux/kernel/git/tiwai/sound.git)

Files

sound/designs/compress-offload include/sound/compress_driver.h include/
uapi/sound/compress_* sound/core/compress_offload.c sound/soc/
soc-compress.c

SOUND - DMAENGINE HELPERS

Mail

Lars-Peter Clausen <lars@metafoo.de>

Status

Supported

Files

include/sound/dmaengine_pcm.h sound/core/pcm_dmaengine.c sound/soc/
soc-generic-dmaengine-pcm.c

SOUND - SOC LAYER / DYNAMIC AUDIO POWER MANAGEMENT (ASoC)

Mail

Liam Girdwood <lgirdwood@gmail.com>, Mark Brown <broonie@kernel.org>

Mailing list

linux-sound@vger.kernel.org

Status

Supported

Web-page

<http://alsa-project.org/main/index.php/ASoC>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/broonie/sound.git](https://git.kernel.org/pub/scm/linux/kernel/git/broonie/sound.git)

Files

Documentation/devicetree/bindings/sound/ Documentation/sound/soc/
include/dt-bindings/sound/ include/sound/soc* include/sound/sof.h
include/sound/sof/ include/trace/events/sof*.h include/uapi/sound/
asoc.h sound/soc/

SOUND - SOUND OPEN FIRMWARE (SOF) DRIVERS

Mail

Pierre-Louis Bossart <pierre-louis.bossart@linux.intel.com>, Liam Girdwood <lgirdwood@gmail.com>, Peter Ujfalusi <peter.ujfalusi@linux.intel.com>, Bard Liao <yung-chuan.liao@linux.intel.com>, Ranjani Sridharan <ranjani.sridharan@linux.intel.com>, Daniel Baluta <daniel.baluta@nxp.com>

Reviewer

Kai Vehmanen <kai.vehmanen@linux.intel.com>

Mailing list

sound-open-firmware@alsa-project.org (moderated for non-subscribers)

Status

Supported

Web-page

<https://github.com/thesofproject/linux/>

Files

sound/soc/sof/

SOUNDWIRE SUBSYSTEM

Mail

Vinod Koul <vkoul@kernel.org>, Bard Liao <yung-chuan.liao@linux.intel.com>

Reviewer

Pierre-Louis Bossart <pierre-louis.bossart@linux.intel.com>, Sanyog Kale <sanyog.r.kale@intel.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/vkoul/soundwire.git](https://git.kernel.org/pub/scm/linux/kernel/git/vkoul/soundwire.git)

Files

Documentation/driver-api/soundwire/ drivers/soundwire/ include/linux/soundwire/

SP2 MEDIA DRIVER

Mail

Olli Salonen <olli.salonen@iki.fi>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/dvb-frontends/sp2*

SPANISH DOCUMENTATION**Mail**

Carlos Bilbao <carlos.bilbao@amd.com>

Reviewer

Avadhut Naik <avadhut.naik@amd.com>

Status

Maintained

Files

Documentation/translations/sp_SP/

SPARC + UltraSPARC (sparc/sparc64)**Mail**

"David S. Miller" <davem@davemloft.net>, Andreas Larsson <andreas@gaisler.com>

Mailing list

sparclinux@vger.kernel.org

Status

Maintained

Patchwork

<http://patchwork.ozlabs.org/project/sparclinux/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/davem/sparc.git](https://git.kernel.org/pub/scm/linux/kernel/git/davem/sparc.git) git
[git://git.kernel.org/pub/scm/linux/kernel/git/davem/sparc-next.git](https://git.kernel.org/pub/scm/linux/kernel/git/davem/sparc-next.git)

Files

arch/sparc/ drivers/sbus/

SPARC SERIAL DRIVERS**Mail**

"David S. Miller" <davem@davemloft.net>

Mailing list

sparclinux@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/davem/sparc.git](https://git.kernel.org/pub/scm/linux/kernel/git/davem/sparc.git) git
git://git.kernel.org/pub/scm/linux/kernel/git/davem/sparc-next.git

Files

drivers/tty/serial/suncore.c drivers/tty/serial/sunhv.c drivers/
tty/serial/sunsab.c drivers/tty/serial/sunsab.h drivers/tty/serial/
sunsu.c drivers/tty/serial/sunzilog.c drivers/tty/serial/sunzilog.h
drivers/tty/vcc.c include/linux/sunserialcore.h

SPARSE CHECKER

Mail

"Luc Van Oostenryck" <luc.vanoostenryck@gmail.com>

Mailing list

linux-sparse@vger.kernel.org

Status

Maintained

Web-page

<https://sparse.docs.kernel.org/>

Patchwork

<https://patchwork.kernel.org/project/linux-sparse/list/>

bugs

https://bugzilla.kernel.org/enter_bug.cgi?component=Sparse&product=Tools

SCM

git [git://git.kernel.org/pub/scm/devel/sparse/sparse.git](https://git.kernel.org/pub/scm/devel/sparse/sparse.git)

Files

include/linux/compiler.h

SPEAKUP CONSOLE SPEECH DRIVER

Mail

William Hubbs <w.d.hubbs@gmail.com>, Chris Brannon <chris@the-brannons.com>, Kirk Reiser <kirk@reisera.ca>, Samuel Thibault
<samuel.thibault@ens-lyon.org>

Mailing list

speakup@linux-speakup.org

Status

Odd Fixes

Web-page

<http://www.linux-speakup.org/> <https://github.com/linux-speakup/speakup>

bugs

<https://github.com/linux-speakup/speakup/issues>

Files

drivers/accessibility/speakup/

SPEAR PLATFORM/CLOCK/PINCTRL SUPPORT

Mail

Viresh Kumar <vireshk@kernel.org>, Shiraz Hashim <shiraz.hashim@kernel.org>, soc@kernel.org, raz.linux.kernel@gmail.com

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Web-page

<http://www.st.com/spear>

Files

arch/arm/boot/dts/st/spear* arch/arm/mach-spear/ drivers/clock/spear/
drivers/pinctrl/spear/

SPI NOR SUBSYSTEM

Mail

Tudor Ambarus <tudor.ambarus@linaro.org>, Pratyush Yadav <pratyush@kernel.org>, Michael Walle <mwalle@kernel.org>

Mailing list

linux-mtd@lists.infradead.org

Status

Maintained

Web-page

<http://www.linux-mtd.infradead.org/>

Patchwork

<http://patchwork.ozlabs.org/project/linux-mtd/list/>

chat

<irc://irc.oftc.net/mtd>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/mtd/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/mtd/linux.git) spi-nor/next

Files

Documentation/devicetree/bindings/mtd/jedec,spi-nor.yaml drivers/
mtd/spi-nor/ include/linux/mtd/spi-nor.h

SPI SUBSYSTEM

Mail

Mark Brown <broonie@kernel.org>

Mailing list

linux-spi@vger.kernel.org

Status

Maintained

Patchwork

<http://patchwork.kernel.org/project/spi-devel-general/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/broonie/spi.git](https://git.kernel.org/pub/scm/linux/kernel/git/broonie/spi.git)

Files

Documentation/devicetree/bindings/spi/ Documentation/spi/ drivers/
spi/ include/linux/spi/ include/uapi/linux/spi/ tools/spi/

SPIDERNET NETWORK DRIVER for CELL

Mail

Ishizaki Kou <kou.ishizaki@toshiba.co.jp>, Geoff Levand <geoff@infradead.org>

Mailing list

netdev@vger.kernel.org, linuxppc-dev@lists.ozlabs.org

Status

Maintained

Files

networking/device_drivers/ethernet/toshiba/spider_net drivers/net/ethernet/
toshiba/spider_net*

SPMI SUBSYSTEM

Mail

Stephen Boyd <sboyd@kernel.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/sboyd/spmi.git](https://git.kernel.org/pub/scm/linux/kernel/git/sboyd/spmi.git)

Files

Documentation/devicetree/bindings/spmi/ drivers/spmi/ include/
dt-bindings/spmi/spmi.h include/linux/spmi.h include/trace/events/
spmi.h

SPU FILE SYSTEM

Mail

Jeremy Kerr <jk@ozlabs.org>

Mailing list

linuxppc-dev@lists.ozlabs.org

Status

Supported

Web-page

<http://www.ibm.com/developerworks/power/cell/>

Files

filesystems/spufs/spufs arch/powerpc/platforms/cell/spufs/

SQUASHFS FILE SYSTEM

Mail

Phillip Lougher <phillip@squashfs.org.uk>

Mailing list

squashfs-devel@lists.sourceforge.net (subscribers-only)

Status

Maintained

Web-page

<http://squashfs.org.uk>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/pkl/squashfs-next.git](https://git.kernel.org/pub/scm/linux/kernel/git/pkl/squashfs-next.git)

Files

filesystems/squashfs fs/squashfs/

SRM (Alpha) environment access

Mail

Jan-Benedict Glaw <jbglaw@lug-owl.de>

Status

Maintained

Files

arch/alpha/kernel/srm_env.c

ST LSM6DSx IMU IIO DRIVER

Mail

Lorenzo Bianconi <lorenzo@kernel.org>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Web-page

<http://www.st.com/>

Files

Documentation/devicetree/bindings/iio/imu/st,lsm6dsx.yaml drivers/
iio/imu/st_lsm6dsx/

ST MIPID02 CSI-2 TO PARALLEL BRIDGE DRIVER

Mail

Benjamin Mugnier <benjamin.mugnier@foss.st.com>, Sylvain Petinot <sylvain.petinot@foss.st.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

[git git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/st,st-mipid02.yaml
drivers/media/i2c/st-mipid02.c

ST STM32 I2C/SMBUS DRIVER

Mail

Pierre-Yves MORDRET <pierre-yves.mordret@foss.st.com>, Alain Volmat
<alain.volmat@foss.st.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Maintained

Files

drivers/i2c/busses/i2c-stm32*

ST STM32 SPI DRIVER

Mail

Alain Volmat <alain.volmat@foss.st.com>

Mailing list

linux-spi@vger.kernel.org

Status

Maintained

Files

drivers/spi/spi-stm32.c

ST STPDDC60 DRIVER

Mail

Daniel Nilsson <daniel.nilsson@flex.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/stpddc60 drivers/hwmon/pmbus/stpddc60.c

ST VGXY61 DRIVER

Mail

Benjamin Mugnier <benjamin.mugnier@foss.st.com>, Sylvain Petinot <sylvain.petinot@foss.st.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/i2c/st,st-vgxy61.yaml
userspace-api/media/drivers/st-vgxy61 drivers/media/i2c/st-vgxy61.c

ST VL53L0X ToF RANGER(I2C) IIO DRIVER

Mail

Song Qiang <songqiang1304521@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/proximity/st,vl53l0x.yaml
drivers/iio/proximity/vl53l0x-i2c.c

STABLE BRANCH

Mail

Greg Kroah-Hartman <gregkh@linuxfoundation.org>, Sasha Levin
<sashal@kernel.org>

Mailing list

stable@vger.kernel.org

Status

Supported

Files

[process/stable-kernel-rules](#)

STAGING - ATOMISP DRIVER

Mail

Hans de Goede <hdegoede@redhat.com>, Mauro Carvalho Chehab
<mchehab@kernel.org>

Reviewer

Sakari Ailus <sakari.ailus@linux.intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/staging/media/atomisp/

STAGING - FIELDBUS SUBSYSTEM

Mail

Sven Van Asbroeck <TheSven73@gmail.com>

Status

Maintained

Files

drivers/staging/fieldbus/* drivers/staging/fieldbus/Documentation/

STAGING - HMS ANYBUS-S BUS

Mail

Sven Van Asbroeck <TheSven73@gmail.com>

Status

Maintained

Files

drivers/staging/fieldbus/anybuss/

STAGING - INDUSTRIAL IO

Mail

Jonathan Cameron <jic23@kernel.org>

Mailing list

linux-iio@vger.kernel.org

Status

Odd Fixes

Files

Documentation/devicetree/bindings/staging/iio/ drivers/staging/iio/

STAGING - NVIDIA COMPLIANT EMBEDDED CONTROLLER INTERFACE (nvec)

Mail

Marc Dietrich <marvin24@gmx.de>

Mailing list

ac100@lists.launchpad.net (moderated for non-subscribers), linux-tegra@vger.kernel.org

Status

Maintained

Files

drivers/staging/nvec/

STAGING - OLPC SECONDARY DISPLAY CONTROLLER (DCON)

Mail

Jens Frederich <jfrederich@gmail.com>, Jon Nettleton
<jon.nettleton@gmail.com>

Status

Maintained

Web-page

<http://wiki.laptop.org/go/DCON>

Files

drivers/staging/olpc_dcon/

STAGING - REALTEK RTL8712U DRIVERS

Mail

Larry Finger <Larry.Finger@lwfinger.net>, Florian Schilhabel <florian.c.schilhabel@googlemail.com>.

Status

Odd Fixes

Files

drivers/staging/rtl8712/

STAGING - SEPS525 LCD CONTROLLER DRIVERS

Mail

Michael Hennerich <michael.hennerich@analog.com>

Mailing list

linux-fbdev@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/iio/ad7606.yaml drivers/
staging/fbtft/fb_seps525.c

STAGING - SILICON MOTION SM750 FRAME BUFFER DRIVER

Mail

Sudip Mukherjee <sudipm.mukherjee@gmail.com>, Teddy Wang
<teddy.wang@siliconmotion.com>, Sudip Mukherjee
<sudip.mukherjee@codethink.co.uk>

Mailing list

linux-fbdev@vger.kernel.org

Status

Maintained

Files

drivers/staging/sm750fb/

STAGING - VIA VT665X DRIVERS

Mail

Forest Bond <forest@alittletooquiet.net>

Status

Odd Fixes

Files

drivers/staging/vt665?/

STAGING SUBSYSTEM

Mail

Greg Kroah-Hartman <gregkh@linuxfoundation.org>

Mailing list

linux-staging@lists.linux.dev

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/gregkh/staging.git](https://git.kernel.org/pub/scm/linux/kernel/git/gregkh/staging.git)

Files

drivers/staging/

STANDALONE CACHE CONTROLLER DRIVERS

Mail

Conor Dooley <conor@kernel.org>

Mailing list

linux-riscv@lists.infradead.org

Status

Maintained

SCM

git <https://git.kernel.org/pub/scm/linux/kernel/git/conor/linux.git>

Files

drivers/cache

STARFIRE/DURALAN NETWORK DRIVER

Mail

Ion Badulescu <ionut@badula.org>

Status

Odd Fixes

Files

drivers/net/ethernet/adaptec/starfire*

STARFIVE CAMERA SUBSYSTEM DRIVER

Mail

Jack Zhu <jack.zhu@starfivetech.com>, Changhuang Liang
<changhuang.liang@starfivetech.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

admin-guide/media/starfive_camss Documentation/devicetree/bindings/
media/starfive,jh7110-camss.yaml drivers/staging/media/starfive/
camss

STARFIVE CRYPTO DRIVER

Mail

Jia Jie Ho <jiajie.ho@starfivetech.com>, William Qiu
<william.qiu@starfivetech.com>

Status

Supported

Files

Documentation/devicetree/bindings/crypto/starfive* drivers/crypto/
starfive/

STARFIVE DEVICETREES

Mail

Emil Renner Berthing <kernel@esmil.dk>

Status

Maintained

Files

arch/riscv/boot/dts/starfive/

STARFIVE DWMAC GLUE LAYER

Mail

Emil Renner Berthing <kernel@esmil.dk>, Samin Guo
<samin.guo@starfivetech.com>

Status

Maintained

Files

Documentation/devicetree/bindings/net/starfive,jh7110-dwmac.yaml
drivers/net/ethernet/stmicro/stmmac/dwmac-starfive.c

STARFIVE JH7110 DPHY RX DRIVER

Mail

Jack Zhu <jack.zhu@starfivetech.com>, Changhuang Liang
<changhuang.liang@starfivetech.com>

Status

Supported

Files

Documentation/devicetree/bindings/phy/starfive,jh7110-dphy-rx.yaml
drivers/phy/starfive/phy-jh7110-dphy-rx.c

STARFIVE JH7110 MMC/SD/SDIO DRIVER

Mail

William Qiu <william.qiu@starfivetech.com>

Status

Supported

Files

Documentation/devicetree/bindings/mmc/starfive* drivers/mmc/host/
dw_mmc-starfive.c

STARFIVE JH7110 PLL CLOCK DRIVER

Mail

Xingyu Wu <xingyu.wu@starfivetech.com>

Status

Supported

Files

Documentation/devicetree/bindings/clock/starfive,jh7110-pll.yaml
drivers/clk/starfive/clk-starfive-jh7110-pll.c

STARFIVE JH7110 PWMDAC DRIVER

Mail

Hal Feng <hal.feng@starfivetechnology.com>, Xingyu Wu
<xingyu.wu@starfivetechnology.com>

Status

Supported

Files

Documentation/devicetree/bindings/sound/starfive,jh7110-pwmdac.yaml
sound/soc/starfive/jh7110_pwmdac.c

STARFIVE JH7110 SYSCON

Mail

William Qiu <william.qiu@starfivetechnology.com>, Xingyu Wu
<xingyu.wu@starfivetechnology.com>

Status

Supported

Files

Documentation/devicetree/bindings/soc/starfive/starfive,
jh7110-syscon.yaml

STARFIVE JH7110 TDM DRIVER

Mail

Walker Chen <walker.chen@starfivetechnology.com>

Status

Maintained

Files

Documentation/devicetree/bindings/sound/starfive,jh7110-tdm.yaml
sound/soc/starfive/jh7110_tdm.c

STARFIVE JH71X0 CLOCK DRIVERS

Mail

Emil Renner Berthing <kernel@esmil.dk>, Hal Feng
<hal.feng@starfivetechnology.com>

Status

Maintained

Files

Documentation/devicetree/bindings/clock/starfive,jh71*.yaml drivers/
clk/starfive/clk-starfive-jh71* include/dt-bindings/clock/starfive?
jh71*.h

STARFIVE JH71X0 PINCTRL DRIVERS

Mail

Emil Renner Berthing <kernel@esmil.dk>, Jianlong Huang <jianlong.huang@starfivetechnology.com>, Hal Feng <hal.feng@starfivetechnology.com>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/pinctrl/starfive,jh71*.yaml
drivers/pinctrl/starfive/pinctrl-starfive-jh71* include/dt-bindings/
pinctrl/pinctrl-starfive-jh7100.h include/dt-bindings/pinctrl/
starfive,jh7110-pinctrl.h

STARFIVE JH71X0 RESET CONTROLLER DRIVERS

Mail

Emil Renner Berthing <kernel@esmil.dk>, Hal Feng
<hal.feng@starfivetechnology.com>

Status

Maintained

Files

Documentation/devicetree/bindings/reset/starfive,jh7100-reset.yaml
drivers/reset/starfive/reset-starfive-jh71* include/dt-bindings/
reset/starfive,jh71*.h

STARFIVE JH71X0 USB DRIVERS

Mail

Minda Chen <minda.chen@starfivetechnology.com>

Status

Maintained

Files

Documentation/devicetree/bindings/usb/starfive,jh7110-usb.yaml
drivers/usb/cdns3/cdns3-starfive.c

STARFIVE JH71XX PMU CONTROLLER DRIVER

Mail

Walker Chen <walker.chen@starfivetech.com>, Changhuang Liang
<changhuang.liang@starfivetech.com>

Status

Supported

Files

Documentation/devicetree/bindings/power/starfive* drivers/pmdomain/
starfive/ include/dt-bindings/power/starfive,jh7110-pmu.h

STARFIVE SOC DRIVERS

Mail

Conor Dooley <conor@kernel.org>

Status

Maintained

SCM

git <https://git.kernel.org/pub/scm/linux/kernel/git/conor/linux.git/>

Files

Documentation/devicetree/bindings/soc/starfive/

STARFIVE TRNG DRIVER

Mail

Jia Jie Ho <jiajie.ho@starfivetech.com>

Status

Supported

Files

Documentation/devicetree/bindings/rng/starfive* drivers/char/
hw_random/jh7110-trng.c

STARFIVE WATCHDOG DRIVER

Mail

Xingyu Wu <xingyu.wu@starfivetech.com>, Samin Guo
<samin.guo@starfivetech.com>

Status

Supported

Files

Documentation/devicetree/bindings/watchdog/starfive* drivers/
watchdog/starfive-wdt.c

STARFIVE JH71X0 PCIE AND USB PHY DRIVER

Mail

Minda Chen <minda.chen@starfivetechnology.com>

Status

Supported

Files

Documentation/devicetree/bindings/phy/starfive,jh7110-pcie-phy.
yaml Documentation/devicetree/bindings/phy/starfive,jh7110-usb-phy.
yaml drivers/phy/starfive/phy-jh7110-pcie.c drivers/phy/starfive/
phy-jh7110-usb.c

STATIC BRANCH/CALL

Mail

Peter Zijlstra <peterz@infradead.org>, Josh Poimboeuf <jpoimboe@kernel.org>, Jason Baron <jbaron@akamai.com>

Reviewer

Steven Rostedt <rostedt@goodmis.org>, Ard Biesheuvel <ardb@kernel.org>

Status

Supported

Files

arch/*/include/asm/jump_label*.h arch/*/include/asm/static_call*.
h arch/*/kernel/jump_label.c arch/*/kernel/static_call.c include/
linux/jump_label*.h include/linux/static_call*.h kernel/jump_label.c
kernel/static_call.c

STI AUDIO (ASoC) DRIVERS

Mail

Arnaud Pouliquen <arnaud.pouliquen@foss.st.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/sound/st,sti-asoc-card.txt sound/
soc/sti/

STI CEC DRIVER

Mail

Alain Volmat <alain.volmat@foss.st.com>

Status

Maintained

Files

Documentation/devicetree/bindings/media/cec/st,asih-cec.yaml
drivers/media/cec/platform/sti/

STK1160 USB VIDEO CAPTURE DRIVER

Mail

Ezequiel Garcia <ezequiel@vanguardiasur.com.ar>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/usb/stk1160/

STM32 AUDIO (ASoC) DRIVERS

Mail

Olivier Moysan <olivier.moysan@foss.st.com>, Arnaud Pouliquen <arnaud.pouliquen@foss.st.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/iio/adc/st,stm32-dfsdm-adc.yaml
Documentation/devicetree/bindings/sound/st,stm32-*.yaml sound/soc/
stm/

STM32 TIMER/LPTIMER DRIVERS

Mail

Fabrice Gasnier <fabrice.gasnier@foss.st.com>

Status

Maintained

Files

Documentation/ABI/testing/*timer-stm32 Documentation/devicetree/
bindings/*/stm32-*timer* drivers/*/stm32-*timer* drivers/pwm/
pwm-stm32* include/linux/*/stm32-*tim*

STMMAC ETHERNET DRIVER

Mail

Alexandre Torgue <alexandre.torgue@foss.st.com>, Jose Abreu
<joabreu@synopsys.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Web-page

<http://www.stlinux.com>

Files

Documentation/networking/device_drivers/ethernet/stmicro/ drivers/
net/ethernet/stmicro/stmmac/

SUN HAPPY MEAL ETHERNET DRIVER

Mail

Sean Anderson <seanga2@gmail.com>

Status

Maintained

Files

drivers/net/ethernet/sun/sunhme.*

SUN3/3X

Mail

Sam Creasey <sammy@sammy.net>

Status

Maintained

Web-page

<http://sammy.net/sun3/>

Files

arch/m68k/include/asm/sun3* arch/m68k/kernel/*sun3* arch/m68k/sun3*/
drivers/net/ethernet/i825xx/sun3*

SUN4I LOW RES ADC ATTACHED TABLET KEYS DRIVER

Mail

Hans de Goede <hdegoede@redhat.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/input/allwinner,
sun4i-a10-lradc-keys.yaml drivers/input/keyboard/sun4i-lradc-keys.c

SUNDANCE NETWORK DRIVER

Mail

Denis Kirjanov <kda@linux-powerpc.org>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/dlink/sundance.c

SUNPLUS ETHERNET DRIVER

Mail

Wells Lu <wellslutw@gmail.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Web-page

<https://sunplus.atlassian.net/wiki/spaces/doc/overview>

Files

Documentation/devicetree/bindings/net/sunplus,sp7021-emas.yaml
drivers/net/ethernet/sunplus/

SUNPLUS MMC DRIVER

Mail

Tony Huang <tonyhuang.sunplus@gmail.com>, Li-hao Kuo <lhj-eff911@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/mmc/sunplus,mmc.yaml drivers/mmc/host/sunplus-mmc.c

SUNPLUS OCOTP DRIVER

Mail

Vincent Shih <vincent.sunplus@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/nvmem/sunplus,sp7021-ocotp.yaml
drivers/nvmem/sunplus-ocotp.c

SUNPLUS PWM DRIVER

Mail

Hammer Hsieh <hammerh0314@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/pwm/sunplus,sp7021-pwm.yaml
drivers/pwm/pwm-sunplus.c

SUNPLUS RTC DRIVER

Mail

Vincent Shih <vincent.sunplus@gmail.com>

Mailing list

linux-rtc@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/rtc/sunplus,sp7021-rtc.yaml
drivers/rtc/rtc-sunplus.c

SUNPLUS SPI CONTROLLER INTERFACE DRIVER

Mail

Li-hao Kuo <lhjeff911@gmail.com>

Mailing list

linux-spi@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/spi/spi-sunplus-sp7021.yaml
drivers/spi/spi-sunplus-sp7021.c

SUNPLUS UART DRIVER

Mail

Hammer Hsieh <hammerh0314@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/serial/sunplus,sp7021-uart.yaml
drivers/tty/serial/sunplus-uart.c

SUNPLUS USB2 PHY DRIVER

Mail

Vincent Shih <vincent.sunplus@gmail.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/phy/sunplus,sp7021-usb2-phy.yaml
drivers/phy/sunplus/Kconfig drivers/phy/sunplus/Makefile drivers/
phy/sunplus/phy-sunplus-usb2.c

SUNPLUS WATCHDOG DRIVER

Mail

Xiantao Hu <xt.hu@cqplus1.com>

Mailing list

linux-watchdog@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/watchdog/sunplus,sp7021-wdt.yaml
drivers/watchdog/sunplus_wdt.c

SUPERH**Mail**

Yoshinori Sato <ysato@users.sourceforge.jp>, Rich Felker <dalias@libc.org>,
John Paul Adrian Glaubit <glaubit@physik.fu-berlin.de>

Mailing list

linux-sh@vger.kernel.org

Status

Maintained

Patchwork

<http://patchwork.kernel.org/project/linux-sh/list/>

Files

Documentation/arch/sh/ arch/sh/ drivers/sh/

SUSPEND TO RAM**Mail**

"Rafael J. Wysocki" <rafael@kernel.org>, Len Brown <len.brown@intel.com>,
Pavel Machek <pavel@ucw.cz>

Mailing list

linux-pm@vger.kernel.org

Status

Supported

bugs

<https://bugzilla.kernel.org>

Files

Documentation/power/ arch/x86/kernel/acpi/sleep* arch/x86/kernel/
acpi/wakeup* drivers/base/power/ include/linux/freezer.h include/
linux/pm.h include/linux/suspend.h kernel/power/

SVGA HANDLING**Mail**

Martin Mares <mj@ucw.cz>

Mailing list

linux-video@atrey.karlin.mff.cuni.cz

Status

Maintained

Files

admin-guide/svg a arch/x86/boot/video*

SWITCHDEV

Mail

Jiri Pirko <jiri@resnulli.us>, Ivan Vecera <ivecera@redhat.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

include/net/switchdev.h net/switchdev/

SY8106A REGULATOR DRIVER

Mail

Icenowy Zheng <icenowy@aosc.io>

Status

Maintained

Files

Documentation/devicetree/bindings/regulator/silergy,sy8106a.yaml
drivers/regulator/sy8106a-regulator.c

SYNC FILE FRAMEWORK

Mail

Sumit Semwal <sumit.semwal@linaro.org>

Reviewer

Gustavo Padovan <gustavo@padovan.org>

Mailing list

linux-media@vger.kernel.org, dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

driver-api/sync_file drivers/dma-buf/dma-fence* drivers/dma-buf/sw_sync.
c drivers/dma-buf/sync_* include/linux/sync_file.h include/uapi/
linux/sync_file.h

SYNOPSYS ARC ARCHITECTURE

Mail

Vineet Gupta <vgupta@kernel.org>

Mailing list

linux-snps-arc@lists.infradead.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/vgupta/arc.git](https://git.kernel.org/pub/scm/linux/kernel/git/vgupta/arc.git)

Files

Documentation/arch/arc Documentation/devicetree/bindings/arc/*
Documentation/devicetree/bindings/interrupt-controller/snps,arc*
arch/arc/ drivers/clocksource/arc_timer.c drivers/tty/serial/
arc_uart.c

SYNOPSYS ARC HSDK SDP pll clock driver

Mail

Eugeny Paltsev <Eugeny.Paltsev@synopsys.com>

Status

Supported

Files

Documentation/devicetree/bindings/clock/snps,hsdk-pll-clock.txt
drivers/clk/clk-hsdk-pll.c

SYNOPSYS ARC SDP clock driver

Mail

Eugeny Paltsev <Eugeny.Paltsev@synopsys.com>

Status

Supported

Files

Documentation/devicetree/bindings/clock/snps,pll-clock.txt drivers/
clk/axs10x/*

SYNOPSYS ARC SDP platform support

Mail

Alexey Brodtkin <abrodtkin@synopsys.com>

Status

Supported

Files

Documentation/devicetree/bindings/arc/axs10* arch/arc/boot/dts/ax*
arch/arc/plat-axs10x

SYNOPSYS AXS10x RESET CONTROLLER DRIVER

Mail

Eugeny Paltsev <Eugeny.Paltsev@synopsys.com>

Status

Supported

Files

Documentation/devicetree/bindings/reset/snps,axs10x-reset.yaml
drivers/reset/reset-axs10x.c

SYNOPSYS CREG GPIO DRIVER

Mail

Eugeny Paltsev <Eugeny.Paltsev@synopsys.com>

Status

Maintained

Files

Documentation/devicetree/bindings/gpio/snps,creg-gpio.txt drivers/
gpio/gpio-creg-snps.c

SYNOPSYS DESIGNWARE 8250 UART DRIVER

Mail

Ilpo Järvinen <ilpo.jarvinen@linux.intel.com>

Reviewer

Andy Shevchenko <andriy.shevchenko@linux.intel.com>

Status

Supported

Files

drivers/tty/serial/8250/8250_dw.c drivers/tty/serial/8250/
8250_dwlib.* drivers/tty/serial/8250/8250_lpss.c

SYNOPSYS DESIGNWARE APB GPIO DRIVER

Mail

Hoan Tran <hoan@os.amperecomputing.com>, Serge Semin
<fancer.lancer@gmail.com>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/gpio/snps,dw-apb-gpio.yaml
drivers/gpio/gpio-dwapb.c

SYNOPSYS DESIGNWARE APB SSI DRIVER

Mail

Serge Semin <fancer.lancer@gmail.com>

Mailing list

linux-spi@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/spi/snps,dw-apb-ssi.yaml drivers/
spi/spi-dw*

SYNOPSYS DESIGNWARE AXI DMAC DRIVER

Mail

Eugeniy Paltsev <Eugeniy.Paltsev@synopsys.com>

Status

Maintained

Files

Documentation/devicetree/bindings/dma/snps,dw-axi-dmac.yaml drivers/
dma/dw-axi-dmac/

SYNOPSYS DESIGNWARE DMAC DRIVER

Mail

Viresh Kumar <vireshk@kernel.org>

Reviewer

Andy Shevchenko <andriy.shevchenko@linux.intel.com>

Status

Maintained

Files

Documentation/devicetree/bindings/dma/renesas,rzn1-dmamux.yaml
Documentation/devicetree/bindings/dma/snps,dma-spear1340.yaml
drivers/dma/dw/ include/dt-bindings/dma/dw-dmac.h include/linux/
dma/dw.h include/linux/platform_data/dma-dw.h

SYNOPSYS DESIGNWARE ENTERPRISE ETHERNET DRIVER

Mail

Jose Abreu <Jose.Abreu@synopsys.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/ethernet/synopsys/

SYNOPSYS DESIGNWARE ETHERNET XPCS DRIVER

Mail

Jose Abreu <Jose.Abreu@synopsys.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/pcs/pcs-xpcs.c drivers/net/pcs/pcs-xpcs.h include/linux/
pcs/pcs-xpcs.h

SYNOPSYS DESIGNWARE I2C DRIVER

Mail

Jarkko Nikula <jarkko.nikula@linux.intel.com>

Reviewer

Andy Shevchenko <andriy.shevchenko@linux.intel.com>, Mika Westerberg
<mika.westerberg@linux.intel.com>, Jan Dabros <jsd@semihalf.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Supported

Files

drivers/i2c/busses/i2c-designware-*

SYNOPSYS DESIGNWARE MMC/SD/SDIO DRIVER**Mail**

Jaehoon Chung <jh80.chung@samsung.com>

Mailing list

linux-mmc@vger.kernel.org

Status

Maintained

Files

drivers/mmc/host/dw_mmc*

SYNOPSYS DESIGNWARE PCIE PMU DRIVER**Mail**

Shuai Xue <xueshuai@linux.alibaba.com>, Jing Zhang
<renyu.zj@linux.alibaba.com>

Status

Supported

Files

admin-guide/perf/dwc_pcie_pmu drivers/perf/dwc_pcie_pmu.c

SYNOPSYS HSDK RESET CONTROLLER DRIVER**Mail**

Eugeniy Paltsev <Eugeniy.Paltsev@synopsys.com>

Status

Supported

Files

Documentation/devicetree/bindings/reset/snps,hsdk-reset.txt drivers/
reset/reset-hsdk.c include/dt-bindings/reset/snps,hsdk-reset.h

SYNOPSYS SDHCI COMPLIANT DWC MSHC DRIVER**Mail**

Prabu Thangamuthu <prabu.t@synopsys.com>, Manjunath M B <man-
jumb@synopsys.com>

Mailing list

linux-mmc@vger.kernel.org

Status

Maintained

Files

drivers/mmc/host/sdhci-pci-dwc-mshc.c

SYSTEM CONFIGURATION (SYSCON)

Mail

Lee Jones <lee@kernel.org>, Arnd Bergmann <arnd@arndb.de>

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/lee/mfd.git](https://git.kernel.org/pub/scm/linux/kernel/git/lee/mfd.git)

Files

drivers/mfd/syscon.c

SYSTEM CONTROL & POWER/MANAGEMENT INTERFACE (SCPI/SCMI) Message Protocol drivers

Mail

Sudeep Holla <sudeep.holla@arm.com>

Reviewer

Cristian Marussi <cristian.marussi@arm.com>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/firmware/arm,sc[mp]i.yaml drivers/
clk/clk-sc[mp]i.c drivers/cpufreq/sc[mp]i-cpufreq.c drivers/firmware/
arm_scmi/ drivers/firmware/arm_scpi.c drivers/pmdomain/arm/ drivers/
powercap/arm_scmi_powercap.c drivers/regulator/scmi-regulator.c
drivers/reset/reset-scmi.c include/linux/sc[mp]i_protocol.h include/
trace/events/scmi.h include/uapi/linux/virtio_scmi.h

SYSTEM RESET/SHUTDOWN DRIVERS

Mail

Sebastian Reichel <sre@kernel.org>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/sre/linux-power-supply.git](https://git.kernel.org/pub/scm/linux/kernel/git/sre/linux-power-supply.git)

Files

Documentation/devicetree/bindings/power/reset/ drivers/power/reset/

SYSTEM TRACE MODULE CLASS

Mail

Alexander Shishkin <alexander.shishkin@linux.intel.com>

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/ash/stm.git](https://git.kernel.org/pub/scm/linux/kernel/git/ash/stm.git)

Files

trace/stm drivers/hwtracing/stm/ include/linux/stm.h include/uapi/
linux/stm.h

SYSTEM76 ACPI DRIVER

Mail

Jeremy Soller <jeremy@system76.com>, System76 Product Development <productdev@system76.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/system76_acpi.c

SYSV FILESYSTEM

Status

Orphan

Files

filesystems/sysv-fs fs/sysv/ include/linux/sysv_fs.h

TASKSTATS STATISTICS INTERFACE

Mail

Balbir Singh <bsingharora@gmail.com>

Status

Maintained

Files

Documentation/accounting/taskstats* include/linux/taskstats* kernel/
taskstats.c

TC subsystem

Mail

Jamal Hadi Salim <jhs@mojatatu.com>, Cong Wang
<xiyou.wangcong@gmail.com>, Jiri Pirko <jiri@resnulli.us>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

include/net/pkt_cls.h include/net/pkt_sched.h include/net/tc_act/
include/uapi/linux/pkt_cls.h include/uapi/linux/pkt_sched.h include/
uapi/linux/tc_act/ include/uapi/linux/tc_ematch/ net/sched/ tools/
testing/selftests/tc-testing

TC90522 MEDIA DRIVER

Mail

Akihiro Tsukada <tskd08@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Odd Fixes

Files

drivers/media/dvb-frontends/tc90522*

TCP LOW PRIORITY MODULE

Mail

"Wong Hoi Sing, Edison" <hswong3i@gmail.com>, "Hung Hing Lun, Mike"
<hlhung3i@gmail.com>

Status

Maintained

Web-page

<http://tcp-lp-mod.sourceforge.net/>

Files

net/ipv4/tcp_lp.c

TDA10071 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/dvb-frontends/tda10071*

TDA18212 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/tuners/tda18212*

TDA18218 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/tuners/tda18218*

TDA18250 MEDIA DRIVER

Mail

Olli Salonen <olli.salonen@iki.fi>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

SCM

git git://linuxtv.org/media_tree.git

Files

drivers/media/tuners/tda18250*

TDA18271 MEDIA DRIVER

Mail

Michael Krufky <mkrufky@linuxtv.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org> <http://github.com/mkrufky>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

SCM

git <git://linuxtv.org/mkrufky/tuners.git>

Files

drivers/media/tuners/tda18271*

TDA1997x MEDIA DRIVER

Mail

Tim Harvey <tharvey@gateworks.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/i2c/tda1997x.*

TDA827x MEDIA DRIVER**Mail**

Michael Krufky <mkrufky@linuxtv.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org> <http://github.com/mkrufky>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

SCM

git <git://linuxtv.org/mkrufky/tuners.git>

Files

drivers/media/tuners/tda8290.*

TDA8290 MEDIA DRIVER**Mail**

Michael Krufky <mkrufky@linuxtv.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org> <http://github.com/mkrufky>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

SCM

git <git://linuxtv.org/mkrufky/tuners.git>

Files

drivers/media/tuners/tda8290.*

TDA9840 MEDIA DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/i2c/tda9840*

TEA5761 TUNER DRIVER

Mail

Mauro Carvalho Chehab <mchehab@kernel.org>

Mailing list

linux-media@vger.kernel.org

Status

Odd fixes

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/tuners/tea5761.*

TEA5767 TUNER DRIVER

Mail

Mauro Carvalho Chehab <mchehab@kernel.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/tuners/tea5767.*

TEA6415C MEDIA DRIVER**Mail**

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/i2c/tea6415c*

TEA6420 MEDIA DRIVER**Mail**

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/i2c/tea6420*

TEAM DRIVER**Mail**

Jiri Pirko <jiri@resnulli.us>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/team/ include/linux/if_team.h include/uapi/linux/if_team.
h tools/testing/selftests/drivers/net/team/

TECHNICAL ADVISORY BOARD PROCESS DOCS

Mail

"Theodore Ts'o" <tytso@mit.edu>, Greg Kroah-Hartman
<gregkh@linuxfoundation.org>

Mailing list

tech-board-discuss@lists.linux-foundation.org

Status

Maintained

Files

process/contribution-maturity-model process/researcher-guidelines

TECHNOLOGIC SYSTEMS TS-5500 PLATFORM SUPPORT

Mail

"Savoir-faire Linux Inc." <kernel@savoirfairelinux.com>

Status

Maintained

Files

arch/x86/platform/ts5500/

TECHNOTREND USB IR RECEIVER

Mail

Sean Young <sean@mess.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/rc/ttusbir.c

TECHWELL TW9900 VIDEO DECODER

Mail

Mehdi Djait <mehdi.djait@bootlin.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/i2c/tw9900.c

TECHWELL TW9910 VIDEO DECODER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Files

drivers/media/i2c/tw9910.c include/media/i2c/tw9910.h

TEE SUBSYSTEM

Mail

Jens Wiklander <jens.wiklander@linaro.org>

Reviewer

Sumit Garg <sumit.garg@linaro.org>

Mailing list

op-tee@lists.trustedfirmware.org

Status

Maintained

Files

driver-api/tee Documentation/tee/ userspace-api/tee drivers/tee/ include/
linux/tee_drv.h include/uapi/linux/tee.h

TEGRA ARCHITECTURE SUPPORT

Mail

Thierry Reding <thierry.reding@gmail.com>, Jonathan Hunter
<jonathanh@nvidia.com>

Mailing list

linux-tegra@vger.kernel.org

Status

Supported

Patchwork

<http://patchwork.ozlabs.org/project/linux-tegra/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tegra/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/tegra/linux.git)

Regex

[^a-z]tegra

TEGRA CLOCK DRIVER

Mail

Peter De Schrijver <pdeschrijver@nvidia.com>, Prashant Gaikwad <pgaikwad@nvidia.com>

Status

Supported

Files

drivers/clock/tegra/

TEGRA DMA DRIVERS

Mail

Laxman Dewangan <ldewangan@nvidia.com>, Jon Hunter <jonathanh@nvidia.com>

Status

Supported

Files

drivers/dma/tegra*

TEGRA I2C DRIVER

Mail

Laxman Dewangan <ldewangan@nvidia.com>

Reviewer

Dmitry Osipenko <digetx@gmail.com>

Status

Supported

Files

drivers/i2c/busses/i2c-tegra.c

TEGRA IOMMU DRIVERS

Mail

Thierry Reding <thierry.reding@gmail.com>

Reviewer

Krishna Reddy <vdumpa@nvidia.com>

Mailing list

linux-tegra@vger.kernel.org

Status

Supported

Files

drivers/iommu/arm/arm-smmu/arm-smmu-nvidia.c drivers/iommu/tegra*

TEGRA KBC DRIVER

Mail

Laxman Dewangan <ldewangan@nvidia.com>

Status

Supported

Files

drivers/input/keyboard/tegra-kbc.c

TEGRA NAND DRIVER

Mail

Stefan Agner <stefan@agner.ch>, Lucas Stach <dev@lynxeye.de>

Status

Maintained

Files

Documentation/devicetree/bindings/mtd/nvidia-tegra20-nand.txt
drivers/mtd/nand/raw/tegra_nand.c

TEGRA PWM DRIVER

Mail

Thierry Reding <thierry.reding@gmail.com>

Status

Supported

Files

drivers/pwm/pwm-tegra.c

TEGRA QUAD SPI DRIVER

Mail

Thierry Reding <thierry.reding@gmail.com>, Jonathan Hunter
<jonathanh@nvidia.com>, Sowjanya Komatineni <skomatineni@nvidia.com>

Mailing list

linux-tegra@vger.kernel.org

Status

Maintained

Files

drivers/spi/spi-tegra210-quad.c

TEGRA SERIAL DRIVER

Mail

Laxman Dewangan <ldewangan@nvidia.com>

Status

Supported

Files

drivers/tty/serial/serial-tegra.c

TEGRA SPI DRIVER

Mail

Laxman Dewangan <ldewangan@nvidia.com>

Status

Supported

Files

drivers/spi/spi-tegra*

TEGRA VIDEO DRIVER

Mail

Thierry Reding <thierry.reding@gmail.com>, Jonathan Hunter
<jonathanh@nvidia.com>, Sowjanya Komatineni <skomatineni@nvidia.com>,
Luca Ceresoli <luca.ceresoli@bootlin.com>

Mailing list

linux-media@vger.kernel.org, linux-tegra@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/display/tegra/nvidia,
tegra20-host1x.yaml Documentation/devicetree/bindings/display/tegra/

nvidia,tegra20-vi.yaml Documentation/devicetree/bindings/display/
tegra/nvidia,tegra20-vip.yaml drivers/staging/media/tegra-video/

TEGRA XUSB PADCTL DRIVER

Mail

JC Kuo <jckuo@nvidia.com>

Status

Supported

Files

drivers/phy/tegra/xusb*

TEHUTI ETHERNET DRIVER

Mail

Andy Gospodarek <andy@greyhouse.net>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/ethernet/tehuti/*

TELECOM CLOCK DRIVER FOR MCPL0010

Mail

Mark Gross <markgross@kernel.org>

Status

Supported

Files

drivers/char/tlclk.c

TEMPO SEMICONDUCTOR DRIVERS

Mail

Steven Eckhoff <steven.eckhoff.opensource@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/sound/tscs*.txt sound/soc/codecs/
tscs*.c sound/soc/codecs/tscs*.h

TENSILICA XTENSA PORT (xtensa)

Mail

Chris Zankel <chris@zankel.net>, Max Filippov <jcmvbkbc@gmail.com>

Status

Maintained

SCM

git <https://github.com/jcmvbkbc/linux-xtensa.git>

Files

arch/xtensa/ drivers/irqchip/irq-xtensa-*

TEXAS INSTRUMENTS ASoC DRIVERS

Mail

Peter Ujfalusi <peter.ujfalusi@gmail.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/sound/davinci-mcasp-audio.yaml
sound/soc/ti/

TEXAS INSTRUMENTS AUDIO (ASoC/HDA) DRIVERS

Mail

Shenghao Ding <shenghao-ding@ti.com>, Kevin Lu <kevin-lu@ti.com>, Baojun Xu <baojun.xu@ti.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/sound/tas2552.txt Documentation/
devicetree/bindings/sound/tas2562.yaml Documentation/devicetree/
bindings/sound/tas2770.yaml Documentation/devicetree/bindings/
sound/tas27xx.yaml Documentation/devicetree/bindings/sound/
ti,pcm1681.txt Documentation/devicetree/bindings/sound/ti,
pcm3168a.yaml Documentation/devicetree/bindings/sound/ti,tlv320*.
yaml Documentation/devicetree/bindings/sound/tlv320adcx140.
yaml Documentation/devicetree/bindings/sound/tlv320aic3lxx.txt
Documentation/devicetree/bindings/sound/tpa6130a2.txt include/
sound/tas2*.h include/sound/tlv320*.h include/sound/tpa6130a2-plat.h
sound/pci/hda/tas2781_hda_i2c.c sound/soc/codecs/pcm1681.c sound/
soc/codecs/pcm1789*.* sound/soc/codecs/pcm179x*.* sound/soc/codecs/
pcm186x*.* sound/soc/codecs/pcm3008.* sound/soc/codecs/pcm3060*.*

sound/soc/codecs/pcm3168a*.* sound/soc/codecs/pcm5102a.c sound/soc/
codecs/pcm512x*.* sound/soc/codecs/tas2*.* sound/soc/codecs/tlv320*.*
sound/soc/codecs/tpa6130a2.*

TEXAS INSTRUMENTS DMA DRIVERS

Mail

Peter Ujfalusi <peter.ujfalusi@gmail.com>

Mailing list

dmaengine@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/dma/ti-dma-crossbar.txt
Documentation/devicetree/bindings/dma/ti-edma.txt Documentation/
devicetree/bindings/dma/ti/ drivers/dma/ti/ include/linux/dma/
k3-psil.h include/linux/dma/k3-udma-glue.h include/linux/dma/
ti-cppi5.h

Excluded

drivers/dma/ti/cppi41.c

TEXAS INSTRUMENTS TPS23861 PoE PSE DRIVER

Mail

Robert Marko <robert.marko@sartura.hr>, Luka Perkov
<luka.perkov@sartura.hr>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/hwmon/ti,tps23861.yaml hw-
mon/tps23861 drivers/hwmon/tps23861.c

TEXAS INSTRUMENTS' DAC7612 DAC DRIVER

Mail

Ricardo Ribalda <ribalda@kernel.org>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/iio/dac/ti,dac7612.yaml drivers/
iio/dac/ti-dac7612.c

TEXAS INSTRUMENTS' SYSTEM CONTROL INTERFACE (TISCI) PROTOCOL DRIVER

Mail

Nishanth Menon <nm@ti.com>, Tero Kristo <kristo@kernel.org>, Santosh
Shilimkar <ssantosh@kernel.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/arm/keystone/ti,k3-sci-common.
yaml Documentation/devicetree/bindings/arm/keystone/ti,sci.
yaml Documentation/devicetree/bindings/clock/ti,sci-clk.yaml
Documentation/devicetree/bindings/interrupt-controller/ti,sci-inta.
yaml Documentation/devicetree/bindings/interrupt-controller/ti,
sci-intr.yaml Documentation/devicetree/bindings/reset/ti,sci-reset.
yaml Documentation/devicetree/bindings/soc/ti/sci-pm-domain.
yaml drivers/clock/keystone/sci-clk.c drivers/firmware/ti_sci*
drivers/irqchip/irq-ti-sci-inta.c drivers/irqchip/irq-ti-sci-intr.
c drivers/reset/reset-ti-sci.c drivers/soc/ti/ti_sci_inta_msi.c
drivers/pmdomain/ti/ti_sci_pm_domains.c include/dt-bindings/soc/
ti,sci_pm_domain.h include/linux/soc/ti/ti_sci_inta_msi.h include/
linux/soc/ti/ti_sci_protocol.h

TEXAS INSTRUMENTS' TMP117 TEMPERATURE SENSOR DRIVER

Mail

Puranjay Mohan <puranjay12@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/iio/temperature/ti,tmp117.yaml
drivers/iio/temperature/tmp117.c

THANKO'S RAREMONO AM/FM/SW RADIO RECEIVER USB DRIVER**Mail**

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git git://linuxtv.org/media_tree.git

Files

drivers/media/radio/radio-raremono.c

THERMAL**Mail**

Rafael J. Wysocki <rafael@kernel.org>, Daniel Lezcano
<daniel.lezcano@linaro.org>

Reviewer

Zhang Rui <rui.zhang@intel.com>, Lukasz Luba <lukasz.luba@arm.com>

Mailing list

linux-pm@vger.kernel.org

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/linux-pm/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/rafael/linux-pm.git](https://git.kernel.org/pub/scm/linux/kernel/git/rafael/linux-pm.git) thermal

Files

Documentation/ABI/testing/sysfs-class-thermal Documentation/
admin-guide/thermal/ Documentation/devicetree/bindings/thermal/
Documentation/driver-api/thermal/ drivers/thermal/ include/
dt-bindings/thermal/ include/linux/cpu_cooling.h include/linux/
thermal.h include/uapi/linux/thermal.h tools/lib/thermal/ tools/
thermal/

THERMAL DRIVER FOR AMLOGIC SOCS

Mail

Guillaume La Roque <glaroque@baylibre.com>

Mailing list

linux-pm@vger.kernel.org, linux-amlogic@lists.infradead.org

Status

Supported

Web-page

<http://linux-meson.com/>

Files

Documentation/devicetree/bindings/thermal/amlogic,thermal.yaml
drivers/thermal/amlogic_thermal.c

THERMAL/CPU_COOLING

Mail

Amit Daniel Kachhap <amit.kachhap@gmail.com>, Daniel Lezcano
<daniel.lezcano@linaro.org>, Viresh Kumar <viresh.kumar@linaro.org>

Reviewer

Lukasz Luba <lukasz.luba@arm.com>

Mailing list

linux-pm@vger.kernel.org

Status

Supported

Files

driver-api/thermal/cpu-cooling-api driver-api/thermal/cpu-idle-cooling drivers/
thermal/cpufreq_cooling.c drivers/thermal/cpuidle_cooling.c include/
linux/cpu_cooling.h

THERMAL/POWER_ALLOCATOR

Mail

Lukasz Luba <lukasz.luba@arm.com>

Mailing list

linux-pm@vger.kernel.org

Status

Maintained

Files

driver-api/thermal/power_allocator drivers/thermal/gov_power_allocator.c
drivers/thermal/thermal_trace_ipa.h

THINKPAD ACPI EXTRAS DRIVER

Mail

Henrique de Moraes Holschuh <hmh@hmh.eng.br>

Mailing list

ibm-acpi-devel@lists.sourceforge.net, platform-driver-x86@vger.kernel.org

Status

Maintained

Web-page

<http://ibm-acpi.sourceforge.net> <http://thinkwiki.org/wiki/Ibm-acpi>

SCM

git [git://repo.or.cz/linux-2.6/linux-acpi-2.6/ibm-acpi-2.6.git](https://repo.or.cz/linux-2.6/linux-acpi-2.6/ibm-acpi-2.6.git)

Files

`drivers/platform/x86/thinkpad_acpi.c`

THINKPAD LMI DRIVER

Mail

Mark Pearson <markpearson@lenovo.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

`Documentation/ABI/testing/sysfs-class-firmware-attributes` `drivers/platform/x86/think-lmi.?`

THP7312 ISP DRIVER

Mail

Laurent Pinchart <laurent.pinchart@ideasonboard.com>, Paul Elder <paul.elder@ideasonboard.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

`Documentation/devicetree/bindings/media/i2c/thine,thp7312.yaml`
`userspace-api/media/drivers/thp7312` `drivers/media/i2c/thp7312.c` `include/uapi/linux/thp7312.h`

THUNDERBOLT DMA TRAFFIC TEST DRIVER

Mail

Isaac Hazan <isaac.hazan@intel.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

drivers/thunderbolt/dma_test.c

THUNDERBOLT DRIVER

Mail

Andreas	Noever	<andreas.noever@gmail.com>,	Michael
Jamet	<michael.jamet@intel.com>,	Mika	Westerberg
	<mika.westerberg@linux.intel.com>,	Yehezkel	Bernat
	<YehezkelShB@gmail.com>		

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/westeri/thunderbolt.git](https://git.kernel.org/pub/scm/linux/kernel/git/westeri/thunderbolt.git)

Files

admin-guide/thunderbolt	drivers/thunderbolt/	include/linux/
thunderbolt.h		

THUNDERBOLT NETWORK DRIVER

Mail

Michael	Jamet	<michael.jamet@intel.com>,	Mika	Wester-
berg	<mika.westerberg@linux.intel.com>,	Yehezkel		Bernat
	<YehezkelShB@gmail.com>			

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/thunderbolt/

THUNDERX GPIO DRIVER

Mail

Robert Richter <rric@kernel.org>

Status

Odd Fixes

Files

drivers/gpio/gpio-thunderx.c

TI ADS7924 ADC DRIVER

Mail

Hugo Villeneuve <hvilleneuve@dimonoff.com>

Mailing list

linux-iio@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/iio/adc/ti,ads7924.yaml drivers/
iio/adc/ti-ads7924.c

TI AM437X VPFE DRIVER

Mail

"Lad, Prabhakar" <prabhakar.csengg@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

SCM

git [git://linuxtv.org/mhadli/v4l-dvb-davinci_devices.git](https://linuxtv.org/mhadli/v4l-dvb-davinci_devices.git)

Files

drivers/media/platform/ti/am437x/

TI BANDGAP AND THERMAL DRIVER

Mail

Eduardo Valentin <edubezval@gmail.com>, Keerthy <j-keerthy@ti.com>

Mailing list

linux-pm@vger.kernel.org, linux-omap@vger.kernel.org

Status

Maintained

Files

drivers/thermal/ti-soc-thermal/

TI BQ27XXX POWER SUPPLY DRIVER

Files

drivers/power/supply/bq27xxx_battery.c drivers/power/supply/
bq27xxx_battery_i2c.c include/linux/power/bq27xxx_battery.h

TI CDCE706 CLOCK DRIVER

Mail

Max Filippov <jcmvbkbc@gmail.com>

Status

Maintained

Files

drivers/clk/clk-cdce706.c

TI CLOCK DRIVER

Mail

Tero Kristo <kristo@kernel.org>

Mailing list

linux-omap@vger.kernel.org

Status

Odd Fixes

Files

drivers/clk/ti/ include/linux/clk/ti.h

TI DAVINCI MACHINE SUPPORT

Mail

Bartosz Golaszewski <brgl@bgdev.pl>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/brgl/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/brgl/linux.git)

Files

Documentation/devicetree/bindings/i2c/i2c-davinci.txt arch/arm/
boot/dts/ti/davinci/ arch/arm/mach-davinci/ drivers/i2c/busses/
i2c-davinci.c

TI DAVINCI SERIES CLOCK DRIVER

Mail

David Lechner <david@lechnology.com>

Reviewer

Sekhar Nori <nsekhar@ti.com>

Status

Maintained

Files

Documentation/devicetree/bindings/clock/ti/davinci/ drivers/clk/
davinci/ include/linux/clk/davinci.h

TI DAVINCI SERIES GPIO DRIVER

Mail

Keerthy <j-keerthy@ti.com>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/gpio/gpio-davinci.yaml drivers/
gpio/gpio-davinci.c

TI DAVINCI SERIES MEDIA DRIVER

Mail

"Lad, Prabhakar" <prabhakar.csengg@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

SCM

git [git://linuxtv.org/mhadli/v4l-dvb-davinci_devices.git](https://linuxtv.org/mhadli/v4l-dvb-davinci_devices.git)

Files

drivers/media/platform/ti/davinci/ include/media/davinci/

TI ENHANCED CAPTURE (eCAP) DRIVER

Mail

Vignesh Raghavendra <vigneshr@ti.com>

Reviewer

Julien Panis <jpanis@baylibre.com>

Mailing list

linux-iio@vger.kernel.org, linux-omap@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/counter/ti,am62-ecap-capture.yaml
drivers/counter/ti-ecap-capture.c

TI ENHANCED QUADRATURE ENCODER PULSE (eQEP) DRIVER

Reviewer

David Lechner <david@lechnology.com>

Mailing list

linux-iio@vger.kernel.org

Files

Documentation/devicetree/bindings/counter/ti-eqep.yaml drivers/
counter/ti-eqep.c

TI ETHERNET SWITCH DRIVER (CPSW)

Reviewer

Siddharth Vadapalli <s-vadapalli@ti.com>, Ravi Gunasekaran <r-gunasekaran@ti.com>, Roger Quadros <rogerq@kernel.org>

Mailing list

linux-omap@vger.kernel.org, netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/ethernet/ti/cpsw* drivers/net/ethernet/ti/davinci*

TI FLASH MEDIA MEMORYSTICK/MMC DRIVERS

Mail

Alex Dubov <oakad@yahoo.com>

Status

Maintained

Web-page

<http://tifmxx.berlios.de/>

Files

drivers/memstick/host/tifm_ms.c drivers/misc/tifm* drivers/mmc/host/tifm_sd.c include/linux/tifm.h

TI FPD-LINK DRIVERS

Mail

Tomi Valkeinen <tomi.valkeinen@ideasonboard.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/i2c/ti,ds90* drivers/media/i2c/ds90* include/media/i2c/ds90*

TI HDC302X HUMIDITY DRIVER

Mail

Javier Carrasco <javier.carrasco.cruz@gmail.com>, Li peiyu
<579lpy@gmail.com>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/humidity/ti,hdc3020.yaml
drivers/iio/humidity/hdc3020.c

TI ICSSG ETHERNET DRIVER (ICSSG)

Reviewer

MD Danish Anwar <danishanwar@ti.com>, Roger Quadros
<rogerq@kernel.org>

Mailing list

linux-arm-kernel@lists.infradead.org (moderated for non-subscribers), net-dev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/ti,icss*.yaml drivers/net/
ethernet/ti/icssg/*

TI J721E CSI2RX DRIVER

Mail

Jai Luthra <j-luthra@ti.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/ti,j721e-csi2rx-shim.yaml
drivers/media/platform/ti/j721e-csi2rx/

TI KEYSTONE MULTICORE NAVIGATOR DRIVERS

Mail

Nishanth Menon <nm@ti.com>, Santosh Shilimkar <ssantosh@kernel.org>

Mailing list

linux-kernel@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/ti/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/ti/linux.git)

Files

`drivers/pmdomain/ti/omap_prm.c` `drivers/soc/ti/*`

TI LM49xxx FAMILY ASoC CODEC DRIVERS

Mail

M R Swami Reddy <mr.swami.reddy@ti.com>, Vishwas A Deshpande <vishwas.a.deshpande@ti.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

`sound/soc/codecs/isabelle*` `sound/soc/codecs/lm49453*`

TI LMP92064 ADC DRIVER

Mail

Leonard Göhrs <l.goehrs@pengutronix.de>

Reviewer

kernel@pengutronix.de

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

`Documentation/devicetree/bindings/iio/adc/ti,lmp92064.yaml` `drivers/iio/adc/ti-lmp92064.c`

TI PCM3060 ASoC CODEC DRIVER

Mail

Kirill Marinushkin <kmarinushkin@birdec.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

Documentation/devicetree/bindings/sound/pcm3060.txt sound/soc/
codecs/pcm3060*

TI TAS571X FAMILY ASoC CODEC DRIVER

Mail

Kevin Cernekee <cernekee@chromium.org>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Odd Fixes

Files

sound/soc/codecs/tas571x*

TI TMAG5273 MAGNETOMETER DRIVER

Mail

Gerald Loacker <gerald.loacker@wolfvision.net>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/magnetometer/ti,tmag5273.yaml
drivers/iio/magnetometer/tmag5273.c

TI TRF7970A NFC DRIVER

Mail

Mark Greer <mgreer@animalcreek.com>

Mailing list

linux-wireless@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/net/nfc/ti,trf7970a.yaml drivers/
nfc/trf7970a.c

TI TSC2046 ADC DRIVER**Mail**

Oleksij Rempel <o.rempel@pengutronix.de>

Reviewer

kernel@pengutronix.de

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/adc/ti,tsc2046.yaml drivers/
iio/adc/ti-tsc2046.c

TI TWL4030 SERIES SOC CODEC DRIVER**Mail**

Peter Ujfalusi <peter.ujfalusi@gmail.com>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

sound/soc/codecs/twl4030*

TI VPE/CAL DRIVERS**Mail**

Benoit Parrot <bparrot@ti.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<http://linuxtv.org/>

Patchwork

<http://patchwork.linuxtv.org/project/linux-media/list/>

Files

Documentation/devicetree/bindings/media/ti,cal.yaml Documentation/
devicetree/bindings/media/ti,vpe.yaml drivers/media/platform/ti/cal/
drivers/media/platform/ti/vpe/

TI WILINK WIRELESS DRIVERS

Mailing list

linux-wireless@vger.kernel.org

Status

Orphan

Web-page

<https://wireless.wiki.kernel.org/en/users/Drivers/wl12xx> <https://wireless.wiki.kernel.org/en/users/Drivers/wl1251>

Files

drivers/net/wireless/ti/

TIMEKEEPING, CLOCKSOURCE CORE, NTP, ALARMTIMER

Mail

John Stultz <jstultz@google.com>, Thomas Gleixner <tglx@linutronix.de>

Reviewer

Stephen Boyd <sboyd@kernel.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git](https://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git) timers/core

Files

include/linux/clocksource.h include/linux/time.h include/linux/timex.
h include/uapi/linux/time.h include/uapi/linux/timex.h kernel/time/
alarmtimer.c kernel/time/clocksource.c kernel/time/ntp.c kernel/time/
time*.c tools/testing/selftests/timers/

TIPC NETWORK LAYER

Mail

Jon Maloy <jmaloy@redhat.com>, Ying Xue <ying.xue@windriver.com>

Mailing list

netdev@vger.kernel.org (core kernel code), tipc-discussion@lists.sourceforge.net
(user apps, general discussion)

Status

Maintained

Web-page

<http://tipc.sourceforge.net/>

Files

include/uapi/linux/tipc*.h net/tipc/

TLAN NETWORK DRIVER**Mail**

Samuel Chessman <chessman@tux.org>

Mailing list

tlan-devel@lists.sourceforge.net (subscribers-only)

Status

Maintained

Web-page

<http://sourceforge.net/projects/tlan/>

Files

networking/device_drivers/ethernet/ti/tlan drivers/net/ethernet/ti/tlan.*

TMIO/SDHI MMC DRIVER**Mail**

Wolfram Sang <wsa+renesas@sang-engineering.com>

Mailing list

linux-mmc@vger.kernel.org, linux-renesas-soc@vger.kernel.org

Status

Supported

Files

drivers/mmc/host/renesas_sdhi* drivers/mmc/host/tmio_mmc* include/
linux/mfd/tmio.h

TMP401 HARDWARE MONITOR DRIVER**Mail**

Guenter Roeck <linux@roeck-us.net>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/hwmon/ti,tmp401.yaml hwmon/tmp401
drivers/hwmon/tmp401.c

TMP464 HARDWARE MONITOR DRIVER

Mail

Guenter Roeck <linux@roeck-us.net>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/hwmon/ti,tmp464.yaml hwmon/tmp464
drivers/hwmon/tmp464.c

TMP513 HARDWARE MONITOR DRIVER

Mail

Eric Tremblay <etremblay@distech-controls.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/tmp513 drivers/hwmon/tmp513.c

TMPFS (SHMEM FILESYSTEM)

Mail

Hugh Dickins <hughd@google.com>

Mailing list

linux-mm@kvack.org

Status

Maintained

Files

include/linux/shmem_fs.h mm/shmem.c

TOMOYO SECURITY MODULE

Mail

Kentaro Takeda <takedakn@nttdata.co.jp>, Tetsuo Handa <penguin-kernel@I-love.SAKURA.ne.jp>

Mailing list

tomoyo-dev-en@lists.osdn.me (subscribers-only, for developers in English),
tomoyo-users-en@lists.osdn.me (subscribers-only, for users in English), tomoyo-dev@lists.osdn.me (subscribers-only, for developers in Japanese), tomoyo-users@lists.osdn.me (subscribers-only, for users in Japanese)

Status

Maintained

Web-page

<https://tomoyo.osdn.jp/>

Files

security/tomoyo/

TOPSTAR LAPTOP EXTRAS DRIVER**Mail**

Herton Ronaldo Krzesinski <herton@canonical.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/topstar-laptop.c

TORTURE-TEST MODULES**Mail**

Davidlohr Bueso <dave@stgolabs.net>, "Paul E. McKenney"
<paulmck@kernel.org>, Josh Triplett <josh@joshtriplett.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/paulmck/linux-rcu.git](https://git.kernel.org/pub/scm/linux/kernel/git/paulmck/linux-rcu.git) dev

Files

RCU/torture kernel/locking/locktorture.c kernel/rcu/rcuscale.c kernel/
rcu/rcutorture.c kernel/rcu/refscale.c kernel/torture.c

TOSHIBA ACPI EXTRAS DRIVER**Mail**

Azael Avalos <coproscefalo@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/toshiba_acpi.c

TOSHIBA BLUETOOTH DRIVER

Mail

Azael Avalos <coproscefalo@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/toshiba_bluetooth.c

TOSHIBA HDD ACTIVE PROTECTION SENSOR DRIVER

Mail

Azael Avalos <coproscefalo@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/toshiba_haps.c

TOSHIBA SMM DRIVER

Mail

Jonathan Buzzard <jonathan@buzzard.org.uk>

Status

Maintained

Web-page

<http://www.buzzard.org.uk/toshiba/>

Files

drivers/char/toshiba.c include/linux/toshiba.h include/uapi/linux/
toshiba.h

TOSHIBA TC358743 DRIVER

Mail

Hans Verkuil <hverkuil-cisco@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/i2c/tc358743.txt drivers/
media/i2c/tc358743* include/media/i2c/tc358743.h

TOSHIBA WMI HOTKEYS DRIVER**Mail**

Azael Avalos <coproscefalo@gmail.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/toshiba-wmi.c

TPM DEVICE DRIVER**Mail**

Peter Huewe <peterhuewe@gmx.de>, Jarkko Sakkinen <jarkko@kernel.org>

Reviewer

Jason Gunthorpe <jgg@ziepe.ca>

Mailing list

linux-integrity@vger.kernel.org

Status

Maintained

Web-page

https://kernsec.org/wiki/index.php/Linux_Kernel_Integrity

Patchwork

<https://patchwork.kernel.org/project/linux-integrity/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/jarkko/linux-tpmdd.git](https://git.kernel.org/pub/scm/linux/kernel/git/jarkko/linux-tpmdd.git)

Files

drivers/char/tpm/

TPS546D24 DRIVER**Mail**

Duke Du <dukedu83@gmail.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/tps546d24 drivers/hwmon/pmbus/tps546d24.c

TQ SYSTEMS BOARD & DRIVER SUPPORT

Mailing list

linux@ew.tq-group.com

Status

Supported

Web-page

<https://www.tq-group.com/en/products/tq-embedded/>

Files

arch/arm/boot/dts/imx*mba*.dts* arch/arm/boot/dts/imx*tqma*.dts* arch/arm/boot/dts/mba*.dtsi arch/arm64/boot/dts/freescale/fsl-*tqml*.dts* arch/arm64/boot/dts/freescale/imx*mba*.dts* arch/arm64/boot/dts/freescale/imx*tqma*.dts* arch/arm64/boot/dts/freescale/mba*.dtsi arch/arm64/boot/dts/freescale/tqml*.dts* drivers/gpio/gpio-tqmx86.c drivers/mfd/tqmx86.c drivers/watchdog/tqmx86_wdt.c

TRACING

Mail

Steven Rostedt <rostedt@goodmis.org>, Masami Hiramatsu <[mhira-mat@kernel.org](mailto:mhiramat@kernel.org)>

Reviewer

Mathieu Desnoyers <mathieu.desnoyers@efficios.com>

Mailing list

linux-kernel@vger.kernel.org, linux-trace-kernel@vger.kernel.org

Status

Maintained

Patchwork

<https://patchwork.kernel.org/project/linux-trace-kernel/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/trace/linux-trace.git](https://git.kernel.org/pub/scm/linux/kernel/git/trace/linux-trace.git)

Files

Documentation/trace/* fs/tracefs/ include/linux/trace*.h include/trace/ kernel/trace/ scripts/tracing/ tools/testing/selftests/ftrace/

TRACING MMIO ACCESSES (MMIOTRACE)

Mail

Steven Rostedt <rostedt@goodmis.org>, Masami Hiramatsu <mhiramat@kernel.org>

Reviewer

Karol Herbst <karolherbst@gmail.com>, Pekka Paalanen <ppaalanen@gmail.com>

Mailing list

linux-kernel@vger.kernel.org, nouveau@lists.freedesktop.org

Status

Maintained

Files

`arch/x86/mm/kmmio.c arch/x86/mm/mmio-mod.c arch/x86/mm/testmmiotrace.c`
`include/linux/mmiotrace.h kernel/trace/trace_mmiotrace.c`

TRACING OS NOISE / LATENCY TRACERS

Mail

Steven Rostedt <rostedt@goodmis.org>, Daniel Bristot de Oliveira <bristot@kernel.org>

Status

Maintained

Files

`trace/hwlat_detector trace/osnoise-tracer trace/timerlat-tracer arch/*/kernel/trace.c`
`include/trace/events/osnoise.h kernel/trace/trace_hwlat.c kernel/trace/trace_irqsoff.c`
`kernel/trace/trace_osnoise.c kernel/trace/trace_sched_wakeup.c`

TRADITIONAL CHINESE DOCUMENTATION

Mail

Hu Haowen <2023002089@link.tyut.edu.cn>

Status

Maintained

Web-page

<https://github.com/srcres258/linux-doc>

SCM

`git git://github.com/srcres258/linux-doc.git doc-zh-tw`

Files

`Documentation/translations/zh_TW/`

TRUSTED SECURITY MODULE (TSM) ATTESTATION REPORTS

Mail

Dan Williams <dan.j.williams@intel.com>

Mailing list

linux-coco@lists.linux.dev

Status

Maintained

Files

Documentation/ABI/testing/configfs-tsm drivers/virt/coco/tsm.c
include/linux/tsm.h

TTY LAYER AND SERIAL DRIVERS

Mail

Greg Kroah-Hartman <gregkh@linuxfoundation.org>, Jiri Slaby <jiris-laby@kernel.org>

Mailing list

linux-kernel@vger.kernel.org, linux-serial@vger.kernel.org

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/gregkh/tty.git](https://git.kernel.org/pub/scm/linux/kernel/git/gregkh/tty.git)

Files

Documentation/devicetree/bindings/serial/ Documentation/driver-api/
serial/ drivers/tty/ include/linux/selection.h include/linux/serial.h
include/linux/serial_core.h include/linux/sysrq.h include/linux/tty*.
h include/linux/vt.h include/linux/vt_*.h include/uapi/linux/serial.h
include/uapi/linux/serial_core.h include/uapi/linux/tty.h

TUA9001 MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linxrtv.org>

Patchwork

<http://patchwork.linxrtv.org/project/linux-media/list/>

Files

drivers/media/tuners/tua9001*

TULIP NETWORK DRIVERS

Mailing list

netdev@vger.kernel.org, linux-parisc@vger.kernel.org

Status

Orphan

Files

`drivers/net/ethernet/dec/tulip/`

TUN/TAP driver

Mail

Willem de Bruijn <willemdebruijn.kernel@gmail.com>, Jason Wang <jasowang@redhat.com>

Status

Maintained

Web-page

<http://vtun.sourceforge.net/tun>

Files

`networking/tuntap arch/um/os-Linux/drivers/ drivers/net/tap.c drivers/net/tun.c`

TURBOCHANNEL SUBSYSTEM

Mail

"Maciej W. Rozycki" <macro@orcam.me.uk>, Ralf Baechle <ralf@linux-mips.org>

Mailing list

linux-mips@vger.kernel.org

Status

Maintained

Patchwork

<http://patchwork.linux-mips.org/project/linux-mips/list/>

Files

`drivers/tc/ include/linux/tc.h`

TURBOSTAT UTILITY

Mail

"Len Brown" <lenb@kernel.org>

Mailing list

linux-pm@vger.kernel.org

Status

Supported

Patchwork

<https://patchwork.kernel.org/project/linux-pm/list/>

bugs

<https://bugzilla.kernel.org>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/lenb/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/lenb/linux.git) turbostat

Files

tools/power/x86/turbostat/

TW5864 VIDEO4LINUX DRIVER

Mail

Bluecherry Maintainers <maintainers@bluecherrydvr.com>, Anton Sviridenko <anton@corp.bluecherry.net>, Andrey Utkin <andrey.utkin@corp.bluecherry.net>, Andrey Utkin <andrey_utkin@fastmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Files

drivers/media/pci/tw5864/

TW68 VIDEO4LINUX DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Odd Fixes

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/pci/tw68/

TW686X VIDEO4LINUX DRIVER**Mail**

Ezequiel Garcia <ezequiel@vanguardiasur.com.ar>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<http://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/pci/tw686x/

U-BOOT ENVIRONMENT VARIABLES**Mail**

Rafał Milecki <rafal@milecki.pl>

Status

Maintained

Files

Documentation/devicetree/bindings/nvmem/u-boot,env.yaml drivers/
nvmem/u-boot-env.c

UACCE ACCELERATOR FRAMEWORK**Mail**

Zhangfei Gao <zhangfei.gao@linaro.org>, Zhou Wang
<wangzhou1@hisilicon.com>

Mailing list

linux-accelerators@lists.ozlabs.org, linux-kernel@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-driver-uacce misc-devices/uacce
drivers/misc/uacce/ include/linux/uacce.h include/uapi/misc/uacce/

UBI FILE SYSTEM (UBIFS)

Mail

Richard Weinberger <richard@nod.at>

Mailing list

linux-mtd@lists.infradead.org

Status

Supported

Web-page

<http://www.linux-mtd.infradead.org/doc/ubifs.html>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/rw/ubifs.git](https://git.kernel.org/pub/scm/linux/kernel/git/rw/ubifs.git) next git
[git://git.kernel.org/pub/scm/linux/kernel/git/rw/ubifs.git](https://git.kernel.org/pub/scm/linux/kernel/git/rw/ubifs.git) fixes

Files

Documentation/ABI/testing/sysfs-fs-ubifs filesystems/ubifs-authentication
filesystems/ubifs fs/ubifs/

UBLK USERSPACE BLOCK DRIVER

Mail

Ming Lei <ming.lei@redhat.com>

Mailing list

linux-block@vger.kernel.org

Status

Maintained

Files

block/ublk drivers/block/ublk_drv.c include/uapi/linux/ublk_cmd.h

UCLINUX (M68KNOMMU AND COLDFIRE)

Mail

Greg Ungerer <gerg@linux-m68k.org>

Mailing list

linux-m68k@lists.linux-m68k.org

Status

Maintained

Web-page

<http://www.linux-m68k.org/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/gerg/m68knommu.git](https://git.kernel.org/pub/scm/linux/kernel/git/gerg/m68knommu.git)

Files

arch/m68k/*/*_no.* arch/m68k/68*/ arch/m68k/coldfire/ arch/m68k/
include/asm/*_no.*

UDF FILESYSTEM

Mail

Jan Kara <jack@suse.com>

Status

Maintained

Files

filesystems/udf fs/udf/

UDRAW TABLET

Mail

Bastien Nocera <hadess@hadess.net>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/hid/hid-udraw-ps3.c

UFS FILESYSTEM

Mail

Evgeniy Dushistov <dushistov@mail.ru>

Status

Maintained

Files

admin-guide/ufs fs/ufs/

UHID USERSPACE HID IO DRIVER

Mail

David Rheinsberg <david@readahead.eu>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/hid/uhid.c include/uapi/linux/uhid.h

ULPI BUS

Mail

Heikki Krogerus <heikki.krogerus@linux.intel.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

drivers/usb/common/ulpi.c include/linux/ulpi/

UNICODE SUBSYSTEM

Mail

Gabriel Krisman Bertazi <krisman@kernel.org>

Mailing list

linux-fsdevel@vger.kernel.org

Status

Supported

Files

fs/unicode/

UNIFDEF

Mail

Tony Finch <dot@dotat.at>

Status

Maintained

Web-page

<http://dotat.at/prog/unifdef>

Files

scripts/unifdef.c

UNIFORM CDROM DRIVER

Mail

Phillip Potter <phil@philpotter.co.uk>

Status

Maintained

Files

Documentation/cdrom/ drivers/cdrom/cdrom.c include/linux/cdrom.h
include/uapi/linux/cdrom.h

UNIVERSAL FLASH STORAGE HOST CONTROLLER DRIVER

Reviewer

Alim Akhtar <alim.akhtar@samsung.com>, Avri Altman
<avri.altman@wdc.com>, Bart Van Assche <bvanassche@acm.org>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Files

Documentation/devicetree/bindings/ufs/ scsi/ufs drivers/ufs/core/

UNIVERSAL FLASH STORAGE HOST CONTROLLER DRIVER DWC HOOKS

Mail

Pedro Sousa <pedrom.sousa@synopsys.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Files

drivers/ufs/host/*dwc*

UNIVERSAL FLASH STORAGE HOST CONTROLLER DRIVER EXYNOS HOOKS

Mail

Alim Akhtar <alim.akhtar@samsung.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Maintained

Files

drivers/ufs/host/ufs-exynos*

UNIVERSAL FLASH STORAGE HOST CONTROLLER DRIVER MEDIATEK HOOKS

Mail

Peter Wang <peter.wang@mediatek.com>

Reviewer

Stanley Jhu <chu.stanley@gmail.com>

Mailing list

linux-scsi@vger.kernel.org, linux-mediatek@lists.infradead.org (moderated for
non-subscribers)

Status

Maintained

Files

drivers/ufs/host/ufs-mediatek*

UNIVERSAL FLASH STORAGE HOST CONTROLLER DRIVER QUALCOMM HOOKS

Mail

Manivannan Sadhasivam <manivannan.sadhasivam@linaro.org>

Mailing list

linux-arm-msm@vger.kernel.org, linux-scsi@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/ufs/qcom,ufs.yaml drivers/ufs/
host/ufs-qcom*

UNIVERSAL FLASH STORAGE HOST CONTROLLER DRIVER RENESAS HOOKS

Mail

Yoshihiro Shimoda <yoshihiro.shimoda.uh@renesas.com>

Mailing list

linux-renesas-soc@vger.kernel.org, linux-scsi@vger.kernel.org

Status

Maintained

Files

drivers/ufs/host/ufs-renesas.c

UNSORTED BLOCK IMAGES (UBI)

Mail

Richard Weinberger <richard@nod.at>

Mailing list

linux-mtd@lists.infradead.org

Status

Supported

Web-page

<http://www.linux-mtd.infradead.org/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/rw/ubifs.git](https://git.kernel.org/pub/scm/linux/kernel/git/rw/ubifs.git) next git
[git://git.kernel.org/pub/scm/linux/kernel/git/rw/ubifs.git](https://git.kernel.org/pub/scm/linux/kernel/git/rw/ubifs.git) fixes

Files

drivers/mtd/ubi/ include/linux/mtd/ubi.h include/uapi/mtd/ubi-user.h

USB "USBNET" DRIVER FRAMEWORK

Mail

Oliver Neukum <oneukum@suse.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Web-page

<http://www.linux-usb.org/usbnet>

Files

drivers/net/usb/usbnet.c include/linux/usb/usbnet.h

USB ACM DRIVER

Mail

Oliver Neukum <oneukum@suse.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

usb/acm drivers/usb/class/cdc-acm.*

USB APPLE MFI FASTCHARGE DRIVER

Mail

Bastien Nocera <hadess@hadess.net>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

drivers/usb/misc/apple-mfi-fastcharge.c

USB AR5523 WIRELESS DRIVER

Mailing list

linux-wireless@vger.kernel.org

Status

Orphan

Files

drivers/net/wireless/ath/ar5523/

USB ATTACHED SCSI

Mail

Oliver Neukum <oneukum@suse.com>

Mailing list

linux-usb@vger.kernel.org, linux-scsi@vger.kernel.org

Status

Maintained

Files

drivers/usb/storage/uas.c

USB CDC ETHERNET DRIVER

Mail

Oliver Neukum <oliver@neukum.org>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

drivers/net/usb/cdc_*.c include/uapi/linux/usb/cdc.h

USB CHAOSKEY DRIVER

Mail

Keith Packard <keithp@keithp.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

drivers/usb/misc/chaoskey.c

USB CYPRESS C67X00 DRIVER

Mailing list

linux-usb@vger.kernel.org

Status

Orphan

Files

drivers/usb/c67x00/

USB DAVICOM DM9601 DRIVER

Mail

Peter Korsgaard <peter@korsgaard.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Web-page

<http://www.linux-usb.org/usbnet>

Files

drivers/net/usb/dm9601.c

USB EHCI DRIVER

Mail

Alan Stern <stern@rowland.harvard.edu>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

usb/ehci drivers/usb/host/ehci*

USB HID/HIDBP DRIVERS (USB KEYBOARDS, MICE, REMOTE CONTROLS, ...)

Mail

Jiri Kosina <jikos@kernel.org>, Benjamin Tissoires <benjamin.tissoires@redhat.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/hid/hid.git](https://git.kernel.org/pub/scm/linux/kernel/git/hid/hid.git)

Files

hid/hiddev drivers/hid/usbhid/

USB INTEL XHCI ROLE MUX DRIVER**Mail**

Hans de Goede <hdegoede@redhat.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

drivers/usb/roles/intel-xhci-usb-role-switch.c

USB IP DRIVER FOR HISILICON KIRIN 960**Mail**

Yu Chen <chenyu56@huawei.com>, Binghui Wang <wang-binghui@hisilicon.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/phy/hisilicon,hi3660-usb3.yaml
drivers/phy/hisilicon/phy-hi3660-usb3.c

USB IP DRIVER FOR HISILICON KIRIN 970**Mail**

Mauro Carvalho Chehab <mchehab@kernel.org>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/phy/hisilicon,hi3670-usb3.yaml
drivers/phy/hisilicon/phy-hi3670-usb3.c

USB ISP116X DRIVER

Mail

Olav Kongas <ok@artecdesign.ee>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

drivers/usb/host/isp116x* include/linux/usb/isp116x.h

USB ISP1760 DRIVER

Mail

Rui Miguel Silva <rui.silva@linaro.org>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/usb/nxp,isp1760.yaml drivers/usb/isp1760/*

USB LAN78XX ETHERNET DRIVER

Mail

Woojung Huh <woojung.huh@microchip.com>, UNGLinux-Driver@microchip.com

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/microchip,lan78xx.txt drivers/net/usb/lan78xx.* include/dt-bindings/net/microchip-lan78xx.h

USB MASS STORAGE DRIVER

Mail

Alan Stern <stern@rowland.harvard.edu>

Mailing list

linux-usb@vger.kernel.org, usb-storage@lists.one-eyed-alien.net

Status

Maintained

Files

drivers/usb/storage/

USB MIDI DRIVER

Mail

Clemens Ladisch <clemens@ladisch.de>

Mailing list

alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

SCM

`git git://git.kernel.org/pub/scm/linux/kernel/git/tiwai/sound.git`

Files

sound/usb/midi.*

USB NETWORKING DRIVERS

Mailing list

linux-usb@vger.kernel.org

Status

Odd Fixes

Files

drivers/net/usb/

USB OHCI DRIVER

Mail

Alan Stern <stern@rowland.harvard.edu>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

usb/ohci drivers/usb/host/ohci*

USB OTG FSM (Finite State Machine)

Mail

Peter Chen <peter.chen@kernel.org>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/peter.chen/usb.git](https://git.kernel.org/pub/scm/linux/kernel/git/peter.chen/usb.git)

Files

drivers/usb/common/usb-otg-fsm.c

USB OVER IP DRIVER

Mail

Valentina Manea <valentina.manea.m@gmail.com>, Shuah Khan
<shuah@kernel.org>, Shuah Khan <skhan@linuxfoundation.org>

Reviewer

Hongren Zheng <i@zenithal.me>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

usb/usbip_protocol drivers/usb/usbip/ tools/testing/selftests/drivers/
usb/usbip/ tools/usb/usbip/

USB PEGASUS DRIVER

Mail

Petko Manolov <petkan@nucleusys.com>

Mailing list

linux-usb@vger.kernel.org, netdev@vger.kernel.org

Status

Maintained

Web-page

<https://github.com/petkan/pegasus>

SCM

git <https://github.com/petkan/pegasus.git>

Files

drivers/net/usb/pegasus.*

USB PRINTER DRIVER (usb_lp)

Mail

Pete Zaitcev <zaitcev@redhat.com>

Mailing list

linux-usb@vger.kernel.org

Status

Supported

Files

drivers/usb/class/usb_lp.c

USB QMI WWAN NETWORK DRIVER

Mail

Bjørn Mork <bjorn@mork.no>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-class-net-qmi drivers/net/usb/
qmi_wwan.c

USB RAW GADGET DRIVER

Reviewer

Andrey Konovalov <andreyknvl@gmail.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

usb/raw-gadget drivers/usb/gadget/legacy/raw_gadget.c include/uapi/
linux/usb/raw_gadget.h

USB RTL8150 DRIVER

Mail

Petko Manolov <petkan@nucleusys.com>

Mailing list

linux-usb@vger.kernel.org, netdev@vger.kernel.org

Status

Maintained

Web-page

<https://github.com/petkan/rtl8150>

SCM

git <https://github.com/petkan/rtl8150.git>

Files

drivers/net/usb/rtl8150.c

USB SERIAL SUBSYSTEM

Mail

Johan Hovold <johan@kernel.org>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/johan/usb-serial.git](https://git.kernel.org/pub/scm/linux/kernel/git/johan/usb-serial.git)

Files

usb/usb-serial drivers/usb/serial/ include/linux/usb/serial.h

USB SMSC75XX ETHERNET DRIVER

Mail

Steve Glendinning <steve.glendinning@shawell.net>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/usb/smsc75xx.*

USB SMSC95XX ETHERNET DRIVER

Mail

Steve Glendinning <steve.glendinning@shawell.net>, UNGLinux-
Driver@microchip.com

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/usb/smsc95xx.*

USB SUBSYSTEM

Mail

Greg Kroah-Hartman <gregkh@linuxfoundation.org>

Mailing list

linux-usb@vger.kernel.org

Status

Supported

Web-page

<http://www.linux-usb.org>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/gregkh/usb.git](https://git.kernel.org/pub/scm/linux/kernel/git/gregkh/usb.git)

Files

Documentation/devicetree/bindings/usb/ Documentation/usb/ drivers/
usb/ include/dt-bindings/usb/ include/linux/usb.h include/linux/usb/
include/uapi/linux/usb/

USB TYPEC BUS FOR ALTERNATE MODES

Mail

Heikki Krogerus <heikki.krogerus@linux.intel.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-bus-typec driver-api/usb/typec_bus
drivers/usb/typec/altmodes/ include/linux/usb/typec_altmode.h

USB TYPEC CLASS

Mail

Heikki Krogerus <heikki.krogerus@linux.intel.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-class-typec driver-api/usb/typec
drivers/usb/typec/ include/linux/usb/typec.h

USB TYPEC INTEL PMC MUX DRIVER

Mail

Heikki Krogerus <heikki.krogerus@linux.intel.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

firmware-guide/acpi/intel-pmc-mux drivers/usb/typec/mux/intel_pmc_mux.c

USB TYPEC PI3USB30532 MUX DRIVER

Mail

Hans de Goede <hdegoede@redhat.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

drivers/usb/typec/mux/pi3usb30532.c

USB TYPEC PORT CONTROLLER DRIVERS

Mailing list

linux-usb@vger.kernel.org

Status

Orphan

Files

drivers/usb/typec/tcpm/

USB UHCI DRIVER

Mail

Alan Stern <stern@rowland.harvard.edu>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

drivers/usb/host/uhci*

USB VIDEO CLASS

Mail

Laurent Pinchart <laurent.pinchart@ideasonboard.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<http://www.ideasonboard.org/uvic/>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/usb/uvic/ include/uapi/linux/uvicvideo.h

USB WEBCAM GADGET

Mail

Laurent Pinchart <laurent.pinchart@ideasonboard.com>, Daniel Scally
<dan.scally@ideasonboard.com>

Mailing list

linux-usb@vger.kernel.org

Status

Maintained

Files

drivers/usb/gadget/function/*uvic* drivers/usb/gadget/legacy/webcam.c
include/uapi/linux/usb/g_uvic.h

USB XHCI DRIVER

Mail

Mathias Nyman <mathias.nyman@intel.com>

Mailing list

linux-usb@vger.kernel.org

Status

Supported

Files

drivers/usb/host/pci-quirks* drivers/usb/host/xhci*

USER DATAGRAM PROTOCOL (UDP)

Mail

Willem de Bruijn <willemdebruijn.kernel@gmail.com>

Status

Maintained

Files

include/linux/udp.h net/ipv4/udp.c net/ipv6/udp.c

USER-MODE LINUX (UML)

Mail

Richard Weinberger <richard@nod.at>, Anton Ivanov <anton.ivanov@cambridgegreys.com>, Johannes Berg <johannes@sipsolutions.net>

Mailing list

linux-um@lists.infradead.org

Status

Maintained

Web-page

<http://user-mode-linux.sourceforge.net>

Patchwork

<https://patchwork.ozlabs.org/project/linux-um/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/uml/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/uml/linux.git) next git
[git://git.kernel.org/pub/scm/linux/kernel/git/uml/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/uml/linux.git) fixes

Files

Documentation/virt/uml/ arch/um/ arch/x86/um/ fs/hostfs/

USERSPACE COPYIN/COPYOUT (UIOVEC)

Mail

Alexander Viro <viro@zeniv.linux.org.uk>

Status

Maintained

Files

include/linux/uio.h lib/iov_iter.c

USERSPACE DMA BUFFER DRIVER

Mail

Gerd Hoffmann <kraxel@redhat.com>

Mailing list

dri-devel@lists.freedesktop.org

Status

Maintained

SCM

git [git://anongit.freedesktop.org/drm/drm-misc](https://anongit.freedesktop.org/drm/drm-misc)

Files

`drivers/dma-buf/udmabuf.c` `include/uapi/linux/udmabuf.h`

USERSPACE I/O (UIO)

Mail

Greg Kroah-Hartman <gregkh@linuxfoundation.org>

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/gregkh/char-misc.git](https://git.kernel.org/pub/scm/linux/kernel/git/gregkh/char-misc.git)

Files

`driver-api/uio-howto` `drivers/uio/` `include/linux/uio_driver.h`

UTIL-LINUX PACKAGE

Mail

Karel Zak <kzak@redhat.com>

Mailing list

util-linux@vger.kernel.org

Status

Maintained

Web-page

<http://en.wikipedia.org/wiki/Util-linux>

SCM

git [git://git.kernel.org/pub/scm/utils/util-linux/util-linux.git](https://git.kernel.org/pub/scm/utils/util-linux/util-linux.git)

UUID HELPERS

Reviewer

Andy Shevchenko <andriy.shevchenko@linux.intel.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

include/linux/uuid.h lib/test_uuid.c lib/uuid.c

UV SYSFS DRIVER

Mail

Justin Ernst <justin.ernst@hpe.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

drivers/platform/x86/uv_sysfs.c

UVESAFB DRIVER

Mail

Michal Januszewski <spock@gentoo.org>

Mailing list

linux-fbdev@vger.kernel.org

Status

Maintained

Web-page

<https://github.com/mjanusz/v86d>

Files

fb/uvesafb drivers/video/fbdev/uvesafb.*

Ux500 CLOCK DRIVERS

Mail

Ulf Hansson <ulf.hansson@linaro.org>

Mailing list

linux-clk@vger.kernel.org, linux-arm-kernel@lists.infradead.org (moderated for non-subscribers)

Status

Maintained

Files

drivers/clockdev/ux500/

V4L2 ASYNC AND FWNODE FRAMEWORKS

Mail

Sakari Ailus <sakari.ailus@linux.intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/v4l2-core/v4l2-async.c drivers/media/v4l2-core/
v4l2-fwnode.c include/media/v4l2-async.h include/media/v4l2-fwnode.h

V4L2 LENS DRIVERS

Mail

Sakari Ailus <sakari.ailus@linux.intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/i2c/ak* drivers/media/i2c/dw* drivers/media/i2c/lm*

V4L2 CAMERA SENSOR DRIVERS

Mail

Sakari Ailus <sakari.ailus@linux.intel.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

driver-api/media/camera-sensor driver-api/media/tx-rx drivers/media/i2c/ar*
drivers/media/i2c/gc* drivers/media/i2c/hi* drivers/media/i2c/imx*
drivers/media/i2c/mt* drivers/media/i2c/og* drivers/media/i2c/ov*
drivers/media/i2c/s5* drivers/media/i2c/st-vgxy61.c

VF610 NAND DRIVER

Mail

Stefan Agner <stefan@agner.ch>

Mailing list

linux-mtd@lists.infradead.org

Status

Supported

Files

drivers/mtd/nand/raw/vf610_nfc.c

VFAT/FAT/MSDOS FILESYSTEM

Mail

OGAWA Hirofumi <hirofumi@mail.parknet.co.jp>

Status

Maintained

Files

filesystems/vfat fs/fat/ tools/testing/selftests/filesystems/fat/

VFIO CDX DRIVER

Mail

Nipun Gupta <nipun.gupta@amd.com>, Nikhil Agarwal
<nikhil.agarwal@amd.com>

Mailing list

kvm@vger.kernel.org

Status

Maintained

Files

drivers/vfio/cdx/*

VFIO DRIVER

Mail

Alex Williamson <alex.williamson@redhat.com>

Mailing list

kvm@vger.kernel.org

Status

Maintained

SCM

git <https://github.com/awilliam/linux-vfio.git>

Files

Documentation/ABI/testing/debugfs-vfio Documentation/ABI/testing/
sysfs-devices-vfio-dev driver-api/vfio drivers/vfio/ include/linux/vfio.
h include/linux/vfio_pci_core.h include/uapi/linux/vfio.h

VFIO FSL-MC DRIVER

Mail

Diana Craciun <diana.craciun@oss.nxp.com>

Mailing list

kvm@vger.kernel.org

Status

Maintained

Files

drivers/vfio/fsl-mc/

VFIO HISILICON PCI DRIVER

Mail

Longfang Liu <liulongfang@huawei.com>, Shameer Kolothum <shameer-ali.kolothum.thodi@huawei.com>

Mailing list

kvm@vger.kernel.org

Status

Maintained

Files

drivers/vfio/pci/hisilicon/

VFIO MEDIATED DEVICE DRIVERS

Mail

Kirti Wankhede <kwankhede@nvidia.com>

Mailing list

kvm@vger.kernel.org

Status

Maintained

Files

driver-api/vfio-mediated-device drivers/vfio/mdev/ include/linux/mdev.h
samples/vfio-mdev/

VFIO MLX5 PCI DRIVER

Mail

Yishai Hadas <yishaih@nvidia.com>

Mailing list

kvm@vger.kernel.org

Status

Maintained

Files

drivers/vfio/pci/mlx5/

VFIO VIRTIO PCI DRIVER

Mail

Yishai Hadas <yishaih@nvidia.com>

Mailing list

kvm@vger.kernel.org, virtualization@lists.linux-foundation.org

Status

Maintained

Files

drivers/vfio/pci/virtio

VFIO PCI DEVICE SPECIFIC DRIVERS

Reviewer

Jason Gunthorpe <jgg@nvidia.com>, Yishai Hadas <yishaih@nvidia.com>, Shameer Kolothum <shameerali.kolothum.thodi@huawei.com>, Kevin Tian <kevin.tian@intel.com>

Mailing list

kvm@vger.kernel.org

Status

Maintained

P

driver-api/vfio-pci-device-specific-driver-acceptance

Files

drivers/vfio/pci/*/

VFIO PDS PCI DRIVER

Mail

Brett Creeley <brett.creeley@amd.com>

Mailing list

kvm@vger.kernel.org

Status

Maintained

Files

networking/device_drivers/ethernet/amd/pds_vfio_pci drivers/vfio/pci/pds/

VFIO PLATFORM DRIVER

Mail

Eric Auger <eric.auger@redhat.com>

Mailing list

kvm@vger.kernel.org

Status

Maintained

Files

drivers/vfio/platform/

VGA_SWITCHEROO

Reviewer

Lukas Wunner <lukas@wunner.de>

Status

Maintained

SCM

git git://anongit.freedesktop.org/drm/drm-misc

Files

gpu/vga-switcheroo drivers/gpu/vga/vga_switcheroo.c include/linux/
vga_switcheroo.h

VIA RHINE NETWORK DRIVER

Mail

Kevin Brace <kevinbrace@bracecomputerlab.com>

Status

Maintained

Files

drivers/net/ethernet/via/via-rhine.c

VIA SD/MMC CARD CONTROLLER DRIVER

Mail

Bruce Chang <brucechang@via.com.tw>, Harald Welte <Harald-Welte@viatech.com>

Status

Maintained

Files

`drivers/mmc/host/via-sdmmc.c`

VIA UNICHROME(PRO)/CHROME9 FRAMEBUFFER DRIVER

Mail

Florian Tobias Schandinat <FlorianSchandinat@gmx.de>

Mailing list

linux-fbdev@vger.kernel.org

Status

Maintained

Files

`drivers/video/fbdev/via/` `include/linux/via-core.h` `include/linux/via_i2c.h`

VIA VELOCITY NETWORK DRIVER

Mail

Francois Romieu <romieu@fr.zoreil.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

`drivers/net/ethernet/via/via-velocity.*`

VICODEC VIRTUAL CODEC DRIVER

Mail

Hans Verkuil <hverkuil-cisco@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/test-drivers/vicodec/*

VIDEO I2C POLLING DRIVER

Mail

Matt Ranostay <matt.ranostay@konsulko.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/i2c/video-i2c.c

VIDEO MULTIPLEXER DRIVER

Mail

Philipp Zabel <p.zabel@pengutronix.de>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/platform/video-mux.c

VIDEobuf2 FRAMEWORK

Mail

Tomasz Figa <tfiga@chromium.org>, Marek Szyprowski
<m.szyprowski@samsung.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

drivers/media/common/videobuf2/* include/media/videobuf2-*

VIDTV VIRTUAL DIGITAL TV DRIVER

Mail

Daniel W. S. Almeida <dwlsalmeida@gmail.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/test-drivers/vidtv/*

VIMC VIRTUAL MEDIA CONTROLLER DRIVER

Mail

Shuah Khan <skhan@linuxfoundation.org>

Reviewer

Kieran Bingham <kieran.bingham@ideasonboard.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/test-drivers/vimc/*

VIRT LIB

Mail

Alex Williamson <alex.williamson@redhat.com>, Paolo Bonzini
<pbonzini@redhat.com>

Mailing list

kvm@vger.kernel.org

Status

Supported

Files

virt/lib/

VIRTIO AND VHOST VSOCK DRIVER

Mail

Stefan Hajnoczi <stefanha@redhat.com>, Stefano Garzarella
<sgarzare@redhat.com>

Mailing list

kvm@vger.kernel.org, virtualization@lists.linux.dev, netdev@vger.kernel.org

Status

Maintained

Files

drivers/vhost/vsock.c include/linux/virtio_vsock.h include/uapi/
linux/virtio_vsock.h net/vmw_vsock/virtio_transport.c net/vmw_vsock/
virtio_transport_common.c

VIRTIO BALLOON

Mail

"Michael S. Tsirkin" <mst@redhat.com>, David Hildenbrand
<david@redhat.com>

Mailing list

virtualization@lists.linux.dev

Status

Maintained

Files

drivers/virtio/virtio_balloon.c include/linux/balloon_compaction.h
include/uapi/linux/virtio_balloon.h mm/balloon_compaction.c

VIRTIO BLOCK AND SCSI DRIVERS

Mail

"Michael S. Tsirkin" <mst@redhat.com>, Jason Wang <jasowang@redhat.com>

Reviewer

Paolo Bonzini <pbonzini@redhat.com>, Stefan Hajnoczi <stefanha@redhat.com>

Mailing list

virtualization@lists.linux.dev

Status

Maintained

Files

drivers/block/virtio_blk.c drivers/scsi/virtio_scsi.c include/uapi/
linux/virtio_blk.h include/uapi/linux/virtio_scsi.h

VIRTIO CONSOLE DRIVER

Mail

Amit Shah <amit@kernel.org>

Mailing list

virtualization@lists.linux.dev

Status

Maintained

Files

drivers/char/virtio_console.c include/uapi/linux/virtio_console.h

VIRTIO CORE AND NET DRIVERS

Mail

"Michael S. Tsirkin" <mst@redhat.com>, Jason Wang <jasowang@redhat.com>

Reviewer

Xuan Zhuo <xuanzhuo@linux.alibaba.com>

Mailing list

virtualization@lists.linux.dev

Status

Maintained

Files

Documentation/ABI/testing/sysfs-bus-vdpa Documentation/ABI/testing/sysfs-class-vduse Documentation/devicetree/bindings/virtio/ Documentation/driver-api/virtio/ drivers/block/virtio_blk.c drivers/crypto/virtio/ drivers/net/virtio_net.c drivers/vdpa/ drivers/virtio/ include/linux/vdpa.h include/linux/virtio*.h include/linux/vringh.h include/uapi/linux/virtio_*.h tools/virtio/

VIRTIO CRYPTO DRIVER

Mail

Gonglei <arei.gonglei@huawei.com>

Mailing list

virtualization@lists.linux.dev, linux-crypto@vger.kernel.org

Status

Maintained

Files

drivers/crypto/virtio/ include/uapi/linux/virtio_crypto.h

VIRTIO DRIVERS FOR S390

Mail

Cornelia Huck <cohuck@redhat.com>, Halil Pasic <pasic@linux.ibm.com>, Eric Farman <farman@linux.ibm.com>

Mailing list

linux-s390@vger.kernel.org, virtualization@lists.linux.dev, kvm@vger.kernel.org

Status

Supported

Files

arch/s390/include/uapi/asm/virtio-ccw.h drivers/s390/virtio/

VIRTIO FILE SYSTEM

Mail

Vivek Goyal <vgoyal@redhat.com>, Stefan Hajnoczi <stefanha@redhat.com>, Miklos Szeredi <miklos@szeredi.hu>

Mailing list

virtualization@lists.linux.dev, linux-fsdevel@vger.kernel.org

Status

Supported

Web-page

<https://virtio-fs.gitlab.io/>

Files

filesystems/virtiofs fs/fuse/virtio_fs.c include/uapi/linux/virtio_fs.h

VIRTIO GPIO DRIVER

Mail

Enrico Weigelt, metux IT consult <info@metux.net>, Viresh Kumar <vireshk@kernel.org>

Mailing list

linux-gpio@vger.kernel.org, virtualization@lists.linux.dev

Status

Maintained

Files

drivers/gpio/gpio-virtio.c include/uapi/linux/virtio_gpio.h

VIRTIO GPU DRIVER

Mail

David Airlie <airlied@redhat.com>, Gerd Hoffmann <kraxel@redhat.com>

Reviewer

Gurchetan Singh <gurchetansingh@chromium.org>, Chia-I Wu
<olvaffe@gmail.com>

Mailing list

dri-devel@lists.freedesktop.org, virtualization@lists.linux.dev

Status

Maintained

SCM

`git git://anongit.freedesktop.org/drm/drm-misc`

Files

`drivers/gpu/drm/ci/xfails/virtio*` `drivers/gpu/drm/virtio/` `include/`
`uapi/linux/virtio_gpu.h`

VIRTIO HOST (VHOST)

Mail

"Michael S. Tsirkin" <mst@redhat.com>, Jason Wang <jasowang@redhat.com>

Mailing list

kvm@vger.kernel.org, virtualization@lists.linux.dev, netdev@vger.kernel.org

Status

Maintained

SCM

`git git://git.kernel.org/pub/scm/linux/kernel/git/mst/vhost.git`

Files

`drivers/vhost/` `include/linux/sched/vhost_task.h` `include/linux/`
`vhost_iotlb.h` `include/uapi/linux/vhost.h` `kernel/vhost_task.c`

VIRTIO HOST (VHOST-SCSI)

Mail

"Michael S. Tsirkin" <mst@redhat.com>, Jason Wang <jasowang@redhat.com>,
Mike Christie <michael.christie@oracle.com>

Reviewer

Paolo Bonzini <pbonzini@redhat.com>, Stefan Hajnoczi <stefanha@redhat.com>

Mailing list

virtualization@lists.linux.dev

Status

Maintained

Files

drivers/vhost/scsi.c

VIRTIO I2C DRIVER

Mail

Conghui Chen <conghui.chen@intel.com>, Viresh Kumar
<viresh.kumar@linaro.org>

Mailing list

linux-i2c@vger.kernel.org, virtualization@lists.linux.dev

Status

Maintained

Files

drivers/i2c/busses/i2c-virtio.c include/uapi/linux/virtio_i2c.h

VIRTIO INPUT DRIVER

Mail

Gerd Hoffmann <kraxel@redhat.com>

Status

Maintained

Files

drivers/virtio/virtio_input.c include/uapi/linux/virtio_input.h

VIRTIO IOMMU DRIVER

Mail

Jean-Philippe Brucker <jean-philippe@linaro.org>

Mailing list

virtualization@lists.linux.dev

Status

Maintained

Files

drivers/iommu/virtio-iommu.c include/uapi/linux/virtio_iommu.h

VIRTIO MEM DRIVER

Mail

David Hildenbrand <david@redhat.com>

Mailing list

virtualization@lists.linux.dev

Status

Maintained

Web-page

<https://virtio-mem.gitlab.io/>

Files

drivers/virtio/virtio_mem.c include/uapi/linux/virtio_mem.h

VIRTIO PMEM DRIVER**Mail**

Pankaj Gupta <pankaj.gupta.linux@gmail.com>

Mailing list

virtualization@lists.linux.dev

Status

Maintained

Files

drivers/nvdimm/nd_virtio.c drivers/nvdimm/virtio_pmem.c

VIRTIO SOUND DRIVER**Mail**

Anton Yakovlev <anton.yakovlev@opensynergy.com>, "Michael S. Tsirkin"
<mst@redhat.com>

Mailing list

virtualization@lists.linux.dev, alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Maintained

Files

include/uapi/linux/virtio_snd.h sound/virtio/*

VIRTUAL BOX GUEST DEVICE DRIVER**Mail**

Hans de Goede <hdegoede@redhat.com>, Arnd Bergmann <arnd@arndb.de>,
Greg Kroah-Hartman <gregkh@linuxfoundation.org>

Status

Maintained

Files

drivers/virt/vboxguest/ include/linux/vbox_utils.h include/uapi/
linux/vbox*.h

VIRTUAL BOX SHARED FOLDER VFS DRIVER

Mail

Hans de Goede <hdegoede@redhat.com>

Mailing list

linux-fsdevel@vger.kernel.org

Status

Maintained

Files

fs/vboxsf/*

VIRTUAL PCM TEST DRIVER

Mail

Ivan Orlov <ivan.orlov0322@gmail.com>

Mailing list

linux-sound@vger.kernel.org

Status

Maintained

Files

sound/cards/pcmtest sound/drivers/pcmtest.c tools/testing/selftests/
alsa/test-pcmtest-driver.c

VIRTUAL SERIO DEVICE DRIVER

Mail

Stephen Chandler Paul <thatslyude@gmail.com>

Status

Maintained

Files

drivers/input/serio/userio.c include/uapi/linux/userio.h

VISHAY VEML6075 UVA AND UVB LIGHT SENSOR DRIVER

Mail

Javier Carrasco <javier.carrasco.cruz@gmail.com>

Status

Maintained

Files

Documentation/devicetree/bindings/iio/light/vishay,veml6075.yaml
drivers/iio/light/veml6075.c

VISL VIRTUAL STATELESS DECODER DRIVER

Mail

Daniel Almeida <daniel.almeida@collabora.com>

Mailing list

linux-media@vger.kernel.org

Status

Supported

Files

drivers/media/test-drivers/visl

VIVID VIRTUAL VIDEO DRIVER

Mail

Hans Verkuil <hverkuil@xs4all.nl>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

drivers/media/test-drivers/vivid/*

VM SOCKETS (AF_VSOCK)

Mail

Stefano Garzarella <sgarzare@redhat.com>

Mailing list

virtualization@lists.linux.dev, netdev@vger.kernel.org

Status

Maintained

Files

drivers/net/vsockmon.c include/net/af_vsock.h include/uapi/linux/
vm_sockets.h include/uapi/linux/vm_sockets_diag.h include/uapi/linux/
vsockmon.h net/vmw_vsock/ tools/testing/vsock/

VMALLOC

Mail

Andrew Morton <akpm@linux-foundation.org>

Reviewer

Uladzislau Rezki <urezki@gmail.com>, Christoph Hellwig
<hch@infradead.org>, Lorenzo Stoakes <lstoakes@gmail.com>

Mailing list

linux-mm@kvack.org

Status

Maintained

Web-page

<http://www.linux-mm.org>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/akpm/mm](https://git.kernel.org/pub/scm/linux/kernel/git/akpm/mm)

Files

include/linux/vmalloc.h mm/vmalloc.c

VME SUBSYSTEM

Mailing list

linux-kernel@vger.kernel.org

Status

Orphan

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/gregkh/char-misc.git](https://git.kernel.org/pub/scm/linux/kernel/git/gregkh/char-misc.git)

Files

driver-api/vme drivers/staging/vme_user/

VMWARE BALLOON DRIVER

Mail

Nadav Amit <namit@vmware.com>

Reviewer

VMware PV-Drivers Reviewers <pv-drivers@vmware.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

Files

drivers/misc/vmw_balloon.c

VMWARE HYPERVISOR INTERFACE

Mail

Ajay Kaher <akaher@vmware.com>, Alexey Makhlov
<amakhalov@vmware.com>

Reviewer

VMware PV-Drivers Reviewers <pv-drivers@vmware.com>

Mailing list

virtualization@lists.linux.dev, x86@kernel.org

Status

Supported

SCM

git git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git x86/vmware

Files

arch/x86/include/asm/vmware.h arch/x86/kernel/cpu/vmware.c

VMWARE PVRDMA DRIVER

Mail

Bryan Tan <bryantan@vmware.com>, Vishnu Dasa <vdasa@vmware.com>

Reviewer

VMware PV-Drivers Reviewers <pv-drivers@vmware.com>

Mailing list

linux-rdma@vger.kernel.org

Status

Supported

Files

drivers/infiniband/hw/vmw_pvrDMA/

VMWARE PVSCSI DRIVER

Mail

Vishal Bhakta <vbhakta@vmware.com>

Reviewer

VMware PV-Drivers Reviewers <pv-drivers@vmware.com>

Mailing list

linux-scsi@vger.kernel.org

Status

Supported

Files

drivers/scsi/vmw_pvscsi.c drivers/scsi/vmw_pvscsi.h

VMWARE VIRTUAL PTP CLOCK DRIVER

Mail

Jeff Sipek <jsipek@vmware.com>

Reviewer

Ajay Kaher <akaher@vmware.com>, Alexey Makhalov
<amakhalov@vmware.com>, VMware PV-Drivers Reviewers <pv-drivers@vmware.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/ptp/ptp_vmw.c

VMWARE VMCI DRIVER

Mail

Bryan Tan <bryantan@vmware.com>, Vishnu Dasa <vdasa@vmware.com>

Reviewer

VMware PV-Drivers Reviewers <pv-drivers@vmware.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

Files

drivers/misc/vmw_vmci/ include/linux/vmw_vmci*

VMWARE VMMOUSE SUBDRIVER

Mail

Zack Rusin <zack.rusin@broadcom.com>

Reviewer

Broadcom internal kernel review list <bcm-kernel-feedback-list@broadcom.com>

Mailing list

linux-input@vger.kernel.org

Status

Supported

Files

drivers/input/mouse/vmmouse.c drivers/input/mouse/vmmouse.h

VMWARE VMXNET3 ETHERNET DRIVER

Mail

Ronak Doshi <doshir@vmware.com>

Reviewer

VMware PV-Drivers Reviewers <pv-drivers@vmware.com>

Mailing list

netdev@vger.kernel.org

Status

Supported

Files

drivers/net/vmxnet3/

VMWARE VSOCK VMCI TRANSPORT DRIVER

Mail

Bryan Tan <bryantan@vmware.com>, Vishnu Dasa <vdasa@vmware.com>

Reviewer

VMware PV-Drivers Reviewers <pv-drivers@vmware.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

Files

net/vmw_vsock/vmci_transport*

VOCORE VOCORE2 BOARD

Mail

Harvey Hunt <harveyhuntnexus@gmail.com>

Mailing list

linux-mips@vger.kernel.org

Status

Maintained

Files

arch/mips/boot/dts/ralink/vocore2.dts

VOLTAGE AND CURRENT REGULATOR FRAMEWORK

Mail

Liam Girdwood <lgirdwood@gmail.com>, Mark Brown <broonie@kernel.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

Web-page

<http://www.slimlogic.co.uk/?p=48>

SCM

`git git://git.kernel.org/pub/scm/linux/kernel/git/broonie/regulator.git`

Files

Documentation/devicetree/bindings/regulator/ Documentation/power/
regulator/ drivers/regulator/ include/dt-bindings/regulator/ include/
linux/regulator/

Content regex

`regulator_get_optional`

VOLTAGE AND CURRENT REGULATOR IRQ HELPERS

Reviewer

Matti Vaittinen <mazziesaccount@gmail.com>

Files

`drivers/regulator/irq_helpers.c`

VRF

Mail

David Ahern <dsahern@kernel.org>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

`networking/vrf drivers/net/vrf.c`

VSPRINTF

Mail

Petr Mladek <pmladek@suse.com>, Steven Rostedt <rostedt@goodmis.org>

Reviewer

Andy Shevchenko <andriy.shevchenko@linux.intel.com>, Rasmus Villemoes <linux@rasmusvillemoes.dk>, Sergey Senozhatsky <senozhatsky@chromium.org>

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/printk/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/printk/linux.git)

Files

core-api/printk-formats lib/test_printf.c lib/test_scanf.c lib/vsprintf.c

VT1211 HARDWARE MONITOR DRIVER

Mail

Juerg Haefliger <juergh@proton.me>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/vt1211 drivers/hwmon/vt1211.c

VT8231 HARDWARE MONITOR DRIVER

Mail

Roger Lucas <vt8231@hiddenengine.co.uk>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

drivers/hwmon/vt8231.c

VUB300 USB to SDIO/SD/MMC bridge chip

Mailing list

linux-mmc@vger.kernel.org

Status

Orphan

Files

drivers/mmc/host/vub300.c

W1 DALLAS'S 1-WIRE BUS

Mail

Krzysztof Kozlowski <krzysztof.kozlowski@linaro.org>

Status

Maintained

Files

Documentation/devicetree/bindings/w1/ Documentation/w1/ drivers/w1/
include/linux/w1.h

W83791D HARDWARE MONITORING DRIVER

Mail

Marc Hulsman <m.hulsman@tudelft.nl>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/w83791d drivers/hwmon/w83791d.c

W83793 HARDWARE MONITORING DRIVER

Mail

Rudolf Marek <r.marek@assembler.cz>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

hwmon/w83793 drivers/hwmon/w83793.c

W83795 HARDWARE MONITORING DRIVER

Mail

Jean Delvare <jdelvare@suse.com>

Mailing list

linux-hwmon@vger.kernel.org

Status

Maintained

Files

drivers/hwmon/w83795.c

W83L51xD SD/MMC CARD INTERFACE DRIVER

Mail

Pierre Ossman <pierre@ossman.eu>

Status

Maintained

Files

drivers/mmc/host/wbsd.*

WACOM PROTOCOL 4 SERIAL TABLETS

Mail

Julian Squires <julian@cipht.net>, Hans de Goede <hdegoede@redhat.com>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/input/tablet/wacom_serial4.c

WANGXUN ETHERNET DRIVER

Mail

Jiawen Wu <jiawenwu@trustnetic.com>, Mengyuan Lou <mengyuanlou@net-swift.com>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Web-page

<https://www.net-swift.com>

Files

Documentation/networking/device_drivers/ethernet/wangxun/* drivers/
net/ethernet/wangxun/ drivers/net/pcs/pcs-xpcs-wx.c

WATCHDOG DEVICE DRIVERS

Mail

Wim Van Sebroeck <wim@linux-watchdog.org>, Guenter Roeck <linux@roeck-us.net>

Mailing list

linux-watchdog@vger.kernel.org

Status

Maintained

Web-page

<http://www.linux-watchdog.org/>

SCM

git [git://www.linux-watchdog.org/linux-watchdog.git](https://www.linux-watchdog.org/linux-watchdog.git)

Files

Documentation/devicetree/bindings/watchdog/ Documentation/watchdog/
drivers/watchdog/ include/linux/watchdog.h include/trace/events/
watchdog.h include/uapi/linux/watchdog.h

WAVE5 VPU CODEC DRIVER

Mail

Nas Chung <nas.chung@chipsnmedia.com>, Jackson Lee <jackson.lee@chipsnmedia.com>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/media/cnm,wave521c.yaml drivers/
media/platform/chips-media/wave5/

WHISKEYCOVE PMIC GPIO DRIVER

Mail

Kuppuswamy Sathyanarayanan <sathyanarayanan.kuppuswamy@linux.intel.com>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

drivers/gpio/gpio-wcove.c

WHWAVE RTC DRIVER**Mail**

Dianlong Li <long17.cool@163.com>

Mailing list

linux-rtc@vger.kernel.org

Status

Maintained

Files

drivers/rtc/rtc-sd3078.c

WIIMOTE HID DRIVER**Mail**

David Rheinsberg <david@readahead.eu>

Mailing list

linux-input@vger.kernel.org

Status

Maintained

Files

drivers/hid/hid-wiimote*

WILOCITY WIL6210 WIRELESS DRIVER**Mailing list**

linux-wireless@vger.kernel.org

Status

Orphan

Web-page

<https://wireless.wiki.kernel.org/en/users/Drivers/wil6210>

Files

drivers/net/wireless/ath/wil6210/

WINBOND CIR DRIVER

Mail

David Härdeman <david@hardeman.nu>

Status

Maintained

Files

`drivers/media/rc/winbond-cir.c`

WINSYSTEMS EBC-C384 WATCHDOG DRIVER

Mailing list

linux-watchdog@vger.kernel.org

Status

Orphan

Files

`drivers/watchdog/ebc-c384_wdt.c`

WINSYSTEMS WS16C48 GPIO DRIVER

Mail

William Breathitt Gray <william.gray@linaro.org>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

`drivers/gpio/gpio-ws16c48.c`

WIREGUARD SECURE NETWORK TUNNEL

Mail

Jason A. Donenfeld <Jason@zx2c4.com>

Mailing list

wireguard@lists.zx2c4.com, netdev@vger.kernel.org

Status

Maintained

Files

`drivers/net/wireguard/` `tools/testing/selftests/wireguard/`

WISTRON LAPTOP BUTTON DRIVER

Mail

Miloslav Trmac <mitr@volny.cz>

Status

Maintained

Files

drivers/input/misc/wistron_btnc.c

WMI BINARY MOF DRIVER

Mail

Armin Wolf <W_Armin@gmx.de>

Reviewer

Thomas Weißschuh <linux@weisssschuh.net>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/stable/sysfs-platform-wmi-bmof wmi/devices/wmi-bmof
drivers/platform/x86/wmi-bmof.c

WOLFSON MICROELECTRONICS DRIVERS

Mailing list

patches@opensource.cirrus.com

Status

Supported

Web-page

<https://github.com/CirrusLogic/linux-drivers/wiki>

SCM

git <https://github.com/CirrusLogic/linux-drivers.git>

Files

Documentation/devicetree/bindings/extcon/wlf,arizona.yaml
Documentation/devicetree/bindings/mfd/wlf,arizona.yaml
Documentation/devicetree/bindings/mfd/wm831x.txt Documentation/
devicetree/bindings/regulator/wlf,arizona.yaml Documentation/
devicetree/bindings/sound/wlf,*.yaml Documentation/devicetree/
bindings/sound/wm* Documentation/hwmon/wm83??-rst arch/arm/mach-s3c/
mach-crag6410* drivers/clk/clk-wm83*.c drivers/gpio/gpio-*wm*.c
drivers/gpio/gpio-arizona.c drivers/hwmon/wm83??-hwmon.c drivers/
input/misc/wm831x-on.c drivers/input/touchscreen/wm831x-ts.c drivers/
input/touchscreen/wm97*.c drivers/leds/leds-wm83*.c drivers/mfd/
arizona* drivers/mfd/cs47l24* drivers/mfd/wm*.c drivers/power/supply/

```
wm83*.c drivers/regulator/arizona* drivers/regulator/wm8*.c drivers/
rtc/rtc-wm83*.c drivers/video/backlight/wm83*_bl.c drivers/watchdog/
wm83*_wdt.c include/linux/mfd/arizona/ include/linux/mfd/wm831x/
include/linux/mfd/wm8350/ include/linux/mfd/wm8400* include/linux/
regulator/arizona* include/linux/wm97xx.h include/sound/wm????.h
sound/soc/codecs/arizona* sound/soc/codecs/cs47l24* sound/soc/codecs/
wm*
```

WORKQUEUE

Mail

Tejun Heo <tj@kernel.org>

Reviewer

Lai Jiangshan <jiangshanlai@gmail.com>

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tj/wq.git](https://git.kernel.org/pub/scm/linux/kernel/git/tj/wq.git)

Files

```
core-api/workqueue      include/linux/workqueue.h      kernel/workqueue.c
kernel/workqueue_internal.h
```

WWAN DRIVERS

Mail

Loic Poulain <loic.poulain@linaro.org>, Sergey Ryazanov
<ryazanov.s.a@gmail.com>

Reviewer

Johannes Berg <johannes@sipsolutions.net>

Mailing list

netdev@vger.kernel.org

Status

Maintained

Files

```
drivers/net/wwan/ include/linux/wwan.h include/uapi/linux/wwan.h
```

X-POWERS AXP288 PMIC DRIVERS

Mail

Hans de Goede <hdegoede@redhat.com>

Status

Maintained

Files

```
drivers/acpi/pmic/intel_pmic_xpower.c
```

Regex

axp288

X-POWERS MULTIFUNCTION PMIC DEVICE DRIVERS**Mail**Chen-Yu Tsai <wens@csie.org>**Mailing list**linux-kernel@vger.kernel.org**Status**

Maintained

Regex

axp[128]

X.25 STACK**Mail**Martin Schiller <ms@dev.tdt.de>**Mailing list**linux-x25@vger.kernel.org**Status**

Maintained

Files

networking/lapb-module Documentation/networking/x25* drivers/net/wan/
hdlc_x25.c drivers/net/wan/lapbether.c include/*/lapb.h include/net/
x25* include/uapi/linux/x25.h net/lapb/ net/x25/

X86 ARCHITECTURE (32-BIT AND 64-BIT)**Mail**

Thomas Gleixner <tglx@linutronix.de>, Ingo Molnar
<mingo@redhat.com>, Borislav Petkov <bp@alien8.de>, Dave Hansen
<dave.hansen@linux.intel.com>, x86@kernel.org

Reviewer"H. Peter Anvin" <hpa@zytor.com>**Mailing list**linux-kernel@vger.kernel.org**Status**

Maintained

SCMgit [git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git](https://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git) x86/core**Files**

Documentation/arch/x86/ Documentation/devicetree/bindings/x86/ arch/
x86/

X86 ENTRY CODE

Mail

Andy Lutomirski <luto@kernel.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

SCM

git git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git x86/asm

Files

arch/x86/entry/

X86 HARDWARE VULNERABILITIES

Mail

Thomas Gleixner <tglx@linutronix.de>, Borislav Petkov <bp@alien8.de>, Peter Zijlstra <peterz@infradead.org>, Josh Poimboeuf <jpoimboe@kernel.org>

Reviewer

Pawan Gupta <pawan.kumar.gupta@linux.intel.com>

Status

Maintained

Files

Documentation/admin-guide/hw-vuln/ arch/x86/include/asm/
nospec-branch.h arch/x86/kernel/cpu/bugs.c

X86 MCE INFRASTRUCTURE

Mail

Tony Luck <tony.luck@intel.com>, Borislav Petkov <bp@alien8.de>

Mailing list

linux-edac@vger.kernel.org

Status

Maintained

Files

Documentation/ABI/testing/sysfs-mce arch/x86/x86_64/machinecheck arch/
x86/kernel/cpu/mce/*

X86 MICROCODE UPDATE SUPPORT

Mail

Borislav Petkov <bp@alien8.de>

Status

Maintained

Files

arch/x86/kernel/cpu/microcode/*

X86 MM

Mail

Dave Hansen <dave.hansen@linux.intel.com>, Andy Lutomirski
<luto@kernel.org>, Peter Zijlstra <peterz@infradead.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git](https://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git) x86/mm

Files

arch/x86/mm/

X86 PLATFORM ANDROID TABLETS DSDT FIXUP DRIVER

Mail

Hans de Goede <hdegoede@redhat.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/pdx86/platform-drivers-x86.git](https://git.kernel.org/pub/scm/linux/kernel/git/pdx86/platform-drivers-x86.git)

Files

drivers/platform/x86/x86-android-tablets/

X86 PLATFORM DRIVERS

Mail

Hans de Goede <hdegoede@redhat.com>, Ilpo Järvinen
<ilpo.jarvinen@linux.intel.com>

Mailing list

platform-driver-x86@vger.kernel.org

Status

Maintained

Patchwork

<https://patchwork.kernel.org/project/platform-driver-x86/list/>

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/pdx86/platform-drivers-x86.git](https://git.kernel.org/pub/scm/linux/kernel/git/pdx86/platform-drivers-x86.git)

Files

drivers/platform/olpc/ drivers/platform/x86/ include/linux/
platform_data/x86/

X86 PLATFORM UV HPE SUPERDOME FLEX

Mail

Steve Wahl <steve.wahl@hpe.com>

Reviewer

Justin Ernst <justin.ernst@hpe.com>, Kyle Meyer <kyle.meyer@hpe.com>,
Dimitri Sivanich <dimitri.sivanich@hpe.com>, Russ Anderson
<russ.anderson@hpe.com>

Status

Supported

Files

arch/x86/include/asm/uv/ arch/x86/kernel/apic/x2apic_uv_x.c arch/x86/
platform/uv/

X86 STACK UNWINDING

Mail

Josh Poimboeuf <jpoimboe@kernel.org>, Peter Zijlstra <peterz@infradead.org>

Status

Supported

Files

arch/x86/include/asm/unwind*.h arch/x86/kernel/dumpstack.c arch/x86/
kernel/stacktrace.c arch/x86/kernel/unwind_*.c

X86 TRUST DOMAIN EXTENSIONS (TDX)

Mail

Kirill A. Shutemov <kirill.shutemov@linux.intel.com>

Reviewer

Dave Hansen <dave.hansen@linux.intel.com>

Mailing list

x86@kernel.org, linux-coco@lists.linux.dev

Status

Supported

SCM

`git git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git x86/tdx`

Files

`arch/x86/boot/compressed/tdx*` `arch/x86/coco/tdx/` `arch/x86/include/asm/shared/tdx.h` `arch/x86/include/asm/tdx.h` `arch/x86/virt/vmx/tdx/`
`drivers/virt/coco/tdx-guest`

X86 VDSO

Mail

Andy Lutomirski <luto@kernel.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

SCM

`git git://git.kernel.org/pub/scm/linux/kernel/git/tip/tip.git x86/vdso`

Files

`arch/x86/entry/vdso/`

XARRAY

Mail

Matthew Wilcox <willy@infradead.org>

Mailing list

linux-fsdevel@vger.kernel.org

Status

Supported

Files

`core-api/xarray` `include/linux/idr.h` `include/linux/xarray.h` `lib/idr.c`
`lib/xarray.c` `tools/testing/radix-tree`

XBOX DVD IR REMOTE

Mail

Benjamin Valentin <benpicco@gmail.com>

Status

Maintained

Files

drivers/media/rc/keymaps/rc-xbox-dvd.c drivers/media/rc/xbox_remote.c

XC2028/3028 TUNER DRIVER

Mail

Mauro Carvalho Chehab <mchehab@kernel.org>

Mailing list

linux-media@vger.kernel.org

Status

Maintained

Web-page

<https://linuxtv.org>

SCM

git git://linuxtv.org/media_tree.git

Files

drivers/media/tuners/xc2028.*

XDP (eXpress Data Path)

Mail

Alexei Starovoitov <ast@kernel.org>, Daniel Borkmann <daniel@iogearbox.net>, David S. Miller <davem@davemloft.net>, Jakub Kicinski <kuba@kernel.org>, Jesper Dangaard Brouer <hawk@kernel.org>, John Fastabend <john.fastabend@gmail.com>

Mailing list

netdev@vger.kernel.org, bpf@vger.kernel.org

Status

Supported

Files

drivers/net/ethernet/*/*/*/*xdp* drivers/net/ethernet/*/*/*xdp*
include/net/xdp.h include/net/xdp_priv.h include/trace/events/xdp.h
kernel/bpf/cpumap.c kernel/bpf/devmap.c net/core/xdp.c samples/bpf/
xdp* tools/testing/selftests/bpf/*/*xdp* tools/testing/selftests/
bpf/*xdp*

Content regex

(?:\b|_)xdp(?:\b|_)

XDP SOCKETS (AF_XDP)

Mail

Björn Töpel <bjorn@kernel.org>, Magnus Karlsson <magnus.karlsson@intel.com>, Maciej Fijalkowski <maciej.fijalkowski@intel.com>

Reviewer

Jonathan Lemon <jonathan.lemon@gmail.com>

Mailing list

netdev@vger.kernel.org, bpf@vger.kernel.org

Status

Maintained

Files

networking/af_xdp include/net/netns/xdp.h include/net/xdp_sock*
include/net/xsk_buff_pool.h include/uapi/linux/if_xdp.h include/
uapi/linux/xdp_diag.h net/xdp/ tools/testing/selftests/bpf/*xsk*

XEN BLOCK SUBSYSTEM

Mail

Roger Pau Monné <roger.pau@citrix.com>

Mailing list

xen-devel@lists.xenproject.org (moderated for non-subscribers)

Status

Supported

Files

drivers/block/xen* drivers/block/xen-blkback/*

XEN HYPERVISOR ARM

Mail

Stefano Stabellini <sstabellini@kernel.org>

Mailing list

xen-devel@lists.xenproject.org (moderated for non-subscribers)

Status

Maintained

Files

arch/arm/include/asm/xen/ arch/arm/xen/

XEN HYPERVISOR ARM64

Mail

Stefano Stabellini <sstabellini@kernel.org>

Mailing list

xen-devel@lists.xenproject.org (moderated for non-subscribers)

Status

Maintained

Files

arch/arm64/include/asm/xen/ arch/arm64/xen/

XEN HYPERVISOR INTERFACE

Mail

Juergen Gross <jgross@suse.com>, Stefano Stabellini <sstabellini@kernel.org>

Reviewer

Oleksandr Tyshchenko <oleksandr_tyshchenko@epam.com>

Mailing list

xen-devel@lists.xenproject.org (moderated for non-subscribers)

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/xen/tip.git](https://git.kernel.org/pub/scm/linux/kernel/git/xen/tip.git)

Files

Documentation/ABI/stable/sysfs-hypervisor-xen Documentation/ABI/testing/sysfs-hypervisor-xen drivers/*/xen-*front.c drivers/xen/include/uapi/xen/ include/xen/ kernel/configs/xen.config

XEN HYPERVISOR X86

Mail

Juergen Gross <jgross@suse.com>

Reviewer

Boris Ostrovsky <boris.ostrovsky@oracle.com>

Mailing list

xen-devel@lists.xenproject.org (moderated for non-subscribers)

Status

Supported

Files

arch/x86/configs/xen.config arch/x86/include/asm/pvclock-abi.h arch/x86/include/asm/xen/ arch/x86/platform/pvh/ arch/x86/xen/

XEN NETWORK BACKEND DRIVER

Mail

Wei Liu <wei.liu@kernel.org>, Paul Durrant <paul@xen.org>

Mailing list

xen-devel@lists.xenproject.org (moderated for non-subscribers), net-dev@vger.kernel.org

Status

Supported

Files

drivers/net/xen-netback/*

XEN PCI SUBSYSTEM

Mail

Juergen Gross <jgross@suse.com>

Mailing list

xen-devel@lists.xenproject.org (moderated for non-subscribers)

Status

Supported

Files

arch/x86/pci/*xen* drivers/pci/*xen*

XEN PVSCSI DRIVERS

Mail

Juergen Gross <jgross@suse.com>

Mailing list

xen-devel@lists.xenproject.org (moderated for non-subscribers), linux-scsi@vger.kernel.org

Status

Supported

Files

drivers/scsi/xen-scsifront.c drivers/xen/xen-scsiback.c include/xen/interface/io/vscsiif.h

XEN PVUSB DRIVER

Mail

Juergen Gross <jgross@suse.com>

Mailing list

xen-devel@lists.xenproject.org (moderated for non-subscribers), linux-usb@vger.kernel.org

Status

Supported

Files

drivers/usb/host/xen* include/xen/interface/io/usbif.h

XEN SOUND FRONTEND DRIVER

Mail

Oleksandr Andrushchenko <oleksandr_andrushchenko@epam.com>

Mailing list

xen-devel@lists.xenproject.org (moderated for non-subscribers), alsa-devel@alsa-project.org (moderated for non-subscribers)

Status

Supported

Files

sound/xen/*

XEN SWIOTLB SUBSYSTEM

Mail

Juergen Gross <jgross@suse.com>, Stefano Stabellini <sstabellini@kernel.org>

Mailing list

xen-devel@lists.xenproject.org (moderated for non-subscribers), iommu@lists.linux.dev

Status

Supported

Files

arch/*/include/asm/xen/swiotlb-xen.h drivers/xen/swiotlb-xen.c
include/xen/arm/swiotlb-xen.h include/xen/swiotlb-xen.h

XFS FILESYSTEM

Mail

Chandan Babu R <chandan.babu@oracle.com>

Reviewer

Darrick J. Wong <djwong@kernel.org>

Mailing list

linux-xfs@vger.kernel.org

Status

Supported

Web-page

<http://xfs.org/>

chat

<irc://irc.oftc.net/xfs>

SCM

git [git://git.kernel.org/pub/scm/fs/xfs/xfs-linux.git](https://git.kernel.org/pub/scm/fs/xfs/xfs-linux.git)

P

filesystems/xfs/xfs-maintainer-entry-profile

Files

Documentation/ABI/testing/sysfs-fs-xfs admin-guide/xfs Documentation/
filesystems/xfs/* fs/xfs/ include/uapi/linux/dqblk_xfs.h include/
uapi/linux/fsmap.h

XILINX AMS DRIVER

Mail

Anand Ashok Dumbre <anand.ashok.dumbre@xilinx.com>

Mailing list

linux-iio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/iio/adc/xlnx,zynqmp-ams.yaml
drivers/iio/adc/xilinx-ams.c

XILINX AXI ETHERNET DRIVER

Mail

Radhey Shyam Pandey <radhey.shyam.pandey@amd.com>

Status

Maintained

Files

Documentation/devicetree/bindings/net/xlnx,axi-ethernet.yaml
drivers/net/ethernet/xilinx/xilinx_axienet*

XILINX CAN DRIVER

Mail

Appana Durga Kedareswara rao <appana.durga.rao@xilinx.com>

Reviewer

Naga Sureshkumar Relli <naga.sureshkumar.relli@xilinx.com>

Mailing list

linux-can@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/net/can/xilinx,can.yaml drivers/
net/can/xilinx_can.c

XILINX EVENT MANAGEMENT DRIVER

Mail

Abhyuday Godhasara <abhyuday.godhasara@xilinx.com>

Status

Maintained

Files

drivers/soc/xilinx/xlnx_event_manager.c include/linux/firmware/
xlnx-event-manager.h

XILINX GPIO DRIVER

Mail

Shubhrajyoti Datta <shubhrajyoti.datta@amd.com>

Reviewer

Srinivas Neeli <srinivas.neeli@amd.com>, Michal Simek
<michal.simek@amd.com>

Status

Maintained

Files

Documentation/devicetree/bindings/gpio/gpio-zynq.yaml Documentation/
devicetree/bindings/gpio/xlnx,gpio-xilinx.yaml drivers/gpio/
gpio-xilinx.c drivers/gpio/gpio-zynq.c

XILINX LL TEMAC ETHERNET DRIVER

Mailing list

netdev@vger.kernel.org

Status

Orphan

Files

drivers/net/ethernet/xilinx/ll_temac*

XILINX PWM DRIVER

Mail

Sean Anderson <sean.anderson@seco.com>

Status

Maintained

Files

drivers/pwm/pwm-xilinx.c include/clocksource/timer-xilinx.h

XILINX SD-FEC IP CORES

Mail

Derek Kiernan <derek.kiernan@amd.com>, Dragan Cvetic <dragan.cvetic@amd.com>

Status

Maintained

Files

Documentation/devicetree/bindings/misc/xlnx,sd-fec.txt misc-
devices/xilinx_sdfec drivers/misc/Kconfig drivers/misc/Makefile drivers/
misc/xilinx_sdfec.c include/uapi/misc/xilinx_sdfec.h

XILINX UARTLITE SERIAL DRIVER

Mail

Peter Korsgaard <jacmet@sunsite.dk>

Mailing list

linux-serial@vger.kernel.org

Status

Maintained

Files

drivers/tty/serial/uartlite.c

XILINX VIDEO IP CORES

Mail

Laurent Pinchart <laurent.pinchart@ideasonboard.com>

Mailing list

linux-media@vger.kernel.org

Status

Supported

SCM

git [git://linuxtv.org/media_tree.git](https://linuxtv.org/media_tree.git)

Files

Documentation/devicetree/bindings/media/xilinx/ drivers/media/
platform/xilinx/ include/uapi/linux/xilinx-v4l2-controls.h

XILINX VERSAL EDAC DRIVER

Mail

Shubhrajyoti Datta <shubhrajyoti.datta@amd.com>, Sai Krishna Potthuri
<sai.krishna.potthuri@amd.com>

Status

Maintained

Files

Documentation/devicetree/bindings/memory-controllers/xlnx,
versal-ddrmc-edac.yaml drivers/edac/versal_edac.c

XILINX WATCHDOG DRIVER

Mail

Srinivas Neeli <srinivas.neeli@amd.com>

Reviewer

Shubhrajyoti Datta <shubhrajyoti.datta@amd.com>, Michal Simek
<michal.simek@amd.com>

Status

Maintained

Files

Documentation/devicetree/bindings/watchdog/xlnx,versal-wwdt.yaml
Documentation/devicetree/bindings/watchdog/xlnx,xps-timebase-wdt.
yaml drivers/watchdog/of_xilinx_wdt.c drivers/watchdog/xilinx_wwdt.c

XILINX XDMA DRIVER

Mail

Lizhi Hou <lizhi.hou@amd.com>, Brian Xu <brian.xu@amd.com>, Raj Kumar Rampelli <raj.kumar.rampelli@amd.com>

Mailing list

dmaengine@vger.kernel.org

Status

Supported

Files

`drivers/dma/xilinx/xdma-regs.h` `drivers/dma/xilinx/xdma.c` `include/linux/dma/amd_xdma.h` `include/linux/platform_data/amd_xdma.h`

XILINX ZYNQMP DPDMA DRIVER

Mail

Laurent Pinchart <laurent.pinchart@ideasonboard.com>

Mailing list

dmaengine@vger.kernel.org

Status

Supported

Files

`Documentation/devicetree/bindings/dma/xilinx/xlnx,zynqmp-dpdma.yaml` `drivers/dma/xilinx/xilinx_dpdma.c` `include/dt-bindings/dma/xlnx-zynqmp-dpdma.h`

XILINX ZYNQMP OCM EDAC DRIVER

Mail

Shubhrajyoti Datta <shubhrajyoti.datta@amd.com>, Sai Krishna Potthuri <sai.krishna.potthuri@amd.com>

Status

Maintained

Files

`Documentation/devicetree/bindings/memory-controllers/xlnx,zynqmp-ocmc-1.0.yaml` `drivers/edac/zynqmp_edac.c`

XILINX ZYNQMP PSGTR PHY DRIVER

Mail

Laurent Pinchart <laurent.pinchart@ideasonboard.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

SCM

git <https://github.com/Xilinx/linux-xlnx.git>

Files

Documentation/devicetree/bindings/phy/xlnx,zynqmp-psgtr.yaml
drivers/phy/xilinx/phy-zynqmp.c

XILINX ZYNQMP SHA3 DRIVER

Mail

Harsha <harsha.harsha@amd.com>

Status

Maintained

Files

drivers/crypto/xilinx/zynqmp-sha.c

XILLYBUS DRIVER

Mail

Eli Billauer <eli.billauer@gmail.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Supported

Files

drivers/char/xillybus/

XLP9XX I2C DRIVER

Mail

George Cherian <gcherian@marvell.com>

Mailing list

linux-i2c@vger.kernel.org

Status

Supported

Web-page

<http://www.marvell.com>

Files

drivers/i2c/busses/i2c-xlp9xx.c

XRA1403 GPIO EXPANDER

Mail

Nandor Han <nandor.han@ge.com>

Mailing list

linux-gpio@vger.kernel.org

Status

Maintained

Files

Documentation/devicetree/bindings/gpio/gpio-xra1403.txt drivers/
gpio/gpio-xra1403.c

XTENSA XTFPGA PLATFORM SUPPORT

Mail

Max Filippov <jcmvbkbc@gmail.com>

Status

Maintained

Files

drivers/spi/spi-xtensa-xfpga.c sound/soc/xtensa/xfpga-i2s.c

YAM DRIVER FOR AX.25

Mail

Jean-Paul Roubelat <jpr@f6fbb.org>

Mailing list

linux-hams@vger.kernel.org

Status

Maintained

Files

drivers/net/hamradio/yam* include/linux/yam.h

YAMA SECURITY MODULE

Mail

Kees Cook <keescook@chromium.org>

Status

Supported

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/kees/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/kees/linux.git) for-next/hardening

Files

admin-guide/LSM/Yama security/yama/

YEALINK PHONE DRIVER

Mail

Henk Vergonet <Henk.Vergonet@gmail.com>

Mailing list

usbb2k-api-dev@nongnu.org

Status

Maintained

Files

input/devices/yealink drivers/input/misc/yealink.*

Z3FOLD COMPRESSED PAGE ALLOCATOR

Mail

Vitaly Wool <vitaly.wool@konsulko.com>

Reviewer

Miaohe Lin <linmiaohe@huawei.com>

Mailing list

linux-mm@kvack.org

Status

Maintained

Files

mm/z3fold.c

Z8530 DRIVER FOR AX.25

Mail

Joerg Reuter <jreuter@yaina.de>

Mailing list

linux-hams@vger.kernel.org

Status

Maintained

Web-page

<http://yaina.de/jreuter/> <http://www.qsl.net/dl1bke/>

Files

networking/device_drivers/hamradio/z8530drv drivers/net/hamradio/*scc.c
drivers/net/hamradio/z8530.h

ZBUD COMPRESSED PAGE ALLOCATOR**Mail**

Seth Jennings <sjenning@redhat.com>, Dan Streetman <ddstreet@ieee.org>

Mailing list

linux-mm@kvack.org

Status

Maintained

Files

mm/zbud.c

ZD1211RW WIRELESS DRIVER**Mailing list**

linux-wireless@vger.kernel.org

Status

Orphan

Files

drivers/net/wireless/zydass/zd1211rw/

ZD1301 MEDIA DRIVER**Mailing list**

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org/>

Patchwork

<https://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/usb/dvb-usb-v2/zd1301*

ZD1301_DEMOD MEDIA DRIVER

Mailing list

linux-media@vger.kernel.org

Status

Orphan

Web-page

<https://linuxtv.org/>

Patchwork

<https://patchwork.linuxtv.org/project/linux-media/list/>

Files

drivers/media/dvb-frontends/zd1301_demod*

ZHAOXIN PROCESSOR SUPPORT

Mail

Tony W Wang-oc <TonyWWang-oc@zhaoxin.com>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

arch/x86/kernel/cpu/zhaoxin.c

ZONEFS FILESYSTEM

Mail

Damien Le Moal <dlemoal@kernel.org>, Naohiro Aota <naohiro.aota@wdc.com>

Reviewer

Johannes Thumshirn <jth@kernel.org>

Mailing list

linux-fsdevel@vger.kernel.org

Status

Maintained

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/dlemoal/zonefs.git](https://git.kernel.org/pub/scm/linux/kernel/git/dlemoal/zonefs.git)

Files

filesystems/zonefs fs/zonefs/

ZR36067 VIDEO FOR LINUX DRIVER

Mail

Corentin Labbe <clabbe@baylibre.com>

Mailing list

mjpeg-users@lists.sourceforge.net, linux-media@vger.kernel.org

Status

Maintained

Web-page

<http://mjpeg.sourceforge.net/driver-zoran/>

Patchwork

<https://patchwork.linuxtv.org/project/linux-media/list/>

Files

driver-api/media/drivers/zoran drivers/media/pci/zoran/

ZRAM COMPRESSED RAM BLOCK DEVICE DRVIER

Mail

Minchan Kim <minchan@kernel.org>, Sergey Senozhatsky
<senozhatsky@chromium.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Maintained

Files

admin-guide/blockdev/zram drivers/block/zram/

ZS DECSTATION Z85C30 SERIAL DRIVER

Mail

"Maciej W. Rozycki" <macro@orcam.me.uk>

Status

Maintained

Files

drivers/tty/serial/zs.*

ZSMALLOC COMPRESSED SLAB MEMORY ALLOCATOR

Mail

Minchan Kim <minchan@kernel.org>, Sergey Senozhatsky
<senozhatsky@chromium.org>

Mailing list

linux-mm@kvack.org

Status

Maintained

Files

mm/zsmalloc include/linux/zsmalloc.h mm/zsmalloc.c

ZSTD

Mail

Nick Terrell <terrelln@fb.com>

Status

Maintained

bugs

<https://github.com/facebook/zstd/issues>

SCM

git <https://github.com/terrelln/linux.git>

Files

crypto/zstd.c include/linux/zstd* lib/decompress_unzstd.c lib/zstd/

Regex

zstd

Content regex

zstd

ZSWAP COMPRESSED SWAP CACHING

Mail

Johannes Weiner <hannes@cmpxchg.org>, Yosry Ahmed <yosryahmed@google.com>, Nhat Pham <nphamcs@gmail.com>

Mailing list

linux-mm@kvack.org

Status

Maintained

Files

admin-guide/mm/zswap include/linux/zpool.h include/linux/zswap.h mm/
zpool.c mm/zswap.c

THE REST

Mail

Linus Torvalds <torvalds@linux-foundation.org>

Mailing list

linux-kernel@vger.kernel.org

Status

Buried alive in reporters

SCM

git [git://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git](https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git)

Files

* */

OTHER MATERIAL

Here are some other guides to the community that are of interest to most developers:

*** Index of Further Kernel Documentation**

The need for a document like this one became apparent in the linux-kernel mailing list as the same questions, asking for pointers to information, appeared again and again.

Fortunately, as more and more people get to GNU/Linux, more and more get interested in the Kernel. But reading the sources is not always enough. It is easy to understand the code, but miss the concepts, the philosophy and design decisions behind this code.

Unfortunately, not many documents are available for beginners to start. And, even if they exist, there was no "well-known" place which kept track of them. These lines try to cover this lack.

PLEASE, if you know any paper not listed here or write a new document, include a reference to it here, following the kernel's patch submission process. Any corrections, ideas or comments are also welcome.

All documents are cataloged with the following fields: the document's "Title", the "Author"/s, the "URL" where they can be found, some "Keywords" helpful when searching for specific topics, and a brief "Description" of the Document.

Note: The documents on each section of this document are ordered by its published date, from the newest to the oldest. The maintainer(s) should periodically retire resources as they become obsolete or outdated; with the exception of foundational books.

*** Docs at the Linux Kernel tree**

The Sphinx books should be built with `make {htmldocs | pdfdocs | epubdocs}`.

- Name: **linux/Documentation**

Author

Many.

Location

Documentation/

Keywords

text files, Sphinx.

Description

Documentation that comes with the kernel sources, inside the Documentation directory. Some pages from this document (including this document itself) have been moved there, and might be more up to date than the web version.

* On-line docs

- Title: **Linux Kernel Mailing List Glossary**

Author

various

URL

<https://kernelnewbies.org/KernelGlossary>

Date

rolling version

Keywords

glossary, terms, linux-kernel.

Description

From the introduction: "This glossary is intended as a brief description of some of the acronyms and terms you may hear during discussion of the Linux kernel".

- Title: **The Linux Kernel Module Programming Guide**

Author

Peter Jay Salzman, Michael Burian, Ori Pomerantz, Bob Mottram, Jim Huang.

URL

<https://sysprog21.github.io/lkmpg/>

Date

2021

Keywords

modules, GPL book, /proc, ioctls, system calls, interrupt handlers .

Description

A very nice GPL book on the topic of modules programming. Lots of examples. Currently the new version is being actively maintained at <https://github.com/sysprog21/lkmpg>.

* Published books

- Title: **Linux Kernel Debugging: Leverage proven tools and advanced techniques to effectively debug Linux kernels and kernel modules**

Author

Kaiwan N Billimoria

Publisher

Packt Publishing Ltd

Date

August, 2022

Pages

638

ISBN

978-1801075039

Notes

Debugging book

- Title: **Linux Kernel Programming: A Comprehensive Guide to Kernel Internals, Writing Kernel Modules, and Kernel Synchronization**

Author

Kaiwan N Billimoria

Publisher

Packt Publishing Ltd

Date

March, 2021

Pages

754

ISBN

978-1789953435

- Title: **Linux Kernel Programming Part 2 - Char Device Drivers and Kernel Synchronization: Create user-kernel interfaces, work with peripheral I/O, and handle hardware interrupts**

Author

Kaiwan N Billimoria

Publisher

Packt Publishing Ltd

Date

March, 2021

Pages

452

ISBN

978-1801079518

- Title: **Linux System Programming: Talking Directly to the Kernel and C Library**

Author

Robert Love

Publisher

O'Reilly Media

Date

June, 2013

Pages

456

ISBN

978-1449339531

Notes

Foundational book

- Title: **Linux Kernel Development, 3rd Edition**

Author

Robert Love

Publisher

Addison-Wesley

Date

July, 2010

Pages

440

ISBN

978-0672329463

Notes

Foundational book

- Title: **Practical Linux System Administration: A Guide to Installation, Configuration, and Management, 1st Edition**

Author

Kenneth Hess

Publisher

O'Reilly Media

Date

May, 2023

Pages

246

ISBN

978-1098109035

Notes

System administration

- Title: **Linux Device Drivers, 3rd Edition**

Authors

Jonathan Corbet, Alessandro Rubini, and Greg Kroah-Hartman

Publisher

O'Reilly & Associates

Date

2005

Pages

636

ISBN

0-596-00590-3

Notes

Foundational book. Further information in <http://www.oreilly.com/catalog/linuxdrive3/> PDF format, URL: <https://lwn.net/Kernel/LDD3/>

- Title: **The Design of the UNIX Operating System**

Author

Maurice J. Bach

Publisher

Prentice Hall

Date

1986

Pages

471

ISBN

0-13-201757-1

Notes

Foundational book

*** Miscellaneous**

- Name: **Cross-Referencing Linux**

URL<https://elixir.bootlin.com/>**Keywords**

Browsing source code.

Description

Another web-based Linux kernel source code browser. Lots of cross references to variables and functions. You can see where they are defined and where they are used.

- Name: **Linux Weekly News**

URL<https://lwn.net>**Keywords**

latest kernel news.

Description

The title says it all. There's a fixed kernel section summarizing developers' work, bug fixes, new features and versions produced during the week.

- Name: **The home page of Linux-MM**

Author

The Linux-MM team.

URL

<https://linux-mm.org/>

Keywords

memory management, Linux-MM, mm patches, TODO, docs, mailing list.

Description

Site devoted to Linux Memory Management development. Memory related patches, HOWTOs, links, mm developers... Don't miss it if you are interested in memory management development!

- Name: **Kernel Newbies IRC Channel and Website**

URL

<https://www.kernelnewbies.org>

Keywords

IRC, newbies, channel, asking doubts.

Description

#kernelnewbies on irc.oftc.net. #kernelnewbies is an IRC network dedicated to the 'newbie' kernel hacker. The audience mostly consists of people who are learning about the kernel, working on kernel projects or professional kernel hackers that want to help less seasoned kernel people. #kernelnewbies is on the OFTC IRC Network. Try irc.oftc.net as your server and then /join #kernelnewbies. The kernelnewbies website also hosts articles, documents, FAQs...

- Name: **linux-kernel mailing list archives and search engines**

URL

<http://vger.kernel.org/vger-lists.html>

URL

<http://www.uwsg.indiana.edu/hypertext/linux/kernel/index.html>

URL

<http://groups.google.com/group/mlist.linux.kernel>

Keywords

linux-kernel, archives, search.

Description

Some of the linux-kernel mailing list archivers. If you have a better/another one, please let me know.

This document was originally based on:

<https://www.dit.upm.es/~jmsejas/linux/kernel/hackers-docs.html>

and written by Juan-Mariano de Goyeneche

* **Deprecated Interfaces, Language Features, Attributes, and Conventions**

In a perfect world, it would be possible to convert all instances of some deprecated API into the new API and entirely remove the old API in a single development cycle. However, due to the size of the kernel, the maintainership hierarchy, and timing, it's not always feasible to do these kinds of conversions at once. This means that new instances may sneak into the kernel while old ones are being removed, only making the amount of work to remove the API grow. In order to educate developers about what has been deprecated and why, this list has been created as a place to point when uses of deprecated things are proposed for inclusion in the kernel.

* **`__deprecated`**

While this attribute does visually mark an interface as deprecated, it **does not produce warnings during builds any more** because one of the standing goals of the kernel is to build without warnings and no one was actually doing anything to remove these deprecated interfaces. While using `__deprecated` is nice to note an old API in a header file, it isn't the full solution. Such interfaces must either be fully removed from the kernel, or added to this file to discourage others from using them in the future.

* **`BUG()` and `BUG_ON()`**

Use `WARN()` and `WARN_ON()` instead, and handle the "impossible" error condition as gracefully as possible. While the `BUG()`-family of APIs were originally designed to act as an "impossible situation" assert and to kill a kernel thread "safely", they turn out to just be too risky. (e.g. "In what order do locks need to be released? Have various states been restored?") Very commonly, using `BUG()` will destabilize a system or entirely break it, which makes it impossible to debug or even get viable crash reports. Linus has **very strong feelings about this**.

Note that the `WARN()`-family should only be used for "expected to be unreachable" situations. If you want to warn about "reachable but undesirable" situations, please use the `pr_warn()`-family of functions. System owners may have set the `panic_on_warn` sysctl, to make sure their systems do not continue running in the face of "unreachable" conditions. (For example, see commits like [this one](#).)

* **open-coded arithmetic in allocator arguments**

Dynamic size calculations (especially multiplication) should not be performed in memory allocator (or similar) function arguments due to the risk of them overflowing. This could lead to values wrapping around and a smaller allocation being made than the caller was expecting. Using those allocations could lead to linear overflows of heap memory and other misbehaviors. (One exception to this is literal values where the compiler can warn if they might overflow. However, the preferred way in these cases is to refactor the code as suggested below to avoid the open-coded arithmetic.)

For example, do not use `count * size` as an argument, as in:

```
foo = kmalloc(count * size, GFP_KERNEL);
```

Instead, the 2-factor form of the allocator should be used:

```
foo = kmalloc_array(count, size, GFP_KERNEL);
```

Specifically, `kmalloc()` can be replaced with `kmalloc_array()`, and `kzalloc()` can be replaced with `kccalloc()`.

If no 2-factor form is available, the saturate-on-overflow helpers should be used:

```
bar = dma_alloc_coherent(dev, array_size(count, size), &dma, GFP_KERNEL);
```

Another common case to avoid is calculating the size of a structure with a trailing array of others structures, as in:

```
header = kzalloc(sizeof(*header) + count * sizeof(*header->item),  
                GFP_KERNEL);
```

Instead, use the helper:

```
header = kzalloc(struct_size(header, item, count), GFP_KERNEL);
```

Note: If you are using `struct_size()` on a structure containing a zero-length or a one-element array as a trailing array member, please refactor such array usage and switch to a *flexible array member* instead.

For other calculations, please compose the use of the `size_mul()`, `size_add()`, and `size_sub()` helpers. For example, in the case of:

```
foo = krealloc(current_size + chunk_size * (count - 3), GFP_KERNEL);
```

Instead, use the helpers:

```
foo = krealloc(size_add(current_size,  
                        size_mul(chunk_size,  
                                size_sub(count, 3))), GFP_KERNEL);
```

For more details, also see `array3_size()` and `flex_array_size()`, as well as the related `check_mul_overflow()`, `check_add_overflow()`, `check_sub_overflow()`, and `check_shl_overflow()` family of functions.

*** `simple_strtol()`, `simple_strtoll()`, `simple_strtoul()`, `simple_strtoull()`**

The `simple_strtol()`, `simple_strtoll()`, `simple_strtoul()`, and `simple_strtoull()` functions explicitly ignore overflows, which may lead to unexpected results in callers. The respective `kstrtol()`, `kstrtoll()`, `kstrtoul()`, and `kstrtoull()` functions tend to be the correct replacements, though note that those require the string to be NUL or newline terminated.

* **strcpy()**

strcpy() performs no bounds checking on the destination buffer. This could result in linear overflows beyond the end of the buffer, leading to all kinds of misbehaviors. While *CONFIG_FORTIFY_SOURCE=y* and various compiler flags help reduce the risk of using this function, there is no good reason to add new uses of this function. The safe replacement is strscpy(), though care must be given to any cases where the return value of strcpy() was used, since strscpy() does not return a pointer to the destination, but rather a count of non-NUL bytes copied (or negative errno when it truncates).

* **strncpy() on NUL-terminated strings**

Use of strncpy() does not guarantee that the destination buffer will be NUL terminated. This can lead to various linear read overflows and other misbehavior due to the missing termination. It also NUL-pads the destination buffer if the source contents are shorter than the destination buffer size, which may be a needless performance penalty for callers using only NUL-terminated strings.

When the destination is required to be NUL-terminated, the replacement is strscpy(), though care must be given to any cases where the return value of strncpy() was used, since strscpy() does not return a pointer to the destination, but rather a count of non-NUL bytes copied (or negative errno when it truncates). Any cases still needing NUL-padding should instead use strscpy_pad().

If a caller is using non-NUL-terminated strings, strtomem() should be used, and the destinations should be marked with the `__nonstring` attribute to avoid future compiler warnings. For cases still needing NUL-padding, strtomem_pad() can be used.

* **strncpy()**

strncpy() reads the entire source buffer first (since the return value is meant to match that of strlen()). This read may exceed the destination size limit. This is both inefficient and can lead to linear read overflows if a source string is not NUL-terminated. The safe replacement is strscpy(), though care must be given to any cases where the return value of strncpy() is used, since strscpy() will return negative errno values when it truncates.

* **%p format specifier**

Traditionally, using "%p" in format strings would lead to regular address exposure flaws in dmesg, proc, sysfs, etc. Instead of leaving these to be exploitable, all "%p" uses in the kernel are being printed as a hashed value, rendering them unusable for addressing. New uses of "%p" should not be added to the kernel. For text addresses, using "%pS" is likely better, as it produces the more useful symbol name instead. For nearly everything else, just do not add "%p" at all.

Paraphrasing Linus's current [guidance](#):

- If the hashed "%p" value is pointless, ask yourself whether the pointer itself is important. Maybe it should be removed entirely?

- If you really think the true pointer value is important, why is some system state or user privilege level considered "special"? If you think you can justify it (in comments and commit log) well enough to stand up to Linus's scrutiny, maybe you can use "%px", along with making sure you have sensible permissions.

If you are debugging something where "%p" hashing is causing problems, you can temporarily boot with the debug flag "no_hash_pointers".

* Variable Length Arrays (VLAs)

Using stack VLAs produces much worse machine code than statically sized stack arrays. While these non-trivial [performance issues](#) are reason enough to eliminate VLAs, they are also a security risk. Dynamic growth of a stack array may exceed the remaining memory in the stack segment. This could lead to a crash, possible overwriting sensitive contents at the end of the stack (when built without `CONFIG_THREAD_INFO_IN_TASK=y`), or overwriting memory adjacent to the stack (when built without `CONFIG_VMAP_STACK=y`)

* Implicit switch case fall-through

The C language allows switch cases to fall through to the next case when a "break" statement is missing at the end of a case. This, however, introduces ambiguity in the code, as it's not always clear if the missing break is intentional or a bug. For example, it's not obvious just from looking at the code if `STATE_ONE` is intentionally designed to fall through into `STATE_TWO`:

```
switch (value) {
case STATE_ONE:
    do_something();
case STATE_TWO:
    do_other();
    break;
default:
    WARN("unknown state");
}
```

As there have been a long list of flaws [due to missing "break" statements](#), we no longer allow implicit fall-through. In order to identify intentional fall-through cases, we have adopted a pseudo-keyword macro "fallthrough" which expands to gcc's extension `__attribute__((fallthrough))`. (When the C17/C18 `[[fallthrough]]` syntax is more commonly supported by C compilers, static analyzers, and IDEs, we can switch to using that syntax for the macro pseudo-keyword.)

All switch/case blocks must end in one of:

- break;
- fallthrough;
- continue;
- goto <label>;
- return [expression];

* Zero-length and one-element arrays

There is a regular need in the kernel to provide a way to declare having a dynamically sized set of trailing elements in a structure. Kernel code should always use “flexible array members” for these cases. The older style of one-element or zero-length arrays should no longer be used.

In older C code, dynamically sized trailing elements were done by specifying a one-element array at the end of a structure:

```
struct something {
    size_t count;
    struct foo items[1];
};
```

This led to fragile size calculations via `sizeof()` (which would need to remove the size of the single trailing element to get a correct size of the “header”). A GNU C extension was introduced to allow for zero-length arrays, to avoid these kinds of size problems:

```
struct something {
    size_t count;
    struct foo items[0];
};
```

But this led to other problems, and didn't solve some problems shared by both styles, like not being able to detect when such an array is accidentally being used `_not_` at the end of a structure (which could happen directly, or when such a struct was in unions, structs of structs, etc).

C99 introduced “flexible array members”, which lacks a numeric size for the array declaration entirely:

```
struct something {
    size_t count;
    struct foo items[];
};
```

This is the way the kernel expects dynamically sized trailing elements to be declared. It allows the compiler to generate errors when the flexible array does not occur last in the structure, which helps to prevent some kind of [undefined behavior](#) bugs from being inadvertently introduced to the codebase. It also allows the compiler to correctly analyze array sizes (via `sizeof()`, `CONFIG_FORTIFY_SOURCE`, and `CONFIG_UBSAN_BOUNDS`). For instance, there is no mechanism that warns us that the following application of the `sizeof()` operator to a zero-length array always results in zero:

```
struct something {
    size_t count;
    struct foo items[0];
};

struct something *instance;

instance = kmalloc(struct_size(instance, items, count), GFP_KERNEL);
instance->count = count;
```

```
size = sizeof(instance->items) * instance->count;
memcpy(instance->items, source, size);
```

At the last line of code above, `size` turns out to be zero, when one might have thought it represents the total size in bytes of the dynamic memory recently allocated for the trailing array `items`. Here are a couple examples of this issue: [link 1](#), [link 2](#). Instead, *flexible array members have incomplete type, and so the `sizeof()` operator may not be applied*, so any misuse of such operators will be immediately noticed at build time.

With respect to one-element arrays, one has to be acutely aware that *such arrays occupy at least as much space as a single object of the type*, hence they contribute to the size of the enclosing structure. This is prone to error every time people want to calculate the total size of dynamic memory to allocate for a structure containing an array of this kind as a member:

```
struct something {
    size_t count;
    struct foo items[1];
};

struct something *instance;

instance = kmalloc(struct_size(instance, items, count - 1), GFP_KERNEL);
instance->count = count;

size = sizeof(instance->items) * instance->count;
memcpy(instance->items, source, size);
```

In the example above, we had to remember to calculate `count - 1` when using the `struct_size()` helper, otherwise we would have --unintentionally-- allocated memory for one too many `items` objects. The cleanest and least error-prone way to implement this is through the use of a *flexible array member*, together with `struct_size()` and `flex_array_size()` helpers:

```
struct something {
    size_t count;
    struct foo items[];
};

struct something *instance;

instance = kmalloc(struct_size(instance, items, count), GFP_KERNEL);
instance->count = count;

memcpy(instance->items, source, flex_array_size(instance, items, instance->
↪count));
```

There are two special cases of replacement where the `DECLARE_FLEX_ARRAY()` helper needs to be used. (Note that it is named `__DECLARE_FLEX_ARRAY()` for use in UAPI headers.) Those cases are when the flexible array is either alone in a struct or is part of a union. These are disallowed by the C99 specification, but for no technical reason (as can be seen by both the existing use of such arrays in those places and the work-around that `DECLARE_FLEX_ARRAY()` uses). For example, to convert this:

```
struct something {
    ...
    union {
        struct type1 one[0];
        struct type2 two[0];
    };
};
```

The helper must be used:

```
struct something {
    ...
    union {
        DECLARE_FLEX_ARRAY(struct type1, one);
        DECLARE_FLEX_ARRAY(struct type2, two);
    };
};
```

These are some overall technical guides that have been put here for now for lack of a better place.

* Linux magic numbers

This file is a registry of magic numbers which are in use. When you add a magic number to a structure, you should also add it to this file, since it is best if the magic numbers used by various structures are unique.

It is a **very** good idea to protect kernel data structures with magic numbers. This allows you to check at run time whether (a) a structure has been clobbered, or (b) you've passed the wrong structure to a routine. This last is especially useful --- particularly when you are passing pointers to structures via a void * pointer. The tty code, for example, does this frequently to pass driver-specific and line discipline-specific structures back and forth.

The way to use magic numbers is to declare them at the beginning of the structure, like so:

```
struct tty_ldisc {
    int      magic;
    ...
};
```

Please follow this discipline when you are adding future enhancements to the kernel! It has saved me countless hours of debugging, especially in the screwy cases where an array has been overrun and structures following the array have been overwritten. Using this discipline, these cases get detected quickly and safely.

Changelog:

Theodore Ts'o
31 Mar 94

The magic table is current to Linux 2.1.55.

Michael Chastain
<mailto:mec@shout.net>
22 Sep 1997

Now it should be up to date with Linux 2.1.112. Because we are in feature freeze time it is very unlikely that something will change before 2.2.x. The entries are sorted by number field.

Krzysztof G. Baranowski
<mailto: kgb@knm.org.pl>
29 Jul 1998

Updated the magic table to Linux 2.5.45. Right over the feature freeze, but it is possible that some new magic numbers will sneak into the kernel before 2.6.x yet.

Petr Baudis
<pasky@ucw.cz>
03 Nov 2002

Updated the magic table to Linux 2.5.74.

Fabian Frederick
<ffrederick@users.sourceforge.net>
09 Jul 2003

Magic Name	Number	Structure	File
PG_MAGIC	'P'	pg_{read,write}_hdr	include/linux/pg.h
APM_BIOS_MAGIC	0x4101	apm_user	arch/x86/kernel/apm_32.c
FASYNC_MAGIC	0x4601	fasync_struct	include/linux/fs.h
SLIP_MAGIC	0x5302	slip	drivers/net/slip.h
BAYCOM_MAGIC	0x19730510	baycom_state	drivers/net/baycom_epp.c
HDLCDRV_MAGIC	0x5ac6e778	hdlcdrv_state	include/linux/hdlcdrv.h
KV_MAGIC	0x5f4b565f	kernel_vars_s	arch/mips/include/asm/sn/klkernvars.h
CODA_MAGIC	0xC0DAC0DA	coda_file_info	fs/coda/coda_fs_i.h
YAM_MAGIC	0xF10A7654	yam_port	drivers/net/hamradio/yam.c
CCB_MAGIC	0xf2691ad2	ccb	drivers/scsi/ncr53c8xx.c
QUEUE_MAGIC_FREE	0xf7e1c9a3	queue_entry	drivers/scsi/arm/queue.c
QUEUE_MAGIC_USED	0xf7e1cc33	queue_entry	drivers/scsi/arm/queue.c
NMI_MAGIC	0x48414d4d455201	nmi_s	arch/mips/include/asm/sn/nmi.h

* clang-format

clang-format is a tool to format C/C++/... code according to a set of rules and heuristics. Like most tools, it is not perfect nor covers every single case, but it is good enough to be helpful.

clang-format can be used for several purposes:

- Quickly reformat a block of code to the kernel style. Specially useful when moving code around and aligning/sorting. See [clangformatreformat](#).
- Spot style mistakes, typos and possible improvements in files you maintain, patches you review, diffs, etc. See [clangformatreview](#).
- Help you follow the coding style rules, specially useful for those new to kernel development or working at the same time in several projects with different coding styles.

Its configuration file is `.clang-format` in the root of the kernel tree. The rules contained there try to approximate the most common kernel coding style. They also try to follow [Documentation/process/coding-style.rst](#) as much as possible. Since not all the kernel follows the same style, it is possible that you may want to tweak the defaults for a particular subsystem or folder. To do so, you can override the defaults by writing another `.clang-format` file in a subfolder.

The tool itself has already been included in the repositories of popular Linux distributions for a long time. Search for clang-format in your repositories. Otherwise, you can either download pre-built LLVM/clang binaries or build the source code from:

<https://releases.llvm.org/download.html>

See more information about the tool at:

<https://clang.llvm.org/docs/ClangFormat.html>

<https://clang.llvm.org/docs/ClangFormatStyleOptions.html>

* Review files and patches for coding style

By running the tool in its inline mode, you can review full subsystems, folders or individual files for code style mistakes, typos or improvements.

To do so, you can run something like:

```
# Make sure your working directory is clean!
clang-format -i kernel/*.[ch]
```

And then take a look at the git diff.

Counting the lines of such a diff is also useful for improving/tweaking the style options in the configuration file; as well as testing new clang-format features/versions.

clang-format also supports reading unified diffs, so you can review patches and git diffs easily. See the documentation at:

<https://clang.llvm.org/docs/ClangFormat.html#script-for-patch-reformatting>

To avoid clang-format formatting some portion of a file, you can do:

```
int formatted_code;
// clang-format off
    void    unformatted_code    ;
// clang-format on
void formatted_code_again;
```

While it might be tempting to use this to keep a file always in sync with clang-format, specially if you are writing new files or if you are a maintainer, please note that people might be running different clang-format versions or not have it available at all. Therefore, you should probably refrain yourself from using this in kernel sources; at least until we see if clang-format becomes commonplace.

* Reformatting blocks of code

By using an integration with your text editor, you can reformat arbitrary blocks (selections) of code with a single keystroke. This is specially useful when moving code around, for complex code that is deeply intended, for multi-line macros (and aligning their backslashes), etc.

Remember that you can always tweak the changes afterwards in those cases where the tool did not do an optimal job. But as a first approximation, it can be very useful.

There are integrations for many popular text editors. For some of them, like vim, emacs, BBEdit and Visual Studio you can find support built-in. For instructions, read the appropriate section at:

<https://clang.llvm.org/docs/ClangFormat.html>

For Atom, Eclipse, Sublime Text, Visual Studio Code, XCode and other editors and IDEs you should be able to find ready-to-use plugins.

For this use case, consider using a secondary `.clang-format` so that you can tweak a few options. See [clangformatextra](#).

* Missing support

`clang-format` is missing support for some things that are common in kernel code. They are easy to remember, so if you use the tool regularly, you will quickly learn to avoid/ignore those.

In particular, some very common ones you will notice are:

- Aligned blocks of one-line `#defines`, e.g.:

```
#define TRACING_MAP_BITS_DEFAULT      11
#define TRACING_MAP_BITS_MAX          17
#define TRACING_MAP_BITS_MIN           7
```

vs.:

```
#define TRACING_MAP_BITS_DEFAULT 11
#define TRACING_MAP_BITS_MAX 17
#define TRACING_MAP_BITS_MIN 7
```

- Aligned designated initializers, e.g.:

```
static const struct file_operations uprobe_events_ops = {
    .owner      = THIS_MODULE,
    .open       = probes_open,
    .read       = seq_read,
    .llseek     = seq_lseek,
    .release    = seq_release,
    .write      = probes_write,
};
```

vs.:

```
static const struct file_operations uprobe_events_ops = {
    .owner = THIS_MODULE,
    .open = probes_open,
    .read = seq_read,
    .llseek = seq_lseek,
    .release = seq_release,
    .write = probes_write,
};
```

* Extra features/options

Some features/style options are not enabled by default in the configuration file in order to minimize the differences between the output and the current code. In other words, to make the difference as small as possible, which makes reviewing full-file style, as well diffs and patches as easy as possible.

In other cases (e.g. particular subsystems/folders/files), the kernel style might be different and enabling some of these options may approximate better the style there.

For instance:

- Aligning assignments (`AlignConsecutiveAssignments`).
- Aligning declarations (`AlignConsecutiveDeclarations`).
- Reflowing text in comments (`ReflowComments`).
- Sorting `#includes` (`SortIncludes`).

They are typically useful for block re-formatting, rather than full-file. You might want to create another `.clang-format` file and use that one from your editor/IDE instead.

* arch/riscv maintenance guidelines for developers

* Overview

The RISC-V instruction set architecture is developed in the open: in-progress drafts are available for all to review and to experiment with implementations. New module or extension drafts can change during the development process - sometimes in ways that are incompatible with previous drafts. This flexibility can present a challenge for RISC-V Linux maintenance. Linux maintainers disapprove of churn, and the Linux development process prefers well-reviewed and tested code over experimental code. We wish to extend these same principles to the RISC-V-related code that will be accepted for inclusion in the kernel.

* Patchwork

RISC-V has a patchwork instance, where the status of patches can be checked:

<https://patchwork.kernel.org/project/linux-riscv/list/>

If your patch does not appear in the default view, the RISC-V maintainers have likely either requested changes, or expect it to be applied to another tree.

Automation runs against this patchwork instance, building/testing patches as they arrive. The automation applies patches against the current HEAD of the RISC-V *for-next* and *fixes* branches, depending on whether the patch has been detected as a fix. Failing those, it will use the RISC-V *master* branch. The exact commit to which a series has been applied will be noted on patchwork. Patches for which any of the checks fail are unlikely to be applied and in most cases will need to be resubmitted.

* Submit Checklist Addendum

We'll only accept patches for new modules or extensions if the specifications for those modules or extensions are listed as being unlikely to be incompatibly changed in the future. For specifications from the RISC-V foundation this means "Frozen" or "Ratified", for the UEFI forum specifications this means a published ECR. (Developers may, of course, maintain their own Linux kernel trees that contain code for any draft extensions that they wish.)

Additionally, the RISC-V specification allows implementers to create their own custom extensions. These custom extensions aren't required to go through any review or ratification process by the RISC-V Foundation. To avoid the maintenance complexity and potential performance impact of adding kernel code for implementor-specific RISC-V extensions, we'll only consider patches for extensions that either:

- Have been officially frozen or ratified by the RISC-V Foundation, or
- Have been implemented in hardware that is widely available, per standard Linux practice.

(Implementers, may, of course, maintain their own Linux kernel trees containing code for any custom extensions that they wish.)

* Unaligned Memory Accesses

Author

Daniel Drake <dsd@gentoo.org>,

Author

Johannes Berg <johannes@sipsolutions.net>

With help from

Alan Cox, Avuton Olrich, Heikki Orsila, Jan Engelhardt, Kyle McMartin, Kyle Moffett, Randy Dunlap, Robert Hancock, Uli Kunitz, Vadim Lobanov

Linux runs on a wide variety of architectures which have varying behaviour when it comes to memory access. This document presents some details about unaligned accesses, why you need to write code that doesn't cause them, and how to write such code!

* The definition of an unaligned access

Unaligned memory accesses occur when you try to read N bytes of data starting from an address that is not evenly divisible by N (i.e. $\text{addr} \% N \neq 0$). For example, reading 4 bytes of data from address 0x10004 is fine, but reading 4 bytes of data from address 0x10005 would be an unaligned memory access.

The above may seem a little vague, as memory access can happen in different ways. The context here is at the machine code level: certain instructions read or write a number of bytes to or from memory (e.g. `movb`, `movw`, `movl` in x86 assembly). As will become clear, it is relatively easy to spot C statements which will compile to multiple-byte memory access instructions, namely when dealing with types such as `u16`, `u32` and `u64`.

*** Natural alignment**

The rule mentioned above forms what we refer to as natural alignment: When accessing N bytes of memory, the base memory address must be evenly divisible by N , i.e. $\text{addr} \% N == 0$.

When writing code, assume the target architecture has natural alignment requirements.

In reality, only a few architectures require natural alignment on all sizes of memory access. However, we must consider ALL supported architectures; writing code that satisfies natural alignment requirements is the easiest way to achieve full portability.

*** Why unaligned access is bad**

The effects of performing an unaligned memory access vary from architecture to architecture. It would be easy to write a whole document on the differences here; a summary of the common scenarios is presented below:

- Some architectures are able to perform unaligned memory accesses transparently, but there is usually a significant performance cost.
- Some architectures raise processor exceptions when unaligned accesses happen. The exception handler is able to correct the unaligned access, at significant cost to performance.
- Some architectures raise processor exceptions when unaligned accesses happen, but the exceptions do not contain enough information for the unaligned access to be corrected.
- Some architectures are not capable of unaligned memory access, but will silently perform a different memory access to the one that was requested, resulting in a subtle code bug that is hard to detect!

It should be obvious from the above that if your code causes unaligned memory accesses to happen, your code will not work correctly on certain platforms and will cause performance problems on others.

*** Code that does not cause unaligned access**

At first, the concepts above may seem a little hard to relate to actual coding practice. After all, you don't have a great deal of control over memory addresses of certain variables, etc.

Fortunately things are not too complex, as in most cases, the compiler ensures that things will work for you. For example, take the following structure:

```
struct foo {  
    u16 field1;  
    u32 field2;  
    u8 field3;  
};
```

Let us assume that an instance of the above structure resides in memory starting at address 0x10000. With a basic level of understanding, it would not be unreasonable to expect that accessing field2 would cause an unaligned access. You'd be expecting field2 to be located at offset 2 bytes into the structure, i.e. address 0x10002, but that address is not evenly divisible by 4 (remember, we're reading a 4 byte value here).

Fortunately, the compiler understands the alignment constraints, so in the above case it would insert 2 bytes of padding in between field1 and field2. Therefore, for standard structure types you can always rely on the compiler to pad structures so that accesses to fields are suitably aligned (assuming you do not cast the field to a type of different length).

Similarly, you can also rely on the compiler to align variables and function parameters to a naturally aligned scheme, based on the size of the type of the variable.

At this point, it should be clear that accessing a single byte (u8 or char) will never cause an unaligned access, because all memory addresses are evenly divisible by one.

On a related topic, with the above considerations in mind you may observe that you could reorder the fields in the structure in order to place fields where padding would otherwise be inserted, and hence reduce the overall resident memory size of structure instances. The optimal layout of the above example is:

```
struct foo {
    u32 field2;
    u16 field1;
    u8 field3;
};
```

For a natural alignment scheme, the compiler would only have to add a single byte of padding at the end of the structure. This padding is added in order to satisfy alignment constraints for arrays of these structures.

Another point worth mentioning is the use of `__attribute__((packed))` on a structure type. This GCC-specific attribute tells the compiler never to insert any padding within structures, useful when you want to use a C struct to represent some data that comes in a fixed arrangement 'off the wire'.

You might be inclined to believe that usage of this attribute can easily lead to unaligned accesses when accessing fields that do not satisfy architectural alignment requirements. However, again, the compiler is aware of the alignment constraints and will generate extra instructions to perform the memory access in a way that does not cause unaligned access. Of course, the extra instructions obviously cause a loss in performance compared to the non-packed case, so the packed attribute should only be used when avoiding structure padding is of importance.

* Code that causes unaligned access

With the above in mind, let's move onto a real life example of a function that can cause an unaligned memory access. The following function taken from `include/linux/etherdevice.h` is an optimized routine to compare two ethernet MAC addresses for equality:

```
bool ether_addr_equal(const u8 *addr1, const u8 *addr2)
{
#ifdef CONFIG_HAVE_EFFICIENT_UNALIGNED_ACCESS
    u32 fold = ((*((const u32 *)addr1) ^ (*((const u32 *)addr2)) |
                (*((const u16 *) (addr1 + 4)) ^ (*((const u16 *) (addr2 + 4)))));

    return fold == 0;
#else
    const u16 *a = (const u16 *)addr1;
```



```
    const u16 *b = (const u16 *)addr2;
    return ((a[0] ^ b[0]) | (a[1] ^ b[1]) | (a[2] ^ b[2])) == 0;
#endif
}
```

In the above function, when the hardware has efficient unaligned access capability, there is no issue with this code. But when the hardware isn't able to access memory on arbitrary boundaries, the reference to `a[0]` causes 2 bytes (16 bits) to be read from memory starting at address `addr1`.

Think about what would happen if `addr1` was an odd address such as `0x10003`. (Hint: it'd be an unaligned access.)

Despite the potential unaligned access problems with the above function, it is included in the kernel anyway but is understood to only work normally on 16-bit-aligned addresses. It is up to the caller to ensure this alignment or not use this function at all. This alignment-unsafe function is still useful as it is a decent optimization for the cases when you can ensure alignment, which is true almost all of the time in ethernet networking context.

Here is another example of some code that could cause unaligned accesses:

```
void myfunc(u8 *data, u32 value)
{
    [...]
    *((u32 *) data) = cpu_to_le32(value);
    [...]
}
```

This code will cause unaligned accesses every time the `data` parameter points to an address that is not evenly divisible by 4.

In summary, the 2 main scenarios where you may run into unaligned access problems involve:

1. Casting variables to types of different lengths
2. Pointer arithmetic followed by access to at least 2 bytes of data

*** Avoiding unaligned accesses**

The easiest way to avoid unaligned access is to use the `get_unaligned()` and `put_unaligned()` macros provided by the `<asm/unaligned.h>` header file.

Going back to an earlier example of code that potentially causes unaligned access:

```
void myfunc(u8 *data, u32 value)
{
    [...]
    *((u32 *) data) = cpu_to_le32(value);
    [...]
}
```

To avoid the unaligned memory access, you would rewrite it as follows:

```
void myfunc(u8 *data, u32 value)
{
    [...]
    value = cpu_to_le32(value);
    put_unaligned(value, (u32 *) data);
    [...]
}
```

The `get_unaligned()` macro works similarly. Assuming 'data' is a pointer to memory and you wish to avoid unaligned access, its usage is as follows:

```
u32 value = get_unaligned((u32 *) data);
```

These macros work for memory accesses of any length (not just 32 bits as in the examples above). Be aware that when compared to standard access of aligned memory, using these macros to access unaligned memory can be costly in terms of performance.

If use of such macros is not convenient, another option is to use `memcpy()`, where the source or destination (or both) are of type `u8*` or `unsigned char*`. Due to the byte-wise nature of this operation, unaligned accesses are avoided.

* Alignment vs. Networking

On architectures that require aligned loads, networking requires that the IP header is aligned on a four-byte boundary to optimise the IP stack. For regular ethernet hardware, the constant `NET_IP_ALIGN` is used. On most architectures this constant has the value 2 because the normal ethernet header is 14 bytes long, so in order to get proper alignment one needs to DMA to an address which can be expressed as $4*n + 2$. One notable exception here is `powerpc` which defines `NET_IP_ALIGN` to 0 because DMA to unaligned addresses can be very expensive and dwarf the cost of unaligned loads.

For some ethernet hardware that cannot DMA to unaligned addresses like $4*n+2$ or non-ethernet hardware, this can be a problem, and it is then required to copy the incoming frame into an aligned buffer. Because this is unnecessary on architectures that can do unaligned accesses, the code can be made dependent on `CONFIG_HAVE_EFFICIENT_UNALIGNED_ACCESS` like so:

```
#ifdef CONFIG_HAVE_EFFICIENT_UNALIGNED_ACCESS
    skb = original skb
#else
    skb = copy skb
#endif
```


BIBLIOGRAPHY

- [c-language] <http://www.open-std.org/jtc1/sc22/wg14/www/standards>
- [gcc] <https://gcc.gnu.org>
- [clang] <https://clang.llvm.org>
- [gcc-c-dialect-options] <https://gcc.gnu.org/onlinedocs/gcc/C-Dialect-Options.html>
- [gnu-extensions] <https://gcc.gnu.org/onlinedocs/gcc/C-Extensions.html>
- [gcc-attribute-syntax] <https://gcc.gnu.org/onlinedocs/gcc/Attribute-Syntax.html>
- [n2049] <http://www.open-std.org/jtc1/sc22/wg14/www/docs/n2049.pdf>
- [rust-language] <https://www.rust-lang.org>
- [rustc] <https://doc.rust-lang.org/rustc/>
- [rust-editions] <https://doc.rust-lang.org/edition-guide/editions/>
- [rust-unstable-features] <https://github.com/Rust-for-Linux/linux/issues/2>