

Reporting and tracking regressions across the ecosystem

Gustavo Padovan (Collabora)
Ricardo Cañuelo (Collabora)
Thorsten Leemhuis

The problem

Regressions are hard!

Getting regressions reported, tracked and fixed is a complex process.

Goals for the BoF

Hear you beyond the frustration.

- What can we do to improve?
- What are some of the key bottlenecks (beyond maintainers time)?
- How can regzbot and CI systems help more?

Before we dive into the discussion, short update of **regzbot** and other open topics that we missed on Monday's talk

Thorsten's kernel regression tracking efforts in a nutshell

Thorsten Leemhuis

Doing regression tracking
for ~2 years now

Doing it with the help of regzbot,
a "regression tracking bot" I wrote

a regression report from Jiri in
ZHc2fm+9daF6cgCE@krava
illustrates how it works

linux-kernel.vger.kernel.org archive mirror

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From: Jiri Olsa <olsajiri@gmail.com>
To: Lorenzo Stoakes <lstoakes@gmail.com>
Cc: linux-mm@kvack.org, linux-kernel@vger.kernel.org,
linux-fsdevel@vger.kernel.org, [...]
Subject: [Re: \[PATCH v8 1/4\] fs/proc/kcore: avoid bounce buffer for ktext data](#)
Date: Wed, 31 May 2023 13:58:54 +0200 [\[thread overview\]](#)
Message-ID: <ZHc2fm+9daF6cgCE@krava> ([raw](#))
In-Reply-To: <fd39b0bfa7edc76d360def7d034baaee71d90158.1679566220.git.lstoakes@gmail.com>

On Thu, Mar 23, 2023 at 10:15:16AM +0000, Lorenzo Stoakes wrote:
> Commit df04abfd181a ("fs/proc/kcore.c: Add bounce buffer for ktext data")
> introduced the use of a bounce buffer to retrieve kernel text data for
> /proc/kcore in order to avoid failures arising from hardened user copies
> [...]

hi,
sorry for late feedback, but looks like this one breaks reading
/proc/kcore with objdump for me:

```
# cat /proc/kallsyms | grep ksys_read  
ffffffff8150ebc0 T ksys_read  
# objdump -d --start-address=0xffffffff8150ebc0 --stop-address=0xffffffff8150ebd0 /proc/kcore
```

```
/proc/kcore:      file format elf64-x86-64
```

```
objdump: Reading section load1 failed because: Bad address
```


From: "Linux regression tracking (Thorsten Leemhuis)" <regressions@leemhuis.info>
To: Jiri Olsa <olsajiri@gmail.com>, Lorenzo Stoakes <lstoakes@gmail.com>
Cc: linux-mm@kvack.org, linux-kernel@vger.kernel.org,
linux-fsdevel@vger.kernel.org, [...]
Subject: Re: [PATCH v8 1/4] fs/proc/kcore: avoid bounce buffer for ktext data
Date: Mon, 24 Jul 2023 11:38:17 +0200 [thread overview]
Message-ID: <d452d228-9d62-1511-5d87-dc9bd84d0cda@leemhuis.info> (raw)
In-Reply-To: <ZHc2fm+9daF6cgCE@krava>

On 31.05.23 13:58, Jiri Olsa wrote:

> On Thu, Mar 23, 2023 at 10:15:16AM +0000, Lorenzo Stoakes wrote:
>> Commit df04abfd181a ("fs/proc/kcore.c: Add bounce buffer for ktext data")
>> introduced the use of a bounce buffer to retrieve kernel text data for
>> /proc/kcore in order to avoid failures arising from hardened user copies
>> enabled by CONFIG_HARDENED_USERCOPY in check_kernel_text_object().
>> [...]
>> Signed-off-by: Lorenzo Stoakes <lstoakes@gmail.com>
>> Reviewed-by: David Hildenbrand <david@redhat.com>
>
> sorry for late feedback, but looks like this one breaks reading
> /proc/kcore with objdump for me:
> [...]

Thanks for the report. To be sure the issue doesn't fall through the cracks unnoticed, I'm adding it to regzbot, the Linux kernel regression tracking bot:

#regzbot ^introduced 2e1c017077

#regzbot title mm / fs/proc/kcore: reading /proc/kcore with objdump broke

#regzbot ignore-activity

side note: Jiri could have added the report
to the tracking himself by including:

#regzbot introduced 2e1c017077

```
2023-03-23 10:15 ` [PATCH v8 1/4] fs/proc/kcore: avoid bounce buffer for ktext data Lorenzo Stoakes
2023-05-31 11:58 ` Jiri Olsa
2023-07-21 13:48 ` Baoquan He [this message]
2023-07-21 14:13 ` Jiri Olsa
2023-07-24 6:23 ` David Hildenbrand
2023-07-24 8:08 ` Baoquan He
2023-07-24 8:18 ` Jiri Olsa
2023-07-24 14:33 ` Baoquan He
2023-07-31 19:21 ` Lorenzo Stoakes
2023-07-31 19:24 ` David Hildenbrand
2023-07-31 19:40 ` Lorenzo Stoakes
2023-07-31 20:34 ` Jiri Olsa
2023-07-31 21:12 ` Lorenzo Stoakes
2023-07-31 21:50 ` Jiri Olsa
2023-07-31 21:58 ` Lorenzo Stoakes
2023-07-24 9:38 ` Linux regression tracking (Thorsten Leemhuis)
```

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From: Lorenzo Stoakes <lstoakes@gmail.com>
To: linux-mm@kvack.org, linux-kernel@vger.kernel.org,
Andrew Morton <akpm@linux-foundation.org>
Cc: Baoquan He <bhe@redhat.com>, Uladzislau Rezkі <urezki@gmail.com>,
linux-fsdevel@vger.kernel.org, Jiri [...]
Subject: [\[PATCH\] fs/proc/kcore: reinstate bounce buffer for KCORE_TEXT regions](#)
Date: Mon, 31 Jul 2023 22:50:21 +0100 [\[thread overview\]](#)
Message-ID: <20230731215021.70911-1-lstoakes@gmail.com> ([raw](#))

Some architectures do not populate the entire range categorised by KCORE_TEXT, so we must ensure that the kernel address we read from is valid.

Unfortunately there is no solution currently available to do so with a purely iterator solution so reinstate the bounce buffer in this instance so we can use `copy_from_kernel_nofault()` in order to avoid page faults when regions are unmapped.

This change partly reverts commit 2e1c0170771e ("fs/proc/kcore: avoid bounce buffer for ktext data"), reinstating the bounce buffer, but adapts the code to continue to use an iterator.

Fixes: 2e1c0170771e ("fs/proc/kcore: avoid bounce buffer for ktext data")

Reported-by: Jiri Olsa <olsajiri@gmail.com>

Closes: <https://lore.kernel.org/all/ZHc2fm+9daF6cgCE@krava>

Cc: stable@vger.kernel.org

Signed-off-by: Lorenzo Stoakes <lstoakes@gmail.com>

[fs/proc/kcore.c](#) | 26 ++++++

Thread overview: 11+ messages / expand[flat|nested] mbox.gz Atom feed top

2023-07-31 21:50 Lorenzo Stoakes [this message]

2023-07-31 22:11 ` [PATCH] fs/proc/kcore: reinstate bounce buffer for KCORE_TEXT regions Jiri Olsa

2023-08-01 8:27 ` Will Deacon

2023-08-01 9:05 ` David Hildenbrand

2023-08-01 16:33 ` Lorenzo Stoakes

2023-08-01 16:34 ` David Hildenbrand

2023-08-01 16:39 ` Lorenzo Stoakes

2023-08-01 18:14 ` David Hildenbrand

2023-08-01 15:57 ` Baoquan He

2023-08-01 16:01 ` Baoquan He

2023-08-01 16:22 ` Lorenzo Stoakes



index : kernel/git/next/linux-next.git

master

The linux-next integration testing tree

Linux N

[about](#) [summary](#) [refs](#) [log](#) [tree](#) **[commit](#)** [diff](#) [stats](#)

log msg

fs/proc/kcore: reinstate bounce buffer for KCORE_TEXT regions

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[lstoakes@gmail.com: correct comment to be strictly correct about reasoning]

Link: <https://lkml.kernel.org/r/525a3f14-74fa-4c22-9fca-9dab4de8a0c3@lucifer.local>

Link: <https://lkml.kernel.org/r/20230731215021.70911-1-lstoakes@gmail.com>

Fixes: 2e1c0170771e ("fs/proc/kcore: avoid bounce buffer for ktext data")

Signed-off-by: Lorenzo Stoakes <lstoakes@gmail.com>

Reported-by: Jiri Olsa <olsajiri@gmail.com>

Closes: <https://lore.kernel.org/all/ZHc2fm+9daF6cgCE@krava>

Tested-by: Jiri Olsa <jolsa@kernel.org>

Tested-by: Will Deacon <will@kernel.org>



index : kernel/git/torvalds/linux.git

Linux kernel source tree

master ▾

Linu

[about](#) [summary](#) [refs](#) [log](#) [tree](#) **[commit](#)** [diff](#) [stats](#)

log msg ▾

fs/proc/kcore: reinstate bounce buffer for KCORE_TEXT regions

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Tested-by: Jiri Olsa <jolsa@kernel.org>

Tested-by: Will Deacon <will@kernel.org>

works somewhat similar with
bugzilla.kernel.org links
[and arbitrary links as well, up to a point]

I keep an eye on tracked
regressions

I keep an eye on tracked
regressions
and will show up with questions
if things stall ;-)

Linux kernel regression status

[\[next\]](#) [\[mainline\]](#) [\[stable/longterm\]](#) • [\[new\]](#) • [\[all\]](#) • [\[resolved\]](#) [\[inconclusive\]](#)

current cycle (v6.6.. aka v6.6-post), culprit identified

- [5cfd69775eb5](#) ▶ *mainline build failure due to 5cfd69775eb5 ("bcacheefs: Array bounds fixes")* by [Sudip Mukherjee \(Codethink\)](#)
Earliest & latest [activity](#): [6 days ago](#) & [17 hours ago](#). Noteworthy: [\[fix incoming\]](#).
- [7966f319c66d](#) ▶ *mainline build failure due to 7966f319c66d ("drm/amd/display: Introduce DML2")* by [Sudip Mukherjee \(Codethink\)](#)
Earliest & latest [activity](#): [4 days ago](#) & [53 hours ago](#).
- [b6e3d1ba4fcf](#) ▶ *new iwlwifi firmware statistics API triggers stack trace* by [Niklāvs Kolesņikovs](#) and [Niklāvs Kolesņikovs](#)
Earliest & latest [activity](#): [4 days ago](#) & [3 days ago](#).
- [9c66dc94b62a](#) ▶ *mainline build failure due to 9c66dc94b62a ("bpf: Introduce css_task open-coded iterator kfuncs")* by [Sudip Mukherjee \(Codethink\)](#)
Earliest & latest [activity](#): [4 days ago](#) & [4 days ago](#). Noteworthy: [\[fix incoming\]](#).

current cycle (v6.6.. aka v6.6-post), unknown culprit

none known by regzbot

previous cycle (v6.5..v6.6), culprit identified, with activity in the past three months

- [6faddda69f62](#)
(v6.6-rc1) ▶ *stable offsets directory operation support triggers offset_ctx->xa memory leak* by [vladbv](#) and [vladbv](#)
Earliest & latest [activity](#): [26 days ago](#) & [3 days ago](#). Noteworthy: [\[1\]](#).
- [088a40980efb](#)
(v6.6-rc1) ▶ *Regression apparently caused by commit 088a40980efbc2c449b72f0f2c7ebd82f71d08e2 "ASoC: amd: acp: add pm ops support for acp pci driver"* by [Marian Postevca](#)
Earliest & latest [activity](#): [14 weeks ago](#) & [3 days ago](#).
- [9d1bd9346241](#)
(v6.6-rc1) ▶ *Logitech G915 Wireless Keyboard key event only detects few key codes* by [LinuxCat](#) and [LinuxCat](#)
Earliest & latest [activity](#): [5 days ago](#) & [4 days ago](#). Noteworthy: [\[1\]](#).
- [276e14e6c3](#)
(v6.6-rc1) ▶ *HID: input: stylus of Xp-Pen Artist 24 Pro display tablet changed behavior* by [Jiri Kosina](#), [Unknown](#), and [Unknown](#)
Earliest & latest [activity](#): [5 days ago](#) & [62 hours ago](#).
- [c7d80059b086](#)
(v6.6-rc1) ▶ *sysfs: cannot create duplicate filename .../system76_acpi::kbd_backlight/color* by [Johannes Penßel](#) and [Johannes Penßel](#)
Earliest & latest [activity](#): [12 days ago](#) & [51 hours ago](#).
- [024128477809](#)
(v6.6-rc1) ▶ *quota: boot on Intel Merrifield after merge commit 1500e7e0726e* by [Andy Shevchenko](#)
Earliest & latest [activity](#): [20 days ago](#) & [14 days ago](#). Noteworthy: [\[patch\]](#).

Linux kernel regression status

[\[next\]](#) [\[mainline\]](#) [\[stable/longterm\]](#) • [\[new\]](#) • [\[all\]](#) • [\[resolved\]](#) [\[inconclusive\]](#)

current cycle (v6.6.. aka v6.6-post), culprit identified

• [5cfd69775eb5](#)

▼ **mainline build failure due to 5cfd69775eb5 ("bcache: Array bounds fixes")** by [Sudip Mukherjee \(Codethink\)](#)

Earliest & latest [activity](#): [6 days ago](#) & [17 hours ago](#). Noteworthy: [\[fix incoming\]](#).

Fix incoming: [6dfa10ab22a6 \("bcache: Fix build errors with gcc 10"\)](#)

17 hours ago

Latest five known activities:

- [6dfa10ab22a6, the fix specified through '#regzbot fix:' earlier landed in next](#)
17 hours ago, by Kent Overstreet
- [0591f9e25f0b, the fix specified through '#regzbot fix:' earlier landed in next](#)
4 days ago, by Kent Overstreet
- [ad77f25f730e, the fix specified through '#regzbot fix:' earlier landed in next](#)
5 days ago, by Kent Overstreet
- [Re: mainline build failure due to 5cfd69775eb5 \("bcache: Array bounds fixes"\)](#)
5 days ago, by Linux regression tracking (Thorsten Leemhuis)
- [Re: mainline build failure due to 5cfd69775eb5 \("bcache: Array bounds fixes"\)](#)
5 days ago, by Sudip Mukherjee

Regzbot command history:

- [note: 'fix' commit '6dfa10ab22a6' now in 'next'](#)
17 hours ago, by Kent Overstreet
- [note: 'fix' commit '0591f9e25f0b' now in 'next'](#)
4 days ago, by Kent Overstreet
- [note: 'fix' commit 'ad77f25f730e' now in 'next'](#)
5 days ago, by Kent Overstreet
- [fix: bcache: Fix build errors with gcc 10](#)
5 days ago, by Linux regression tracking (Thorsten Leemhuis)
- [fix: bcache: Fix build errors with gcc 10](#)
5 days ago, by Linux regression tracking (Thorsten Leemhuis)
- [introduced: 5cfd69775eb5460ef78bb5034a37eb0dc52ab65d](#)
6 days ago, by Sudip Mukherjee (Codethink)

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From: "Regzbot (on behalf of Thorsten Leemhuis)" <regressions@leemhuis.info>
To: LKML <linux-kernel@vger.kernel.org>,
 Linus Torvalds <torvalds@linux-foundation.org>,
 Linux regressions mailing list <regressions@lists.linux.dev>
Subject: [Linux regressions report for mainline \[2023-10-29\]](#)
Date: Sun, 29 Oct 2023 13:52:35 +0000 [\[thread overview\]](#)
Message-ID: <169858752781.1095326.10615907253726224231@leemhuis.info> ([raw](#))

Hi Linus. Just three 6.6 regression remain on my list after a few I tracked were resolved last week. One of the remaining ones is new: module loading trouble on some laptops. Not nice, but likely nothing many users will encounter. The quota compilation oddity problem from Andy is also still around (unless it was fixed without me noticing); and a memleak, too. See below for details.

FWIW, there was some news wrt to the two 6.5 regressions I mentioned in last weeks report[1]:

* There was another report about a blank screen during boot on a Lenovo

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From: [Linus Torvalds](#) <torvalds@linux-foundation.org>

To: "Regzbot (on behalf of Thorsten Leemhuis)"

<regressions@leemhuis.info>, Huacai Chen <chenhuacai@kernel.org>,

Javier Martinez Canillas <javierm@redhat.com>

Cc: LKML <linux-kernel@vger.kernel.org>,

Linux regressions mailing list <regressions@lists.linux.dev>

Subject: [Re: Linux regressions report for mainline \[2023-10-29\]](#)

Date: Sun, 29 Oct 2023 07:19:03 -1000 [\[thread overview\]](#)

Message-ID: <CAHk--wgEHNfHpcvnp2X6-fjBngrhPYO=oHAR905Q_qk-njV31A@mail.gmail.com> ([raw](#))

In-Reply-To: <[169858752781.1095326.10615907253726224231@leemhuis.info](#)>

On Sun, 29 Oct 2023 at 03:52, Regzbot (on behalf of Thorsten Leemhuis)

<regressions@leemhuis.info> wrote:

>

>

One of the remaining ones is new:

> module loading trouble on some laptops. Not nice, but likely nothing

> many users will encounter. The quota compilation oddity problem from

> Andy is also still around (unless it was fixed without me noticing); and

> a memleak, too.

Developer can interact with regzbot

via regzbot commands in a reply to the
report, for example when a Link:/Closes: tag
was forgotten

Developer can interact with
regzbot

but do not have to or
care about regzbot at all

They don't have to care about my
regression tracking work either...

...unless of course it looks like a
regression is not handled
appropriately

in the ideal case adding the report
to the tracking is thus the only
extra-work required

Regzbot itself is pretty basic and
sometimes a bit rough,
but does what it's designed for

Important features on the road map (priority):

- support for issues submitted to github and gitlab projects (WIP)
 - separate actionable vs non-actionable reports in the UI (actionable: a sane report with a bisection result)
 - make it more obvious in the UI when a fix is out for review
 - make it dead simple to add regressions to the tracking where a mail contains both report and a fix
-

Important features on the road map (later):

- various UI fine tuning (command line interface, website)
 - mark some regressions as "priority"
 - tagging to identify subsystems or sources of reports (like CIs)
 - subsystem specific webpages & reports
 - export data better to make it more useful for subsystem and stable maintainers
-

Ideas for more features:

- check pull requests to Linus and yell if they are known to cause regressions?

That's the state of things right
now!

...which brings us to...

What do you want
regzbot or me to do?

some people want to add
regressions to regzbot
that CI systems found

I see that it would be useful and definitely
want that to happen in the long term

I see that it would be useful and definitely
want that to happen in the long term

At the same time I need to be able
to stay on top of tracked regressions

this hence definitely needs separation
between actionable vs non-actionable
reports

this hence definitely needs separation
between actionable vs non-actionable
reports

and maybe some CI reports should only
become "actionable" after some human
performed a sanity check

Other open issues

-
- Integration of regression status in CI systems:
 - Modelling of regression life cycle
 - Close the loop between regression detection and developers:
 - CI systems provide data to users (unidirectional)
 - Status changes generated by users could be communicated back to CI systems
-

-
-
- Regzbot provides these features
 - Integrating them into the source CI data can lead to more useful and up-to-date reports
-
-