

Red Hat

QECamp 2023

Triaging kernel issues

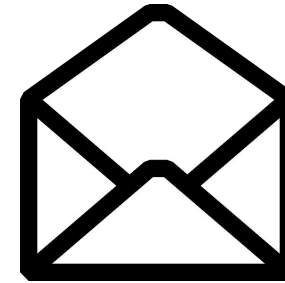
Israel Santana, Jeff Bastian, Fendy Tjahjadi
2023-10-19

What are we testing?

- Kernel compiled, we don't use the source code to test it.

Current workflow

How are we testing?






Beaker View

RS:12152212						<input type="button" value="Clone"/> <input type="button" value="Priority"/>	
<input type="checkbox"/>	R:14369562	coretempmodule x86_64	RHEL-9.3.0-20230804.9 BaseOS x86_64	intel-wil...	100%		
RS:12152213						<input type="button" value="Clone"/> <input type="button" value="Priority"/>	
<input type="checkbox"/>	R:14369563	cpumemsofthotplug x86_64	RHEL-9.3.0-20230804.9 BaseOS x86_64	intel-...	100%		
RS:12152214						<input type="button" value="Clone"/> <input type="button" value="Priority"/>	
<input type="checkbox"/>	R:14369564	firmware aarch64	RHEL-9.3.0-20230804.9 BaseOS aarch64	hpe-apollo-cn...	100%		
<input type="checkbox"/>	R:14369565	firmware aarch64 guest	Role: GUESTS RHEL-9.3.0-20230804.9 BaseOS a...		100%		
RS:12152215						<input type="button" value="Clone"/> <input type="button" value="Priority"/>	
<input type="checkbox"/>	R:14369566	firmware bios x86_64	RHEL-9.3.0-20230804.9 BaseOS x86_64	intel-wildca...	100%		
<input type="checkbox"/>	R:14369567	firmware bios guest x86_64	Role: GUESTS RHEL-9.3.0-20230804.9 Base...		100%		
RS:12152216						<input type="button" value="Clone"/> <input type="button" value="Priority"/>	
<input type="checkbox"/>	R:14369568	firmware uefi x86_64	RHEL-9.3.0-20230804.9 BaseOS x86_64	intel-wildca...	100%		
<input type="checkbox"/>	R:14369569	firmware uefi guest x86_64	Role: GUESTS RHEL-9.3.0-20230804.9 Base...		100%		






Beaker View

Installation Tasks **Reservation**

Fail with 5 out of 5 tasks finished. 100% 

▶ T:164188648	+00:10:21	/distribution/check-install	1.0-2	taskout.log + 1 	Pass
▼ T:164188649	+00:10:27	/CoreOS/irqbalance/basic	1.1-28	taskout.log + 2 	Fail

Results Settings

TR:767464346	+00:10:30	Setup		resultoutputfile.log + 1 	Pass
TR:767464347	+00:10:30	banirq-test		resultoutputfile.log + 1 	Pass
TR:767464398	+00:12:06	Signal-handling-test		resultoutputfile.log + 1 	Pass
TR:767464413	+00:12:21	basic-daemon-tests		resultoutputfile.log + 1 	3 Fail
TR:767464415	+00:12:27	oneshot-mode-test		resultoutputfile.log avc.log 	1 Fail

Reviewing log files

```
[11004.903871] Running test [R:14764108 T:12 - Storage - swraid scsi_raid - Kernel: 5.14.0-375.el9.x86_64+debug]
[11018.522562] loop0: detected capacity change from 0 to 4096000
[11042.039689] loop1: detected capacity change from 0 to 4096000
[11065.761488] loop2: detected capacity change from 0 to 4096000
[11089.627700] loop3: detected capacity change from 0 to 4096000
[-- MARK -- Mon Oct 9 23:10:00 2023]
[11106.256145]
[11106.256151] =====
[11106.256153] WARNING: suspicious RCU usage
[11106.256156] 5.14.0-375.el9.x86_64+debug #1 Tainted: G          W OE X ----- ---
[11106.256161]
[11106.256162] drivers/md/md.c:8004 suspicious rcu_dereference_protected() usage!
[11106.256166]
[11106.256166] other info that might help us debug this:
[11106.256166]
[11106.256168]
[11106.256168] rcu_scheduler_active = 2, debug_locks = 1
[11106.256171] no locks held by lvremove/362348.
[11106.256174]
[11106.256174] stack backtrace:
[11106.256177] CPU: 24 PID: 362348 Comm: lvremove Kdump: loaded Tainted: G          W OE X ----- --- 5.14.0-375.el9.x86_64+debug #1
[11106.256182] Hardware name: Dell Inc. PowerEdge R7425/02MJ3T, BIOS 1.20.0 05/03/2023
[11106.256186] Call Trace:
```

Reviewing log files via bkr CLI

```
$ bkr job-logs R:14764108 | grep taskout.log  
https://beaker.engineering.redhat.com/recipes/14764108/tasks/167288656/logs/taskout.log
```

```
$ wget https://beaker.engineering.redhat.com/recipes/14764108/tasks/167288656/logs/taskout.log
```

```
...
```

```
$ grep -A5 WARNING taskout.log
```

```
### NOTHING ###
```

```
$ bkr job-logs R:14764108 | grep console.log  
https://beaker.engineering.redhat.com/recipes/14764108/logs/console.log
```

```
$ wget https://beaker.engineering.redhat.com/recipes/14764108/logs/console.log
```

```
...
```

```
$ grep -A5 WARNING console.log
```

```
...
```

```
[11106.256153] WARNING: suspicious RCU usage  
[11106.256156] 5.14.0-375.el9.x86_64+debug #1 Tainted: G          W OE X  -----  ---  
[11106.256161] -----  
[11106.256162] drivers/md/md.c:8004 suspicious rcu_dereference_protected() usage!
```

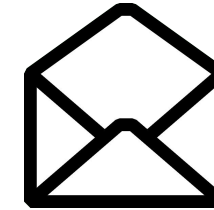
Is this a new issue ?
Is it a regression ?

Alternative workflow

How can we test it?



DW



CKI pipelines

Mail Reporter (Only with CKI pipeline)

Hi, we tested your kernel and here are the results:

Overall result: FAILED

Merge: OK

Compile: OK

Test: FAILED

Kernel information:

Commit message: Linux 5.10.197-rt96

You can find all the details about the test run at

<https://datawarehouse.cki-project.org/kcidb/checkouts/108144>

One or more kernel tests failed:

! Regression(s) detected:

x86_64 - Storage - blktests - nvme-tcp

Issue: Storage blktests - nvme-tcp: lr : check_flush_dependency+0x138/0x140

<https://gitlab.com/redhat/centos-stream/tests/kernel/kernel-tests/-/issues/1183>

Logs: <https://datawarehouse.cki-project.org/kcidb/tests/9824358>

Note: Any of these might not be a regression and/or we might have mistakenly thought this issue to be fixed.

If it is not a regression, please ask the test maintainer to reopen the issue and untag the regression from this execution.

Mail Reporter (Only with CKI pipeline)

Unrecognized or new issues:

x86_64 - Networking cki netfilter test

Logs: <https://datawarehouse.cki-project.org/kcidb/tests/9824375>

Non-passing subtests:

- ✘ FAIL iptables-Basic-TARGETS
- ✘ FAIL iptables-Plain-NAT-test
- ✘ FAIL ip6tables-Basic-TARGETS
- ✘ FAIL ip6tables-Plain-NAT-test
- ✘ FAIL nftables-ip-family-ipv4-basic-action-test-input-output-path
- ✘ FAIL nftables-ip-family-ipv4-basic-action-test-forward-path
- ✘ FAIL nftables-inet-family-ipv4-basic-action-test-input-output-path
- ✘ FAIL nftables-inet-family-ipv4-basic-action-test-forward-path
- ✘ FAIL nftables-ip6-family-ipv6-basic-action-test-input-output-path
- ✘ FAIL nftables-ip6-family-ipv6-basic-action-test-forward-path
- ✘ FAIL nftables-inet-family-ipv6-basic-action-test-input-output-path
- ✘ FAIL nftables-inet-family-ipv6-basic-action-test-forward-path

x86_64 (debug) - Boot test

Logs: <https://datawarehouse.cki-project.org/kcidb/tests/9824422>

Non-passing subtests:

- ✘ FAIL distribution/kpkginstall/journalctl-check

x86_64 (debug) - Networking cki netfilter test

Logs: <https://datawarehouse.cki-project.org/kcidb/tests/9824429>

Non-passing subtests:

- ✘ FAIL iptables-Basic-TARGETS
- ✘ FAIL iptables-Plain-NAT-test
- ✘ FAIL ip6tables-Basic-TARGETS
- ✘ FAIL ip6tables-Plain-NAT-test
- ✘ FAIL nftables-ip-family-ipv4-basic-action-test-input-output-path
- ✘ FAIL nftables-ip-family-ipv4-basic-action-test-forward-path
- ✘ FAIL nftables-inet-family-ipv4-basic-action-test-input-output-path
- ✘ FAIL nftables-inet-family-ipv4-basic-action-test-forward-path
- ✘ FAIL nftables-ip6-family-ipv6-basic-action-test-input-output-path
- ✘ FAIL nftables-ip6-family-ipv6-basic-action-test-forward-path
- ✘ FAIL nftables-inet-family-ipv6-basic-action-test-input-output-path
- ✘ FAIL nftables-inet-family-ipv6-basic-action-test-forward-path

x86_64 (debug) - Reboot test

Logs: <https://datawarehouse.cki-project.org/kcidb/tests/9824438>

Non-passing subtests:

- ✘ FAIL misc/reboot-test/journalctl-check

Mail Reporter (Only with CKI pipeline)

We also see the following known issues which are not related to your changes:

Issue: selinux-policy: serge-testsuite: inet_socket/test FAIL L412 - random timeout

URL: <https://gitlab.com/redhat/centos-stream/tests/kernel/kernel-tests/-/issues/756>

Affected tests:

x86_64 - selinux-policy: serge-testsuite

Issue: xfstests: generic/354 file exists

URL: <https://gitlab.com/redhat/centos-stream/tests/kernel/kernel-tests/-/issues/1654>

Affected tests:

x86_64 - xfstests - nfsv4.2

x86_64 - xfstests - cifsv3.11

Issue: avc: denied { name_bind } for pid=897864 comm="rpcbind" src=63924 scontext=system_u:system_r:rpcbind_t:s

URL: https://bugzilla.redhat.com/show_bug.cgi?id=1758147

Affected tests:

x86_64 - xfstests - nfsv4.2

Issue: kselftests upstream - net: FAIL: Ping received ICMP Packet too big

URL: <https://git.kernel.org/netdev/net-next/c/c4cf2bc0d2c9>

Affected tests:

x86_64 (debug) - kselftests upstream - net

Issue: kselftest build - bpf: progs/test_bpf_nf.c:160:42: error: use of undeclared identifier 'NF_NAT_MANIP_SRC'

URL: <https://gitlab.com/redhat/centos-stream/tests/kernel/kernel-tests/-/issues/1418>

Affected tests:

x86_64 (debug) - kselftests upstream - bpf

x86_64 (debug) - kselftests upstream - bpf_test_progs

Datawarehouse (checkout view)

CHECKOUT STATUS **Valid** ✓

BUILD STATUS **Passed** ✓

TEST STATUS **Failed** 457 ✓ 4 ✗ 1 🔥 55 —

Checkout ID: redhat:brew-56071412 [Gitlab Pipeline](#) [executor](#)

Tree: kernel-rhel9 Repository: @
Commit Hash: Commit Name:
NVR: 5.14.0-375.el9 Start Time: Oct. 9, 2023, 11:09 p.m.

UNTRIAGED ISSUES

🔥 redhat:brew-56071412-x86_64-kernel-rt_upt_46 kernel-rt: stalled

🔥 KNOWN ISSUE | 1 TEST AFFECTED
> **Kernel Bug** [perf - internal-testsuite: probe-libc-s-inet-pton-backtrace-it-with-ping FAIL](#)

🔥 KNOWN ISSUE | 1 TEST AFFECTED
> **Kernel Bug** [\[rhel9\] md/raid: suspicious RCU usage backtrace on swraid scsi_raid storage test](#)

🔥 KNOWN ISSUE | 1 TEST AFFECTED
> **Unstable Test** [ioctl_loop01 tst_test.c:1614: TBROK: Test killed! \(timeout?\)](#)

Datawarehouse (test view)

✕

TEST STATUS
FAIL

Test ID: redhat:brew-56071412-x86_64-kernel-debug_upt_11 [Gitlab Job](#) [Beaker Recipe](#)

Description: [Storage - swraid scsi_raid](#)
Fetch URL: https://gitlab.com/redhat/centos-stream/tests/kernel/kernel-tests/-/archive/main/kernel-tests-main.zip#storage/swraid/scsi_raid
Maintainers: [Changhui Zhong](#)
🕒 **Start Time:** Oct. 10, 2023, 3:08 a.m.
⌚ **Duration:** 00:02:15
🌐 **Environment:** dell-per7425-08.dell2.lab.eng.bos.redhat.com

🚩 **KNOWN ISSUE | 1 TEST AFFECTED**

> Kernel Bug [\[rhel9\] md/raid: suspicious RCU usage backtrace on swraid scsi_raid storage test](#)

Test Results

▼	✕ 🚩	redhat:brew-56071412-x86_64-kernel-debug_upt_11.1696896499	Test
		dmesg.log	https://s3.upshift.redhat.com/DH-PROD-CKI/datawarehouse/1031109848/5255939479/redhat%3Abrew-56071412/build_x86_64_redhat%3Abrew-56071412-x86_64-l
		avc.log	https://s3.upshift.redhat.com/DH-PROD-CKI/datawarehouse/1031109848/5255939479/redhat%3Abrew-56071412/build_x86_64_redhat%3Abrew-56071412-x86_64-l
		resultoutputfile.log	https://s3.upshift.redhat.com/DH-PROD-CKI/datawarehouse/1031109848/5255939479/redhat%3Abrew-56071412/build_x86_64_redhat%3Abrew-56071412-x86_64-l

Datawarehouse (issue)

Kernel Bug [rhel9] md/raid: suspicious RCU usage backtrace on swraid scsi_raid storage test
Created by:

Kind: Kernel bug

Ticket URL: <https://issues.redhat.com/browse/RHEL-12435>

Resolved: No

Policy: public (read: None, write: policy_public_write)

Regexes

Text	File Name	Test Name	Subtest Name	Architecture	Package Name	Tree Name	KPET Tree Name
drivers\md\md\.c:\d+ suspicious rcu_derefer dmesg\..log		Storage - swraid sc Test				(rhe19 c9s)	

Affected hosts >

Affected tests >

Affected Checkouts

<input type="checkbox"/> ID	Tree	Branch	Version	Start Time
<input type="checkbox"/> redhat:1041502914	kernel-rt-c9s	main	5.14.0-377.3183_1041502850	Oct. 18, 2023, 5:43 p.m.
<input type="checkbox"/> redhat:1041448083	kernel-rt-c9s	main	5.14.0-377.2843_1041447862	Oct. 18, 2023, 4:44 p.m.
<input type="checkbox"/> redhat:brew-56274990	kernel-rhel9		5.14.0-377.el9	Oct. 17, 2023, 11:31 p.m.

Datawarehouse (regex closer view)

- Kind: Kernel bug
- Resolved: No
- Ticket URL: <https://issues.redhat.com/browse/RHEL-12435>
- Regexes:
 - Text: `drivers\md\md\.c:\d+ suspicious rcu_dereference...`
 - File Name: `dmesg\log`
 - Test Name: `Storage - swraid scsi_raid`
 - Subest Name: `Test`
 - Tree Name: `(rhel9|c9s)`

Regex 101

REGULAR EXPRESSION 1 match (68 steps, 0.0ms)

```
/ drivers\\md\\md\\.c:\\d+ suspicious rcu_dereference_protected\\(\\) usage! / gm
```

TEST STRING

```
[11106.256151] =====  
[11106.256153] WARNING: suspicious RCU usage  
[11106.256156] 5.14.0-375.el9.x86_64+debug #1 Tainted: G.....W..OE..X.....  
[11106.256161] -----  
[11106.256162] drivers/md/md.c:8004 suspicious rcu_dereference_protected() usage!  
[11106.256166] ..  
[11106.256166] other info that might help us debug this: ..  
[11106.256166] ..  
[11106.256168] ..  
[11106.256168] rcu_scheduler_active==2, debug_locks==1  
[11106.256171] no locks held by lvremove/362348.  
[11106.256174] ..  
[11106.256174] stack backtrace:
```

Datawarehouse (tests view)

Tests

Status Architecture Issues tagged Host Filter Storage - swraid scsi_raid Tree Filter Kernel Version Filter Sort by Start Time

ID	Name	Tree	Kernel Version	Architecture	Start Time	Duration	Environment
✓ redhat:brew-56137595-x86_64-kernel_upt_15	Storage - swraid scsi_raid	kernel-rhel9	5.14.0-376.el9	x86_64	Oct. 12, 2023, 10:44 a.m.	00:01:37	lenovo-sr530-01.khw2.lab.eng.bos.redhat.com
✓ redhat:brew-56137595-s390x-kernel_upt_9	Storage - swraid scsi_raid	kernel-rhel9	5.14.0-376.el9	s390x	Oct. 12, 2023, 9:45 a.m.	00:01:01	ibm-z-528.lab.eng.rdu2.redhat.com
🔄 redhat:brew-56137595-x86_64-kernel-rt_upt_11	Storage - swraid scsi_raid	kernel-rhel9	5.14.0-376.el9	x86_64		-	
🔄 redhat:brew-56137595-aarch64-kernel-64k_upt_12	Storage - swraid scsi_raid	kernel-rhel9	5.14.0-376.el9	aarch64		-	
✓ redhat:brew-56137595-aarch64-kernel_upt_12	Storage - swraid scsi_raid	kernel-rhel9	5.14.0-376.el9	aarch64	Oct. 12, 2023, 10:24 a.m.	00:00:50	ampere-mtjade-altra-02.khw4.lab.eng.bos.redha
🔄 redhat:brew-56137595-x86_64-kernel-debug_upt_11	Storage - swraid scsi_raid	kernel-rhel9	5.14.0-376.el9	x86_64		-	
🟡 redhat:brew-56137595-x86_64-kernel-rt-debug_upt_11	Storage - swraid scsi_raid	kernel-rhel9	5.14.0-376.el9	x86_64		-	lenovo-sr530-01.khw2.lab.eng.bos.redhat.com
✓ redhat:1033885251-s390x-kernel_upt_7	Storage - swraid scsi_raid	mainline.kernel.org-clang	6.6.0-rc5	s390x	Oct. 12, 2023, 12:05 a.m.	00:01:04	ibm-z-532.lab.eng.rdu2.redhat.com
✓ redhat:1033885251-x86_64-kernel_upt_12	Storage - swraid scsi_raid	mainline.kernel.org-clang	6.6.0-rc5	x86_64	Oct. 12, 2023, 8:52 a.m.	00:01:45	hpe-magnycours-01.hpe2.lab.eng.bos.redhat.co
🟡 redhat:1033885251-x86_64-kernel-debug_upt_6	Storage - swraid scsi_raid	mainline.kernel.org-clang	6.6.0-rc5	x86_64		-	hpe-magnycours-01.hpe2.lab.eng.bos.redhat.co

References

- <https://www.jenkins.io>
- <https://beaker-project.org/>
- <https://gitlab.com/>
- <https://datawarehouse.cki-project.org>
- <https://gitlab.com/cki-project/>
- <https://cki-project.org/>
- <https://cki-project.org/docs/test-maintainers/>
- <https://regex101.com/>
- <https://docs.engineering.redhat.com/display/CentralCI/CCIT+ReportPortal>
- [KESS](#)

Thank you



[linkedin.com/company/red-hat](https://www.linkedin.com/company/red-hat)



[youtube.com/user/RedHatVideos](https://www.youtube.com/user/RedHatVideos)



[facebook.com/redhatinc](https://www.facebook.com/redhatinc)



twitter.com/RedHat