Make the Linux developers fix your kernel bug

Thorsten Leemhuis
a decent bug report most of the time will do the trick
Hi! I got a brand new Wifi router that already supports Wifi 11XP and WPA 6NG. My laptop (Lenovo T14s AMD Gen2, Fedora 36) isn't able to connect to it, not even with the latest -rc release (6.0-rc4, vanilla, untainted). I checked dmesg and noticed warning messages from the iwlwifi driver when I try to connect, among them:

```
[ 35.890339] iwlwifi 0000:00:14.3: Microcode SW error detected. Restarting 0x0.
```

Is that a known problem? Can I reconfigure iwlwifi or my router to circumvent the problem somehow?

Dmesg: https://example.org/myfiles/dmesg.txt [Connection attempt starting at timecode 0:35:17]
Kernel-Config: https://example.org/myfiles/config.txt [based on Fedora's]

Ciao, Thorsten
Bug 2142323 - driver hangs during normal usage - CTRL-EVENT-BEACON-LOSS

Status: NEW

Alias: None

Product: Drivers
Component: network-wireless-intel (show other bugs)
Hardware: Intel Linux

Importance: P1 normal
Assignee: Default virtual assignee for network-wireless-intel

Reported: 2022-10-11 08:51 UTC by somebody
Modified: 2022-10-16 09:46 UTC (History)

CC List: Add me to CC list
0 users (edit)

Ignore Bug Mail: (never email me about this bug)

See Also:
Kernel Version: 5.15.0-48-generic #54-Ubuntu
Tree: Mainline
Regression: No

mics 2022-10-11 08:51:13 UTC

Created attachment 302978 [details]
syslog
driver hangs during normal usage - a reboot of a notebook is needed to have wifi working again.
it happens like a few time a day.
i am attaching a syslog.
ubuntu 22.04 x86-64
kernel: 5.15.0-48-generic #54-Ubuntu
lshw:
^network
description: Wireless interface
product: Centrino Wireless-N 2230
vendor: Intel Corporation

Add Comment
intro;

developers are *not obliged* to fix each and every reported issue
would be impossible to make it mandatory anyway, as the kernel is made by volunteers
would be impossible to make it mandatory anyway, as the kernel is made by volunteers (¹)

'volunteers' as in 'hobbyists' and 'developers from vendors helping voluntarily'

(¹) apart from a very small number of Linux Foundation fellows like Linus or GregKH
developers themselves or their employers hence decide what to spend time on
think of a bug report like asking for a favor
think of a bug report like asking for a favor from a volunteer
fortunately, most kernel developers are committed to help with all sorts of issues
Fortunately, most kernel developers are committed to help with all sorts of issues. That's why even reports with big flaws sometimes do the trick.
fortunately, most kernel developers are committed to help with all sorts of issues, if their time and motivation permits

that's why even reports with big flaws sometimes do the trick
unfortunately, most kernel developers are totally buried in work
unfortunately, most kernel developers are totally buried in work and get tons of bug reports
unfortunately, most kernel developers are totally buried in work and get tons of bug reports with flaws then are often the first things to be ignored
every flaw in your report hence increases the risk that your report will be ignored
that's why I'll show you how to avoid flaws
that's why I'll show you how to submit such a decent report!
the five most important aspects to avoid a flawed report
decent report;

what's important

a) ensure your kernel is vanilla
decent report; vanilla;

why? because that's the code kernel developer are working on!
Build your own 'Linus land'

Full instructions inside
Build your own 'Linus land'

Full instructions inside

O RLY?

Linux kernel community
any modifications or enhancements to Linux codebase can cause issues in other, unmodified kernel areas
decent report; vanilla;

most Linux kernels used in the wild are heavily modified or enhanced
most Linux kernels used in the wild are heavily modified or enhanced especially those in RHEL, SLE, and Ubuntu
Most Linux kernels used in the wild are heavily modified or enhanced and thus unsuitable for reporting bugs upstream, especially those in RHEL, SLE, and Ubuntu.
report problems with such kernels to your vendor, e.g. your Linux distributor
or install a vanilla kernel yourself instead!
compile your own or install a pre-built one
decent report; vanilla;

focus on the vanilla kernel in your report later!
focus on the vanilla kernel in your report later!

bringing a distro kernel up even briefly often just complicates the report and makes it a lot harder for others to grasp
### Bug 216572 - driver hangs during normal usage - CTRL-BACON-LOSS

**Status:** NEW  
**Alias:** None  
**Product:** Drivers  
**Component:** network-wireless-intel (show other bugs)  
**Hardware:** Intel Linux  
**Importance:** P1 normal  
**Assignee:** Default virtual assignee for network-wireless-intel  

**Kernel Version:** 5.15.0-48-generic #54-Ubuntu  
**Regression:** No

#### Attachments
- **syslog (56.31 KB, text/plain)**  
  2022-10-11:08:51 UTC, miccs  
- **syslog - crash second time (56.54 KB, text/plain)**  
  2022-10-11:08:51 UTC, miccs  
- **kernel_5_19_syslog (56.27 KB, text/plain)**  
  2022-10-16:09:44 UTC, miccs  
- **kernel_5_19_dmesg (42.89 KB, text/plain)**  
  2022-10-16:09:46 UTC, miccs

Add an attachment (proposed patch, testcase, etc.)

---

**redacted**  
2022-10-11:08:51:13 UTC  
**Created** attachment 382976 [details]

**Description**

driver hangs during normal usage - a reboot of a my notebook (ASUS ROG Strix G533QS GeForce RTX 3880) is needed to have wifi working again. It happens like a few time a day.  
I am attaching a syslog.  
ubuntu 22.04 x86-64  
kernel: 5.15.0-48-generic #54-Ubuntu  

Add Comment
Hi! I got a brand new Wifi router that already supports Wifi 11XP and WPA 6NG. My laptop (Lenovo T14s AMD Gen2, Fedora 36) isn't able to connect to it, not even with the latest -rc release (6.0-rc4, vanilla, untainted). I checked dmesg and noticed warning messages from the iwlwifi driver when I try to connect, among them:

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Kernel-Config: https://example.org/myfiles/config.txt [based on Fedora's]

Ciao, Thorsten
what's important

a) ensure your kernel is vanilla
decent report;

what's important

a) ensure your kernel is vanilla
b) base your report on a fresh kernel
why? because that's the code kernel developer care about!
Build your own 'Linus land'
Full instructions inside

O RLY?
Linux kernel community
decent report; freshness;

hence test if the issue happens with the latest codebase
it's in your personal interest, too:
that the first place where all bug are are fixed
The Linux Kernel Archives

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Protocol  Location
HTTP  https://www.kernel.org/pub/
GIT  https://git.kernel.org/
RSYNC  rsync://rsync.kernel.org/pub/

Latest Release
5.16.14

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### The Linux Kernel Archives

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decent report; freshness;

stable kernels have known bugs that will never be fixed!
sometimes fixes simply are too complex or risky to backport
that makes longterm (aka 'LTS') kernels extremely unsuitable for reporting bugs!
decent report; freshness;

that makes longterm (aka 'LTS') kernels extremely unsuitable(¹) for reporting bugs!

(1) unless it's a regression within a longterm series; in that case see "Reporting regressions within a stable/longterm kernel" in https://docs.kernel.org/admin-guide/reporting-issues.html
Theodore Ts'o aka 'tytso' in https://lore.kernel.org/ksummit/Yzg7pHspc72I7TAb@mit.edu/

The users vastly outnumber us developers by orders of magnitude, and if someone needs a huge amount of hand-holding, maybe they should be paying for a support contract with Red Hat, or Suse or Canonical, or CIQ.

Can we do better? Sure! But I think we need to clearly set expectations for what upstream developers will and will not provide support for. (Example: **bug reports for LTS kernels are not interesting to me**, unless you can also reproduce them in the latest upstream kernel --- and **if you can't build your own kernel from scratch --- boo, hoo**, maybe you need to pay someone to help you out.)

I also think that we need to clearly express that any kind of support is best efforts only, and if someone has anything business-, mission-, or life-critical, they should darned well pay $$$ for a proper support contract.

- Ted
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## Protocol Location

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## Latest Release

- **5.16.14**

## Mainline Releases

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## Longterm Releases

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focus your report on the freshest kernel you tested
mentioning other versions most of the time will complicate the report unnecessarily
**Bug 216572 - driver hangs during normal usage - CTRL-BACON-LOSS**

**Status:** NEW  
**Alias:** None

**Product:** Drivers  
**Component:** network-wireless-intel (show other bugs)  
**Hardware:** Intel Linux  
**Importance:** P1 normal  
**Assignee:** Default virtual assignee for network-wireless-intel

**Kernel Version:** 5.15.0-48-generic #54-Ubuntu

---

**Description:**

driver hangs during normal usage - a reboot of a my notebook (ASUS ROG Strix G533QS GeForce RTX 3088) is needed to have wifi working again. It happens like a few time a day.

I am attaching a syslog.

Ubuntu 22.04 x86-64

```
kernel: 5.15.0-48-generic #54-Ubuntu
syslog ...
```
Hi! I got a brand new WiFi router that already supports WiFi 11XP and WPA 6NG. My laptop (Lenovo T14s AMD Gen2, Fedora 36) isn't able to connect to it, not even with the latest -rc release (6.0-rc4, vanilla, untainted).

I checked dmesg and noticed warning messages from the iwlwifi driver when I try to connect, among them:

```
[ 35.890339] iwlwifi 0000:00:14.3: Microcode SW error detected. Restarting 0x0.
```

Is that a known problem? Can I reconfigure iwlwifi or my router to circumvent the problem somehow?

Dmesg: https://example.org/myfiles/dmesg.txt [Connection attempt starting at timecode 0:35:17]
Kernel-Config: https://example.org/myfiles/config.txt [based on Fedora's]

Ciao, Thorsten
what's important

a) ensure your kernel is vanilla
b) base your report on a fresh kernel
what's important

a) ensure your kernel is vanilla
b) base your report on a fresh kernel
c) ensure your kernel's and system's integrity
why? because a local aspect might cause the problem!
Build your own 'Linus land'

Full instructions inside
decent report; integrity;

```
[thl@t14s ~]$ cat /proc/sys/kernel/tainted
0
[thl@t14s ~]$ 
```
decent report; integrity;

[thl@t14s ~]$ cat /proc/sys/kernel/tainted
1

[thl@t14s ~]$
decent report; integrity;

frequent cause: Nvidia's own GPU drivers
frequent cause: Nvidia's own GPU drivers

both of them, the license is irrelevant
kernels with out-of-tree drivers are unsuitable for reporting issues upstream. They are enhanced and thus not vanilla anymore.
decent report; integrity;
deinstall such drivers, reboot,
check if issue still present
decent report; integrity;

many other incidents can taint a kernel
many other incidents can taint a kernel and most of them make it unsuitable for reporting bugs
decent report; integrity;

big and important exception: the first Oops, warning, etc.
Check ‘taint’ flag

Check if your kernel was ‘tainted’ when the issue occurred, as the event that made the kernel set this flag might be causing the issue you face.

The kernel marks itself with a ‘taint’ flag when something happens that might lead to follow-up errors that look totally unrelated. The issue you face might be such an error if your kernel is tainted. That’s why it’s in your interest to rule this out early before investing more time into this process.

This is the only reason why this step is here, as this process later will tell you to install the latest mainline kernel; you will need to check the taint flag again then, as that’s when it matters because it’s the kernel the report will focus on.

On a running system is easy to check if the kernel tainted itself: if `cat /proc/sys/kernel/tainted` returns ‘0’ then the kernel is not tainted and everything is fine. Checking that file is impossible in some situations; that’s why the kernel also mentions the taint status when it reports an internal problem (a “kernel bug”), a recoverable error (a “kernel Oops”) or a
# Table for decoding tainted state

<table>
<thead>
<tr>
<th>Bit</th>
<th>Log</th>
<th>Number</th>
<th>Reason that got the kernel tainted</th>
</tr>
</thead>
<tbody>
<tr>
<td>0</td>
<td>G/P</td>
<td>1</td>
<td>proprietary module was loaded</td>
</tr>
<tr>
<td>1</td>
<td>/F</td>
<td>2</td>
<td>module was force loaded</td>
</tr>
<tr>
<td>2</td>
<td>/S</td>
<td>4</td>
<td>kernel running on an out of specification system</td>
</tr>
<tr>
<td>3</td>
<td>/R</td>
<td>8</td>
<td>module was force unloaded</td>
</tr>
<tr>
<td>4</td>
<td>/M</td>
<td>16</td>
<td>processor reported a Machine Check Exception (MCE)</td>
</tr>
<tr>
<td>5</td>
<td>/B</td>
<td>32</td>
<td>bad page referenced or some unexpected page flags</td>
</tr>
<tr>
<td>6</td>
<td>/U</td>
<td>64</td>
<td>taint requested by userspace application</td>
</tr>
<tr>
<td>7</td>
<td>/D</td>
<td>128</td>
<td>kernel died recently, i.e. there was an OOPS or BUG</td>
</tr>
<tr>
<td>8</td>
<td>/A</td>
<td>256</td>
<td>ACPI table overridden by user</td>
</tr>
<tr>
<td>9</td>
<td>/W</td>
<td>512</td>
<td>kernel issued warning</td>
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<tr>
<td>10</td>
<td>/C</td>
<td>1024</td>
<td>staging driver was loaded</td>
</tr>
<tr>
<td>11</td>
<td>/I</td>
<td>2048</td>
<td>workaround for bug in platform firmware applied</td>
</tr>
<tr>
<td>12</td>
<td>/O</td>
<td>4096</td>
<td>externally-built (&quot;out-of-tree&quot;) module was loaded</td>
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<tr>
<td>13</td>
<td>/E</td>
<td>8192</td>
<td>unsigned module was loaded</td>
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<tr>
<td>14</td>
<td>/L</td>
<td>16384</td>
<td>soft lockup occurred</td>
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<td>15</td>
<td>/K</td>
<td>32768</td>
<td>kernel has been live patched</td>
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<td>16</td>
<td>/X</td>
<td>65536</td>
<td>auxiliary taint, defined for and used by distros</td>
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<tr>
<td>17</td>
<td>/T</td>
<td>131072</td>
<td>kernel was built with the struct randomization plugin</td>
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</tbody>
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driver hangs during normal usage - a reboot of my notebook (ASUS ROG Strix G533QX GeForce RTX 3080) is needed to have wifi working again. It happens twice a time a day.

I am attaching a syslog.
Hi! I got a brand new Wifi router that already supports Wifi 11XP and WPA 6NG. My laptop (Lenovo T14s AMD Gen2, Fedora 36) isn't able to connect to it, not even with the latest -rc release (6.0-rc4, vanilla, untainted). I checked dmesg and noticed warning messages from the iwlwifi driver when I try to connect, among them:

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[ 35.890339] iwlwifi 0000:00:14.3: Microcode SW error detected. Restarting 0x0.
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Is that a known problem? Can I reconfigure iwlwifi or my router to circumvent the problem somehow?

Dmesg: https://example.org/myfiles/dmesg.txt [Connection attempt starting at timecode 0:35:17]
Kernel-Config: https://example.org/myfiles/config.txt [based on Fedora's]

Ciao, Thorsten
what's important

a) ensure your kernel is vanilla
b) base your report on a fresh kernel
c) ensure your kernel's and system's integrity [continued]
Is your hardware working reliably and as specified?

Is your kernel's environment well?
memtest: great idea!
overclocking: stupid idea!
issue with file-system? fsck the volume!
all required firmware files present?
...
decent report; integrity;

check `dmesg -H`
look out for anything red or bold,
it might be related to your problem
PCI bus 0000:02: Allocating resources
PCI bus 0000:03: Allocating resources
PCI bus 0000:04: Allocating resources
PCI bus 0000:05: Allocating resources
PCI bus 0000:06: Allocating resources
done.

thermal thermal_zone0: failed to read out thermal zone (-61)

PM: suspend exit

Generic FE-GE Realtek PHY r8169-0-200:00: attached PHY driver (mii_bus:phy_addr=r8169-0-200:00, irq=MAC)

r8169 0000:02:00.0 enp2s0f0: Link is Down
psmouse serio1: Touchpad at isa0060/serio1/input0 lost sync at byte 6
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psmouse serio1: Touchpad at isa0060/serio1/input0 lost sync at byte 6
psmouse serio1: Touchpad at isa0060/serio1/input0 lost sync at byte 6
psmouse serio1: issuing reconnect request

r8169 0000:02:00.0 enp2s0f0: Link is Down
PM: suspend entry (deep)

Filesystems sync: 0.029 seconds
Bluetooth: hci0: Suspend notifier action (3) failed: 2
Freezing user space processes ... (elapsed 0.004 seconds) done.
OOM killer disabled.
Freezing remaining freezable tasks ... (elapsed 0.001 seconds) done.
printk: Suspending console(s) (use no_console_suspend to debug)
[drm] free PSP TMR buffer
PM: suspend devices took 0.341 seconds
ACPI: EC: interrupt blocked
amdgpu 0000:06:00.0: amdgpu: MODE2 reset
ACPI: PM: Preparing to enter system sleep state S3
ACPI: EC: event blocked

decent report;

what's important

a) ensure your kernel is vanilla
b) base your report on a fresh kernel
c) ensure your kernel's and system's integrity
what's important

a) ensure your kernel is vanilla
b) base your report on a fresh kernel
c) ensure your kernel's and system's integrity
d) submit your report to the right place
decent report; vanilla;

why? because developers can't have their eyes everywhere!
Build your own 'Linus land'

Full instructions inside

O RLY?

Linux kernel community
the right place depends on the subsystem where you suspect the issue originates :-/
Welcome to Kernel.org Bugzilla

Please use your distribution's bug tracking tools

This bugzilla is for reporting bugs against **upstream Linux kernels**.

If you did not compile your own kernel from scratch, you are probably in the wrong place. Please use the following links to report a bug to your distribution instead:

- Ubuntu
- Fedora
- Arch
- Mint
- Debian
- Red Hat
- OpenSUSE
- SUSE

To report an issue upstream, please consult this document before opening a new bug:

[Reporting Issues](#)

With questions about this site contact [bugzilla admins](#).
Please check the [FAQ](#) before you do so.
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Check where you need to report your issue

Locate the driver or kernel subsystem that seems to be causing the issue. Find out how and where its developers expect reports. Note: most of the time this won’t be bugzilla.kernel.org, as issues typically need to be sent by mail to a maintainer and a public mailing list.

It’s crucial to send your report to the right people, as the Linux kernel is a big project and most of its developers are only familiar with a small subset of it. Quite a few programmers for example only care for just one driver, for example one for a WiFi chip; its developer likely will only have small or no knowledge about the internals of remote or unrelated “subsystems”, like the TCP stack, the PCIe/PCI subsystem, memory management or file systems.

Problem is: the Linux kernel lacks a central bug tracker where you can simply file your issue and make it reach the developers that need to know about it. That’s why you have to find the right place and way to report issues yourself. You can do that with the help of a script (see below), but it mainly targets kernel developers and experts. For everybody else the MAINTAINERS file is the better place.

How to read the MAINTAINERS file

To illustrate how to use the MAINTAINERS file, lets assume the WiFi in your Laptop suddenly misbehaves after updating the kernel. In that case it’s likely an issue in the WiFi driver. Obviously it could also be some code it builds on top of that driver, but let’s focus on the driver.

In this case the MAINTAINERS file will have a line like: wifi@alacritech.com for example. This is the email address of the person who is in charge of the WiFi driver. You can contact them by mail with the details of the issue.

Of course you could have looked up this email address online by searching for the name “WiFi driver” or “WiFi” and seeing if you can find something on the web. This is even easier than finding the script as shown below.

In the end though you will likely find that not all issues are directly reported. A common issue when running an older kernel is that the newer kernel will not work at all. Then either you have to investigate what is broken or you have to contact the developers of the older kernel to tell them that the new one does not work.
Check where you need to report your issue

Locate the driver or kernel subsystem that seems to be causing the issue. Find out how and where its developers expect reports. Note: most of the time this won’t be bugzilla.kernel.org, as issues typically need to be sent by mail to a maintainer and a public mailing list.

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The MAINTAINERS file is typically located in the kernel source tree, in the arch directory. Here’s an example of the WiFi driver (ixgbe) in arch/x86/ixgbe/MAINTAINERS:

```
This subsystem is the iXGBe "ethernet" device driver.

The maintainer is:

  Christian Frosch (ixgbe@lxr.linux-netdev.org)
```

This indicates that the WiFi driver is maintained by Christian Frosch and offers a contact email address for email. You can send your report to this email address.
### BT8XXGPIO DRIVER

<table>
<thead>
<tr>
<th>Mail</th>
<th>Michael Buesch <a href="mailto:m@bues.ch">m@bues.ch</a></th>
</tr>
</thead>
<tbody>
<tr>
<td>Status</td>
<td>Maintained</td>
</tr>
<tr>
<td>Web-page</td>
<td><a href="http://bu3sch.de/btgpio.php">http://bu3sch.de/btgpio.php</a></td>
</tr>
<tr>
<td>Files</td>
<td>drivers/gpio/gpio-bt8xx.c</td>
</tr>
</tbody>
</table>

### BTRFS FILE SYSTEM

<table>
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<tr>
<th>Mail</th>
<th>Chris Mason <a href="mailto:clm@fb.com">clm@fb.com</a>, Josef Bacik <a href="mailto:josef@toxicpanda.com">josef@toxicpanda.com</a>, David Sterba <a href="mailto:dsterba@suse.com">dsterba@suse.com</a></th>
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<td>Web-page</td>
<td><a href="http://btrfs.wiki.kernel.org/">http://btrfs.wiki.kernel.org/</a></td>
</tr>
<tr>
<td>Patchwork</td>
<td><a href="http://patchwork.kernel.org/project/linux-btrfs/list/">http://patchwork.kernel.org/project/linux-btrfs/list/</a></td>
</tr>
<tr>
<td>IRC Chat</td>
<td>irc://irc.libera.chat/btrfs</td>
</tr>
<tr>
<td>SCM</td>
<td>git git://git.kernel.org/pub/scm/linux/kernel/git/kdave/linux.git</td>
</tr>
<tr>
<td>Files</td>
<td>filesystems/btrfs fs/btrfs/ include/linux/btrfs* include/uapi/linux/btrfs*</td>
</tr>
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</table>
decent report; vanilla;

most maintainers & subsystems want reports by email
decent report; vanilla;

most maintainers & subsystems want reports by email with a mailing list in CC
### BT8XX_GPIO DRIVER

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</tr>
<tr>
<td>chat</td>
<td>irc://irc.libera.chat/btrfs</td>
</tr>
<tr>
<td>SCM</td>
<td>git git://git.kernel.org/pub/scm/linux/kernel/git/kdave/linux.git</td>
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Web-page: http://btrfs.wiki.kernel.org/
Patchwork: http://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
Files: filesystems/btrfs fs/btrfs/include/linux/btrfs* include/uapi/linux/btrfs*
a small number of subsystems actually use bug trackers
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
SCM: git https://gitlab.freedesktop.org/aod5f/linux.git
bugs: https://gitlab.freedesktop.org/drm/amd/-/issues
chat: irc://irc.oftc.net/radeon
Files: drivers/gpu/drm/amd drivers/gpu/drm/radeon/include/uapi/drm/amdgpu_drm.h
include/uapi/drm/radeon_drm.h

RADEON FRAMEBUFFER DISPLAY DRIVER

Mail: Benjamin Herrenschildt <benh@kernel.crashing.org>
Mailing list: linux-fbdev@vger.kernel.org
Status: Maintained
a small number of subsystems actually use bugzilla.kernel.org
ACPI

Mail: “Rafael J. Wysocki” <rafael@kernel.org>
Reviewer: Len Brown <lenb@kernel.org>
Mailing list: linux-acpi@vger.kernel.org
Status: Supported
Web-page: https://01.org/linux-acpi
Patchwork: https://patchwork.kernel.org/project/linux-acpi/list/
bugs: https://bugzilla.kernel.org

ACPI LPEI

https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git/tree/MAINTAINERS
decent report; vanilla;

devs of many (most?) other subsystem never get aware of bugs filed in bugzilla.kernel.org

and the reports hence often are ignored
driver hangs during normal usage - a reboot of my notebook (ASUS ROG Strix G533QS GeForce RTX 3880) is needed to have wifi working again. It happens like a few times a day.

I am attaching a syslog.

Ubuntu 22.04 x64-64

kernel: 5.15.0-48-generic #54-Ubuntu
Hi! I got a brand new Wifi router that already supports Wifi 11XP and WPA 6NG. My laptop (Lenovo T14s AMD Gen2, Fedora 36) isn't able to connect to it, not even with the latest -rc release (6.0-rc4, vanilla, untainted). I checked dmesg and noticed warning messages from the iwlwifi driver when I try to connect, among them:

```
[ 35.890339] iwlwifi 0000:00:14.3: Microcode SW error detected. Restarting 0x0.
```

Is that a known problem? Can I reconfigure iwlwifi or my router to circumvent the problem somehow?

Dmesg: https://example.org/myfiles/dmesg.txt [Connection attempt starting at timecode 0:35:17]
Kernel-Config: https://example.org/myfiles/config.txt [based on Fedora's]

Ciao, Thorsten
what's important

a) ensure your kernel is vanilla
b) base your report on a fresh kernel
c) ensure your kernel's and system's integrity
d) submit your report to the right place
what's important

a) ensure your kernel is vanilla
b) base your report on a fresh kernel
c) ensure your kernel's and system's integrity
d) submit your report to the right place
e) depict your problem adequately
decent report; vanilla;

why? because like everybody developers value their time and like every human their attention span is limited, too
Build your own 'Linus land'
"how to write a good report" is worth its own, quite long talk :/-
"how to write a good report" is worth its own, quite long talk :-/

hence we'll just briefly cover things important for kernel bugs
decent report; depiction;

try to keep the depiction of the problem short
Hi! I got a brand new Wifi router that already supports Wifi 11XP and WPA 6NG. My laptop (Lenovo T14s AMD Gen2, Fedora 36) isn't able to connect to it, not even with the latest -rc release (6.0-rc4, vanilla, untainted). I checked dmesg and noticed warning messages from the iwlwifi driver when I try to connect, among them:

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Kernel-Config: https://example.org/myfiles/config.txt [based on Fedora's]

Ciao, Thorsten
if the problem is complicated, write a detailed description and put a TLDR on top of it. Many people will only read the first paragraph, hence try to grab their attention there.
take some time to find a good and descriptive subject

that's the only thing many people will read!
Hi! I got a brand new Wifi router that already supports Wifi 11XP and WPA 6NG. My laptop (Lenovo T14s AMD Gen2, Fedora 36) isn't able to connect to it, not even with the latest -rc release (6.0-rc4, vanilla, untainted). I checked dmesg and noticed warning messages from the iwlwifi driver when I try to connect, among them:

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Kernel-Config: https://example.org/myfiles/config.txt [based on Fedora's]

Ciao, Thorsten
state the version of your kernel, if it's vanilla, and its taint status
state the version of your kernel, if it's vanilla, and its taint status; mention distro and when relevant details on hardware, too
Hi! I got a brand new Wifi router that already supports Wifi 11XP and WPA 6NG. My laptop (Lenovo T14s AMD Gen 2, Fedora 36) isn't able to connect to it, not even with the latest -rc release (6.0-rc4, vanilla, untainted). I checked dmesg and noticed warning messages from the iwlwifi driver when I try to connect, among them:

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Dmesg: https://example.org/myfiles/dmesg.txt [Connection attempt starting at timecode 0:35:17]
Kernel-Config: https://example.org/myfiles/config.txt [based on Fedora's]

Ciao, Thorsten
upload & link or attach clearly relevant logs and details
for mailed reports prefer linking, for example by creating a ticket in bugzilla.kernel.org where you upload those files
decent report; depiction;

output from `dmesg` and `lspci -nn` almost always is relevant; kernel's .config often, too

for some issues, more will be needed: lsusb, lsscsi, ...
decent report; depiction;

ensure not to overload the report!
Hi! I got a brand new Wifi router that already supports Wifi 11XP and WPA 6NG. My laptop (Lenovo T14s AMD Gen2, Fedora 36) isn't able to connect to it, not even with the latest -rc release (6.0-rc4, vanilla, untainted). I checked dmesg and noticed warning messages from the iwlwifi driver when I try to connect, among them:

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Dmesg: https://example.org/myfiles/dmesg.txt
Kernel-Config: https://example.org/myfiles/config.txt [based on Fedora's]

Ciao, Thorsten
decent report; depiction;

once finished, review subject and first paragraph again getting them right is crucial!
decent report; depiction;

review the tone, too
decent report; depiction;

reminder, think of it as asking volunteers for a favor;
reminder, think of it as asking volunteers for a favor; volunteers that you know are stressed and really short on time –
decent report; depiction;

reminder, think of it as asking volunteers for a favor; volunteers that you know are stressed and really short on time – but you nevertheless want to motivate them to spend their time on your behalf
hence makes it obvious that you did your part of the job
hence makes it obvious that you did your part of the job, as that makes it is attractive & easy for the volunteers to help you
1. create a decent report

   a) ensure your kernel is vanilla
   b) base your report on a fresh kernel
   c) ensure your kernel's and system's integrity
   d) submit your report to the right place
   e) depict the problem adequately
[ act 1 ]

the most important aspects to create a decent report
[ interlude ]

are all issues equal?
[ act 2 ]

how the kind of issue matters
how the kind of issue matters

a) issues someone is obliged to address
how the kind of issue matters

a) issues someone is obliged to address

I. security vulnerabilities
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
kind of issue; must fix;

how the kind of issue matters

a) issues someone is obliged to address

I. security vulnerabilities
II. devastating bugs
kind of issue; must fix; devastating;
something really really bad
data is lost or damaged, hardware is bricked, ...
kind of issue; must fix;

if you deal with one of these, make it obvious in your report

and consider CCing Linus
how the kind of issue matters

a) issues someone is obliged to address

I. security vulnerabilities
II. devastating bugs
III. regressions
kind of issue; mustfix; regressions;

regression == something breaks when updating the kernel

say from 5.15 -> 5.16 or from 5.17.3 -> 5.17.4
"we don't cause regressions"

the first rule of Linux kernel development
kind of issue; mustfix; regressions;

there is some fine print when it comes to the "we don't cause regressions" rule
Reporting regressions

“We don’t cause regressions” is the first rule of Linux kernel development; Linux founder and lead developer Linus Torvalds established it himself and ensures it’s obeyed.

This document describes what the rule means for users and how the Linux kernel’s development model ensures to address all reported regressions; aspects relevant for kernel developers are left to Handling regressions.

The important bits (aka “TL;DR”)

1. It’s a regression if something running fine with one Linux kernel works worse or not at all with a newer version. Note, the newer kernel has to be compiled using a similar

kind of issue; mustfix; regressions;

more about this hopefully in another mentorship session
how the kind of issue matters

a) issues someone is obliged to address

I. security vulnerabilities
II. devastating bugs
III. regressions
how the kind of issue matters

a) issues someone is obliged to address
b) issues most likely to be ignored
how the kind of issue matters

b) issues most likely to be ignored

I. known deficits
kind of issue; unlikely; deficits;

Linux contains many incomplete drivers
kind of issue; unlikely; deficits;

no volunteer with enough time and/or motivation to improve things
kind of issue; unlikely; deficits;

no volunteer with enough time and/or motivation to improve things

or some real-world issues prevents improvements
kind of issue; unlikely; deficits;

check internet and docs for known deficits can save you from wasting time on a useless report
how the kind of issue matters

b) issues most likely to be ignored

I. known deficits
how the kind of issue matters

b) issues most likely to be ignored

I. known deficits

II. code without an active maintainer
kind of issue; unlikely; w/o maintainer;

orphaned code often remains, as it useful for people
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/
kind of issue; unlikely; w/o maintainer;

sending at least a quick brief report
definitely a good idea
CAFE CMOS INTEGRATED CAMERA CONTROLLER DRIVER

Mailing list: linux-media@vger.kernel.org
Status: Orphan
SCM: git git://linuxtv.org/media_tree.git
Files: Documentation/admin-guide/media/cafe_ccic*
drivers/media/platform/marvell-ccic/

CAIF NETWORK LAYER

Mailing list: netdev@vger.kernel.org
Status: Orphan
Files: Documentation/networking/caif/drivers/net/caif/
kind of issue; unlikely; w/o maintainer;

sending at least a quick brief report likely worth it
how the kind of issue matters

a) issues someone is obliged to address
b) issues most likely to be ignored
how the kind of issue matters

a) issues someone is obliged to address
b) issues most likely to be ignored
c) all the other issues
what matters for these is quickly explained:
kind of issue; unlikely; the rest;

the quality of your report!
[ act 2 ]

how the kind of issue matters
[ act 3 ]
how to ideally handle an actual bug report from start to finish
Step-by-step guide how to report issues to the kernel maintainers

The above TL;DR outlines roughly how to report issues to the Linux kernel developers. It might be all that’s needed for people already familiar with reporting issues to Free/Libre & Open Source Software (FLOSS) projects. For everyone else there is this section. It is more detailed and uses a step-by-step approach. It still tries to be brief for readability and leaves out a lot of details; those are described below the step-by-step guide in a reference section, which explains each of the steps in more detail.

Note: this section covers a few more aspects than the TL;DR and does things in a slightly different order. That’s in your interest, to make sure you notice early if an issue that looks like a Linux kernel problem is actually caused by something else. These steps thus help to ensure the time you invest in this process won’t feel wasted in the end:

- Are you facing an issue with a Linux kernel a hardware or software vendor provided? Then in almost all cases you are better off to stop reading this document and reporting the issue to your vendor instead, unless you are willing to install the latest Linux version yourself. Be aware the latter will often be needed anyway to hunt down and fix issues.
- Perform a rough search for existing reports with your favorite internet search engine; additionally, check the archives of the Linux Kernel Mailing List (LKML). If you find matching reports, join the discussion instead of sending a new one.
- See if the issue you are dealing with qualifies as regression, security issue, or a really severe problem: those are ‘issues of high priority’ that need special handling in some steps that are about to follow.
- Make sure it’s not the kernel’s surroundings that are causing the issue you face.
- Create a fresh backup and put system repair and restore tools at hand.
- Ensure your system does not enhance its kernels by building additional kernel modules on-the-fly, which solutions like DKMS might be doing locally without your knowledge.
- Check if your kernel was ‘tainted’ when the issue occurred, as the event that made the kernel set this flag might be causing the issue you face.
- Write down coarsely how to reproduce the issue. If you deal with multiple issues at once, create separate notes for each of them.
[act 3, first section]
preparations
(1) ensure you have a kernel suitable for reporting bugs upstream or are willing to install one.
preparations; suitable kernel;

why? Linux developers don't care about most kernels used in the wild!
preparations;

(2) search for exiting reports to join
preparations; search;

why? can safe yourself a lot of time & trouble!

and other people, too!
Tired of being tracked online? We can help.

Get seamless privacy protection on your browser for free with one download:

- Private Search
- Tracker Blocking
- Site Encryption

Add DuckDuckGo to Firefox

Trusted by tens of millions worldwide!
All of lore.kernel.org

connection fails wpa6 search help / color / mirror / Atom feed

[PATCH net 1/1] netfilter: flowtable: Fix use after free after freeing flow table
2022-08-18 7:27 UTC

[PATCH 0/3] MT8188 IOMMU SUPPORT
2022-08-18 7:26 UTC (4+ messages)

` [PATCH 1/3] dt-bindings: mediatek: mt8188: Add binding for MM & INFRA IOMMU`

[PATCH net-next] net: sched: remove duplicate check of user rights in qdisc
2022-08-18 7:25 UTC

[PATCH] Documentation: update gce-xfstests startup guide
2022-08-18 7:23 UTC

[PATCH v4] Revert "mlxsw: core: Add the hottest thermal zone detection"
2022-08-18 7:23 UTC (4+ messages)

[PATCH] pwm: meson: Simplify probe function with dev_err_probe()
2022-08-18 7:22 UTC (3+ messages)
Welcome to Kernel.org Bugzilla

Please use your distribution's bug tracking tools

This bugzilla is for reporting bugs against **upstream Linux kernels**.

If you did not compile your own kernel from scratch, you are probably in the wrong place. Please use the following links to report a bug to your distribution instead:

Ubuntu | Fedora | Arch | Mint | Debian | Red Hat | OpenSUSE | SUSE

To report an issue upstream, please consult this document before opening a new bug:

[Reporting Issues](#)

With questions about this site contact [bugzilla admins](#).
Please check the [FAQ](#) before you do so.
remember to vary your search terms a few times!
this is crucial, nevertheless a lot of people neglect this :-/
[and thus make their own life unnecessarily hard...]
(3) classify: severe problem, regression, or issue unlikely to be addressed?
preparations; classify;

why? the first two require special handling!
and in the third case you might want to save yourself the trouble
preparations;

(4) check if your setup might be causing your problem
preparations; self-check;

why? can safe yourself a lot of trouble!

and other people, too ;)}
(5) create a fresh backup and put system repair tools at hand
preparations; backup & restore;

why? to prepare yourself for emergencies during further tests!
(6) ensure you are not using externally developed modules
preparations; no ext. modules;

why? they can cause bugs in totally different areas of the kernel!
(7) ensure your kernel is not 'tainted'
before issue occurs
preparations; tainted;

why? proceeding might not be worth it, as the taint might be due to something problematic
(8) write down briefly how to reproduce the issue.
preparations; first depiction;

why? basis for your reports\(^\text{(1)}\) and further experiments

\(^\text{(1)}\) if you deal with multiple issues at once, separate them (unless they're very strongly entangled), as you need to report them separately
preparations;

(9) regression within a stable or longterm series?
preparations; stable regressions;

why? then you can take a shortcut!
Reporting regressions within a stable and longterm kernel line

This subsection is for you, if you followed above process and got sent here at the point about regression within a stable or longterm kernel version line. You face one of those if something breaks when updating from 5.10.4 to 5.10.5 (a switch from 5.9.15 to 5.10.5 does not qualify). The developers want to fix such regressions as quickly as possible, hence there is a streamlined process to report them:

- Check if the kernel developers still maintain the Linux kernel version line you care about: go to the front page of kernel.org and make sure it mentions the latest release of the particular version line without an [EOL] tag.
- Check the archives of the Linux stable mailing list for existing reports.
- Install the latest release from the particular version line as a vanilla kernel. Ensure this kernel is not tainted and still shows the problem, as the issue might have already been fixed there. If you first noticed the problem with a vendor kernel, check a vanilla build of the last version known to work performs fine as well.
- Send a short problem report to the Linux stable mailing list (stable@vger.kernel.org) and CC the Linux regressions mailing list (regressions@lists.linux.dev); if you suspect the cause in a particular subsystem, CC its maintainer and its mailing list. Roughly describe the issue and ideally explain how to reproduce it. Mention the first version that shows the problem and the last version that’s working fine. Then wait for further instructions.

The reference section below explains each of these steps in more detail.

(10) locate driver or subsystem that seems to cause the issue
preparations; submission;

why? you need to check where the developers of that kernel subsystem expect reports to be submitted to!
testing & reporting;

(11) check the archives of that place for existing reports
testing & reporting; search again;

why? again: can safe you a lot of trouble!
[act 3, first section]
preparations
[act 3, second section] testing & reporting
(12) install a really fresh vanilla kernel – ideally mainline
testing & reporting; fresh kernel;

why? To have a kernel the developers actually care about and check if somebody fixed the problem already!
testing & reporting;

(13) ensure this kernel does not taint itself
testing & reporting; tainted, part 2;

why? we already covered this – but now it matters for real!
(14) reproduce the issue with this kernel
testing & reporting; validate;

why? to check if it already got fixed!
(15) optimize your depiction how to reproduce
testing & reporting; optimize depiction;

why? to make it really easy to grasp for others!
(16) if you deal with a stack trace(¹), consider decoding it

(¹) e.g. when your failure involves a ‘panic’, ‘Oops’, ‘warning’, or ‘BUG’ shown in `dmesg`
testing & reporting; decode;

```
[ 121.834839] CR2: 000056038b7000b0 CR3: 0000000171584000 CR4: 000000000000006f0
[ 121.835529] Call Trace:
[ 121.836202]  ? alloc_fdmem+0x20/0x50
[ 121.836841]  alloc_fdmem+0x20/0x50
[ 121.837486]  alloc_ftable+0x6a/0xf0
[ 121.838116]  dup_fd+0x1d8/0x280
[ 121.838743]  ? audit_alloc+0xc5/0x170
[ 121.839379]  copy_process.part.36+0x887/0x1ce0
[ 121.840017]  ? cp_new_stat+0x14f/0x180
[ 121.840637]  _do_fork+0xd7/0x390
[ 121.841271]  SyS_clone+0x19/0x20
[ 121.841891]  do_syscall_64+0x67/0x170
[ 121.842524]  entry_SYSCALL64_slow_path+0x25/0x25
[ 121.843159]  RIP: 0033:0x7f2775c6c95d
[ 121.843201]  RSP: 002b:00000001be03590 ff00 00000000000838
```
testing & reporting; decode;

why? tells developers the line of code where the error occurred!

but it's okay to ignore this in the initial report
testing & reporting;

(17) regression? find out when it started

narrow down the range as much as possible
testing & reporting; regression cause;

why? when done properly, it identifies the exact change causing the problem which determines who's responsible and nearly guarantees a timely fix, too
testing & reporting; regression cause;

more about this hopefully in another mentorship session about regressions
testing & reporting;

(18) compile & submit the report
testing & reporting; submission;

why? you got everything you need now!
(19) wait for reactions and keep the ball rolling
e.g. until you can accept the outcome in one way or the other
testing & reporting; keep rolling;

why? your work is not done with the submission!
testing & reporting; keep rolling;

developers might ask questions or will tell you to test something help as much as you can by reacting publicly and in a timely manner to any inquiries
testing & reporting; keep rolling;

keep in mind: a lot of developers are overloaded with work and they occasionally go on vacations, too
testing & reporting; keep rolling;

a report without a reply in two or three weeks is likely dead and forgotten

prod it, but be kind and friendly; and check if your report was really decent, as than that might be why is was ignored
testing & reporting; keep rolling;

also: new kernel versions that might fix the issue will be released

and you might not be told about the fix!
testing & reporting; keep rolling;

if there was a new mainline -rc1 released in between, check if issue still present there
testing & reporting; keep rolling;

if you don’t get any help or if it’s unsatisfying, try to help yourself

see reporting-issues.rst for details
testing & reporting;

that's it!

reporting-issues.rst has way more details on how to actually perform each of these certain steps
Step-by-step guide how to report issues to the kernel maintainers

The above TL;DR outlines roughly how to report issues to the Linux kernel developers. It might be all that’s needed for people already familiar with reporting issues to Free/Libre & Open Source Software (FLOSS) projects. For everyone else there is this section. It is more detailed and uses a step-by-step approach. It still tries to be brief for readability and leaves out a lot of details; those are described below the step-by-step guide in a reference section, which explains each of the steps in more detail.

Note: this section covers a few more aspects than the TL;DR and does things in a slightly different order. That’s in your interest, to make sure you notice early if an issue that looks like a Linux kernel problem is actually caused by something else. These steps thus help to ensure the time you invest in this process won’t feel wasted in the end:

- Are you facing an issue with a Linux kernel a hardware or software vendor provided? Then in almost all cases you are better off to stop reading this document and reporting the issue to your vendor instead, unless you are willing to install the latest Linux version yourself. Be aware the latter will often be needed anyway to hunt down and fix issues.
- Perform a rough search for existing reports with your favorite internet search engine; additionally, check the archives of the Linux Kernel Mailing List (LKML). If you find matching reports, join the discussion instead of sending a new one.
- See if the issue you are dealing with qualifies as regression, security issue, or a really severe problem: those are ‘issues of high priority’ that need special handling in some steps that are about to follow.
- Make sure it’s not the kernel’s surroundings that are causing the issue you face.
- Create a fresh backup and put system repair and restore tools at hand.
- Ensure your system does not enhance its kernels by building additional kernel modules on-the-fly, which solutions like DKMS might be doing locally without your knowledge.
- Check if your kernel was ‘tainted’ when the issue occurred, as the event that made the kernel set this flag might be causing the issue you face.
- Write down coarsely how to reproduce the issue. If you deal with multiple issues at once, create separate notes for each of...
[ finally() ]

let's sum things up!
think of a bug report like asking for a favor from a volunteer
think of a bug report like asking for a favor from a volunteer
be kind and make it easy to help you,
then most of the time you will be helped
that's why a decent report is so important!
that's why a decent report is in your own interest!
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- Write down coarsely how to reproduce the issue. If you deal with multiple issues at once, create separate notes for each of...
finally()

submit your report to the appropriate place
ensure the report covers aspects important for developers, but…
finally()

...is still is easy & quickly to grasp for everyone
finally()

[and make it obvious if you deal with a regression or severe issue]
but most importantly: avoid red-flags by doing the following
finally()

test & report with a kernel that's
Finally()  

test & report with a kernel that's really fresh
finally()

test & report with a kernel that's really fresh, untainted
test & report with a kernel that's really fresh, untainted, and vanilla!
finally()

test & report with a kernel that's really fresh, untainted, and vanilla!

[and mentioned in your report that you did so!]
finally()

that's it; questions?
Thorsten Leemhuis

mail: linux@leemhuis.info
GPG Key: 0x72B6E6EF4C583D2D

#fediverse: @kernellogger@fosstodon.org (en),
@knurd42@social.linux.pizza (en)

#EOF
Hi! Since updating from 5.19.5 to latest mainline (6.0-rc4, vanilla, untainted) my Laptop (Lenovo T14s AMD Gen2 with Fedora 36) my systems doesn't show any WiFi devices anymore. I noticed these error msgs in dmesg:

```
[    2.065312] iwlwifi 0000:00:14.3: enabling device (0000 -> 0002)
[    2.199881] iwlwifi: probe of 0000:00:14.3 failed with error -110
```

Does anyone have an idea what might be wrong here? Or is somebody maybe even working on a fix already? If not I'd be willing to perform a bisection to get down to the root of the problem.

Dmesg: https://example.org/myfiles/dmesg.txt
Kernel-Config: https://example.org/myfiles/config.txt [based on Fedora's]

Ciao, Thorsten