

Unifying Test Reporting with KernelCI

Linux Plumbers 2020

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KernelCI Kernel Testing Landscape

- **Individual contributors (developers, maintainers):**
 - Only run tests on their workstations / dev boards
- **Distros, OEMs, SoC/CPU vendors**
 - Only run tests on their own hardware
- **Intel 0-Day (LKP)^[1]**
 - Only runtime tests on Intel x86
- **Syzkaller: fuzzing with system calls^[2]**
 - Does not replace functional testing

^[1] <https://01.org/lkp>

^[2] <https://syzkaller.appspot.com/upstream>



KernelCI Open Testing Philosophy

Automated test systems are stronger together

- **One upstream Linux kernel, one KernelCI**
- **More than open source tools:**
 - **Combined test data**
 - **Shared hardware pools**
 - **Common workflow**

KernelCI Testing systems



...



KernelCI Testing reports

Results from Linaro's test farm.
No regressions on arm64, arm, x86_64, and i386.

Summary

kernel: 5.7.12-rc3
git repo: <https://git.kernel.org/pub/scm/linux/kernel/git/stable/linux-stable-rc.git>
git branch: linux-5.7.12
git commit: 4822ba6f6c9d9b0a3b7f7f1de2a29226
git describe: v5.7.12-327-gd322ba6f6d
Test details: <https://qa-reports.linaro.org/ikfr/linux-stable-rc-5.7-oe/build/v5.7.12-327-gd322ba6f6d>
No regressions (compared to build v5.7.12)
No fixes (compared to build v5.7.12)

Run 34339 total tests in the following environments and test suites.

Environments

- dragonboard-410c
- hi3620-hikay
- i386
- juno-r2
- juno-r2-compat
- juno-r2-kasan
- nxp-ls2088
- qemu_arm
- qemu_arm64
- qemu_i386
- qemu_x86_64
- x15
- x86
- x86-kasan

Test Suites

KMSAN: kernel-usb-ufaleak in hif_usb_send

[\[Date Prev\]](#) [\[Date Next\]](#) [\[Thread Prev\]](#) [\[Thread Next\]](#) [\[Date Index\]](#) [\[Thread Index\]](#)

- To: glider@xxxxxxxxx, gregkh@xxxxxxxxxxxxxxxxxx, Ingrassia@xxxxxxxxxxxxxxxx, linux-kernel@xxxxxxxx
- Subject: KMSAN: kernel-usb-ufaleak in hif_usb_send
- From: syzbot+fb3a1df1ed4f68dbad@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx
- Date: Tue, 11 Aug 2020 10:06:18 -0700

Hello,

syzbot found the following issue on:

HEAD commit: c80856d1 wip: changed copy from user where instrumented
git tree: <https://github.com/google/kmsan.git> master
console output: <https://syzkaller.appspot.com/view.txt?id=246453980000>
kernel config: <https://syzkaller.appspot.com/view.txt?id=246453980000>
dashboard link: <https://syzkaller.appspot.com/view.txt?id=246453980000>
compiler: clang version 10.0.0 (<https://github.com/llvm/llvm-project>) c2443155a0fb245c817f2c1c72b6a39186e81
userspace arch: i386

Unfortunately, I don't have any reproducer for this issue yet.

IMPORTANT: if you fix the issue, please add the following tag to the commit:
Reported-by: syzbot+fb3a1df1ed4f68dbad@xxxxxxxxxxxxxxxxxxxxxxxxxxxxxx

usb 4-1: at90rk_usb: Transferred FW: at90rk_usb/fw: size: 51008

BUG: KMSAN: kernel-usb-ufaleak in kasan_handle_urb->data me/kasan/kasan_hooks.c:267
CPU: 1 PID: 13922 Comm: kworker/1:0 Not tainted 5.8.0-rc5-syzkaller #0
Hardware name: Google Compute Engine/Google Compute Engine, BIOS Google 01/01/2011
Workqueue: events request_firmware_work_func
Call Trace:

stable-rc/linux-4.9.y build: 197 builds: 1 failed, 196 passed, 4 warnings (v4.9.232)

kernel.org hot [hot](#) at [kernel.org](#)

Sat Aug 1 08:24:58 UTC 2020

- Previous message: [\[PATCH stable\] MIPS: Loongson: Introduce and use loongson_llsc_mbf\(\)](#)
- Next message: [stable-rc/linux-4.9.y build: 197 builds: 1 failed, 196 passed, 4 warnings \(v4.9.232\)](#)
- Messages sorted by: [\[date\]](#) [\[thread\]](#) [\[subject\]](#) [\[author\]](#)

stable-rc/linux-4.9.y build: 197 builds: 1 failed, 196 passed, 4 warnings (v4.9.232)

Full Build Summary: <https://kernel.org/build/stable-rc/branch/linux-4.9.y/kernel/v4.9.232/>

Tree: stable-rc
Branch: linux-4.9.y
Git describe: v4.9.232
Git commit: 8686c4120e29293b2ba7b08c1d5801abe183b
Git URL: <https://git.kernel.org/pub/scm/linux/kernel/git/stable/linux-stable-rc.git>
Built: 6 unique architectures

Build Failure Detected:

nips:
3272el defconfig: (gcc-8) FAIL

Warnings Detected:

src:

✓ PASS: Test report for kernel 5.7.12-3ff3d4f.cki (stable-queue)

CKI Project [cki-project](#) at [redhat.com](#)

Tue Aug 4 12:35:15 UTC 2020

- Previous message: [fixing 4.14-stable's broken DM cache writethrough support \[was: Re: \(resend\) PATCH v3: \(linux-4.14.y\) dm cache: submit writethrough writes in parallel to origin and cache\]](#)
- Next message: [stable-rc/linux-4.4.y build: 190 builds: 1 failed, 189 passed, 2 errors, 13 warnings \(v4.4.232-30-g52247eb98ebe\)](#)
- Messages sorted by: [\[date\]](#) [\[thread\]](#) [\[subject\]](#) [\[author\]](#)

Hello,

We ran automated tests on a recent commit from this kernel tree:

Kernel repo: <https://git.kernel.org/pub/scm/linux/kernel/git/stable/linux-stable-rc.git>
Commit: 3ff3d4f43856 - x86/8259: Use printk_deferred() to prevent deadlock

The results of these automated tests are provided below.

Overall result: PASS/ED
Merge: OK
Compile: OK
Tests: OK

All kernel binaries, config files, and logs are available for download here:

<https://cki-artifacts.s3.us-east-2.amazonaws.com/index.html?prefix=datawarehouse/2020/08/03/611391>

Please reply to this email if you have any questions about the tests that we ran or if you have any suggestions on how to make future tests more effective.

(C) (K)
Continuous
Kernel
Integration

Re: [PATCH V4] hwmon: add fan/pwm driver for corsair

[\[Date Prev\]](#) [\[Date Next\]](#) [\[Thread Prev\]](#) [\[Thread Next\]](#) [\[Date Index\]](#) [\[Thread Index\]](#)

- To: Jaap aarts <jaap.aarts1@xxxxxxxxxx>, Jean Delvare <jdelvare@xxxxxxxxxx>, Guenter Roeck <linux@xxxxxxxxxx>, Barnabás Pócs <pobrn@xxxxxxxxxxxxxxxxxx>
- Subject: Re: [PATCH V4] hwmon: add fan/pwm driver for corsair h100i platinum
- From: kernel test robot <clp@xxxxxxxxxx>
- Date: Sun, 16 Aug 2020 17:34:40 +0800
- Cc: kbuild-all@xxxxxxxxxxxxx, jaap aarts <jaap.aarts1@xxxxxxxxxx>
- In-reply-to: <20200815211617.86565-1-jaap.aarts1@gmail.com>
- References: <20200815211617.86565-1-jaap.aarts1@gmail.com>
- User-agent: Mutt/1.10.1 (2018-07-13)

Hi Jaap,

Thank you for the patch! Perhaps something to improve:

[auto build test WARNING on hwmon/hwmon-next]
[also build test WARNING on v5.8 next-20200814]
[If your patch is applied to the wrong git tree, kindly drop us a note.
And when submitting patch, we suggest to use '-base' as documented in
<https://git-scm.com/docs/git-format-patch>]

url: <https://github.com/8day-ci/linux/commit/jaap-aarts/hwmon-add-fan-pwm-driver-for-corsair-h100i-platinum/20200816-86529>
base: <https://git.kernel.org/pub/scm/linux/kernel/git/groebk/linux-staging.git> hwmon-next
config: nios2-defconfig-0803-20200816 (attached as .config)
compiler: nios2-linux-gcc (GCC) 9.3.0







Red Hat

SONY



KernelCI Standardizing reporting

HOW STANDARDS PROLIFERATE:
(SEE: A/C CHARGERS, CHARACTER ENCODINGS, INSTANT MESSAGING, ETC.)

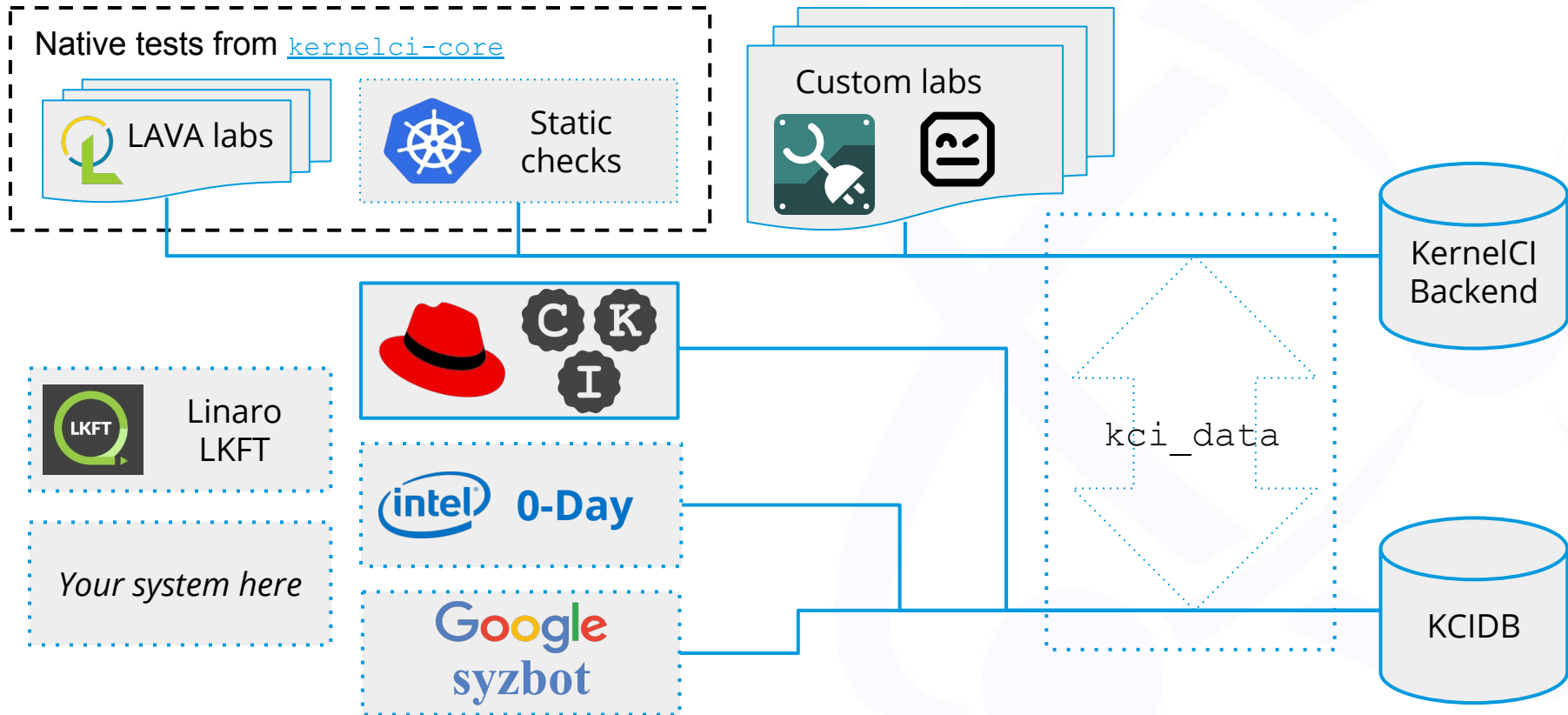




KCIDB

KernelCI The Bigger Picture

work in progress





1. LAVA lab

Callbacks sent automatically to KernelCI backend API

Native support in KernelCI

Automated bisection

2. Generic KernelCI API

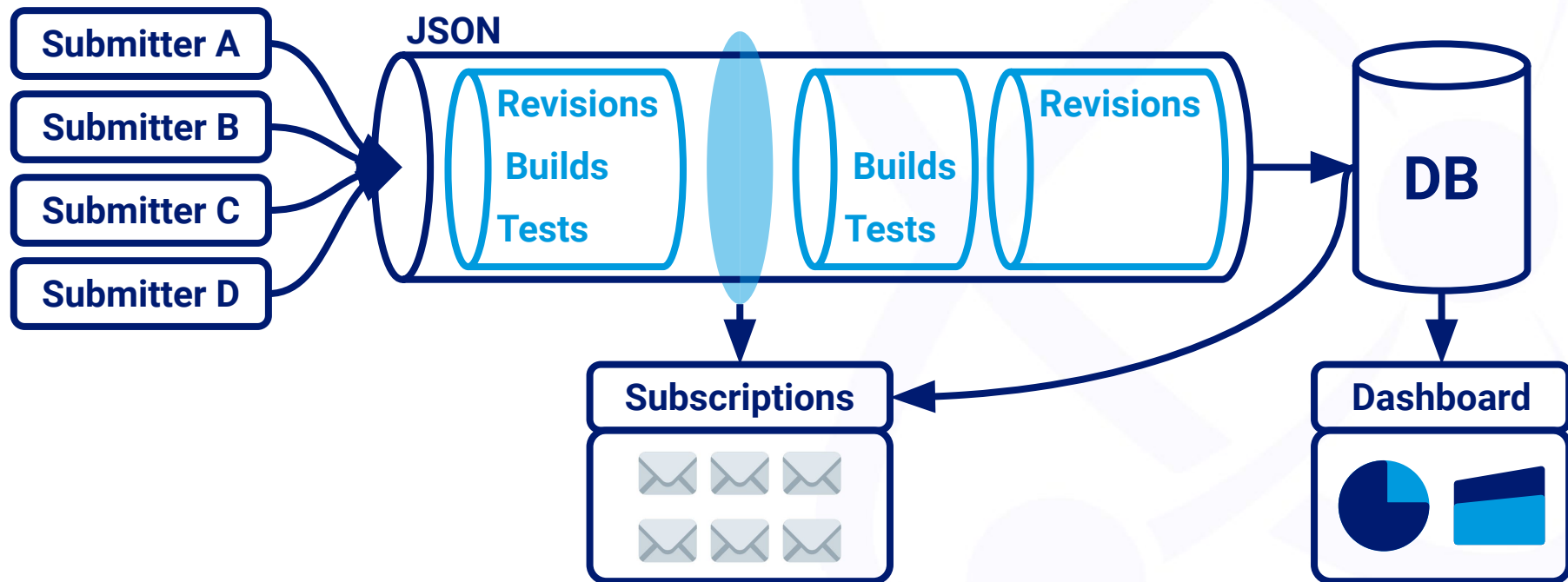
```
kci_data submit --data-file=results.json
```

<https://gist.github.com/gctucker/79821ceb98313c6d832a8fed5522fbda>

3. KCIDB

What this talk is about :)

KernelCI The Smaller Bigger Picture





```
nkondras@bard:~$ kcidb-  
kcidb-count  
kcidb-db-cleanup  
kcidb-db-complement  
kcidb-db-dump  
kcidb-db-init  
kcidb-db-load  
kcidb-db-query  
kcidb-describe  
kcidb-merge  
kcidb-mq-publisher-cleanup  
kcidb-mq-publisher-init  
kcidb-mq-publisher-publish  
kcidb-mq-subscriber-cleanup  
kcidb-mq-subscriber-init  
kcidb-mq-subscriber-pull  
kcidb-notify  
kcidb-query  
kcidb-schema  
kcidb-spool-wipe  
kcidb-submit  
kcidb-summarize  
kcidb-tests-validate  
kcidb-upgrade  
kcidb-validate  
nkondras@bard:~$ kcidb-
```

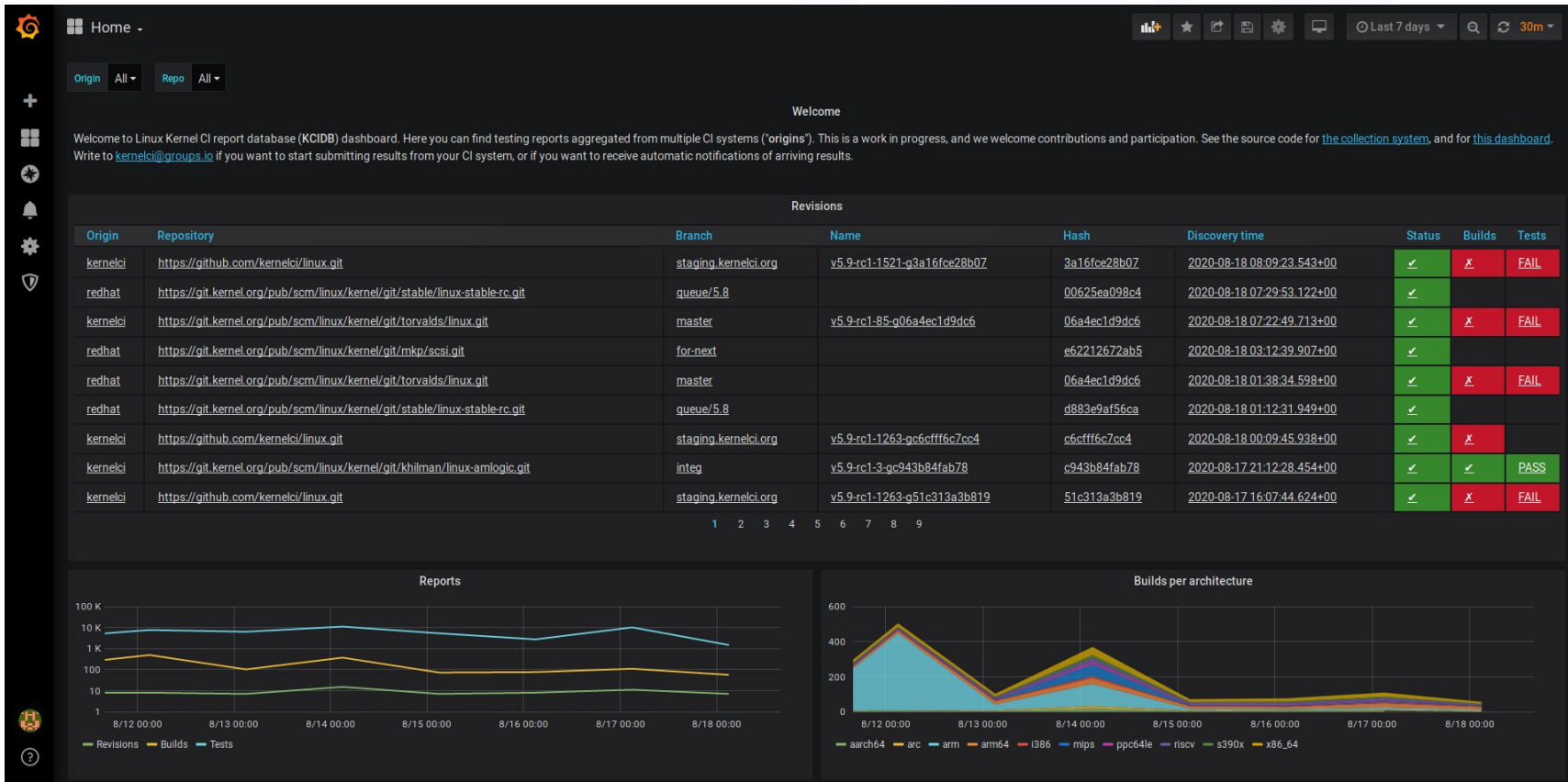


KernelCI Python 3 Library

```
class Client:
    """Kernel CI reporting client"""

    def __init__(self, project_id=None, dataset_name=None, topic_name=None):
        """
        Initialize a reporting client

        Args:
            project_id: ID of the Google Cloud project hosting the report
                        database infrastructure. Can be None to have
                        submitting disabled.
            dataset_name: The name of the Kernel CI dataset to query reports
                        from. The dataset should be located within the
                        specified Google Cloud project. Can be None,
                        to have querying disabled.
            topic_name: Name of the message queue topic to publish
                        submissions to. The message queue should be
                        located within the specified Google Cloud project.
                        Can be None, to have submitting disabled.
        """
```





CKI

Dashboard

Metrics

Revisions

PIPELINES

Running

Submitter

Summary

Failures

PATCHES

Summary

Submitter

CONFIDENCE

Tests

Hosts

>

Go to pipeline # ..

Q

Anonymous

Revision

Actions ▾

All / Revision

REVISION STATUS

Valid

✓

BUILD STATUS

Passed

✓

TEST STATUS

Passed

✓

Revision ID: d883e9af56ca3bcce06c8b06bd67965ad7b10f85

Origin: redhat

Repository URL: <https://git.kernel.org/pub/scm/linux/kernel/git/stable/linux-stable-rc.git>

Commit Hash: d883e9af56ca3bcce06c8b06bd67965ad7b10f85

Message ID:

Publishing Time: Aug. 18, 2020, 1:12 a.m.

Log URL:

Tree: stable-queue

Repository Branch: queue/5.8

Commit Name:

Description:

Discovery Time: Aug. 18, 2020, 1:12 a.m.

List of Builds

redhat:957781	s390x	Build: ✓	Tests: ✓
redhat:957780	ppc64le	Build: ✓	Tests: ✓
redhat:957779	aarch64	Build: ✓	Tests: ✓
redhat:957778	x86_64	Build: ✓	Tests: ✓

KernelCI PoC Reports

Home

Messages

Hashtags

kernelci-results-staging@groups.io Search

* failed for *



Tools

Relevance Date 1 - 20 of 345

Tests failed for linux.git:master

Ahhh, I forgot to update the templates to v3 schema. Fix coming in a few minutes. Nick
By Nikolai Kondrashov · #1537 · Aug 5

Tests failed for linux.git:master

Below is the summary of testing results Kernel CI database has recorded for this revision so far. See complete and up-to-date report at: <https://staging.kernelci.org:3000/d/revision/revision?orgId=1&v>
By staging.kernelci.org bot · #1536 · Aug 5

LTP failed for linux.git:master@fecca6899783

Below is the summary of testing results Kernel CI database has recorded for this revision so far. See complete and up-to-date report at: <https://staging.kernelci.org:3000/d/revision/revision?orgId=1&v>
By staging.kernelci.org bot · #90 · Apr 18

Tests failed for linux.git:master@75613939084f

Below is the summary of testing results Kernel CI database has recorded for this revision so far. See complete and up-to-date report at: <https://staging.kernelci.org:3000/d/revision/revision?orgId=1&v>
By staging.kernelci.org bot · #933 · Jun 22

Tests failed for linux.git:master@585524081ecd

Below is the summary of testing results Kernel CI database has recorded for this revision so far. See complete and up-to-date report at: <https://staging.kernelci.org:3000/d/revision/revision?orgId=1&v>
By staging.kernelci.org bot · #1551 · Aug 5

Tests failed for linux.git:master@8186749621ed

Below is the summary of testing results Kernel CI database has recorded for this revision so far. See complete and up-to-date report at: <https://staging.kernelci.org:3000/d/revision/revision?orgId=1&v>
By staging.kernelci.org bot · #1559 · Aug 6

LTP failed for linux.git:master@9786cab67457

Below is the summary of testing results Kernel CI database has recorded for this revision so far. See complete and up-to-date report at: <https://staging.kernelci.org:3000/d/revision/revision?orgId=1&v>
By staging.kernelci.org bot · #67 · Apr 17

Builds failed for linux.git:master@42612e776331

Below is the summary of testing results Kernel CI database has recorded for this revision so far. See complete and up-to-date report at: <https://staging.kernelci.org:3000/d/revision/revision?orgId=1&v>
By staging.kernelci.org bot · #745 · Jun 9

Tests failed for linux.git:master@242b23319809

Below is the summary of testing results Kernel CI database has recorded for this revision so far. See complete and up-to-date report at: <https://staging.kernelci.org:3000/d/revision/revision?orgId=1&v>
By staging.kernelci.org bot · #732 · Jun 5

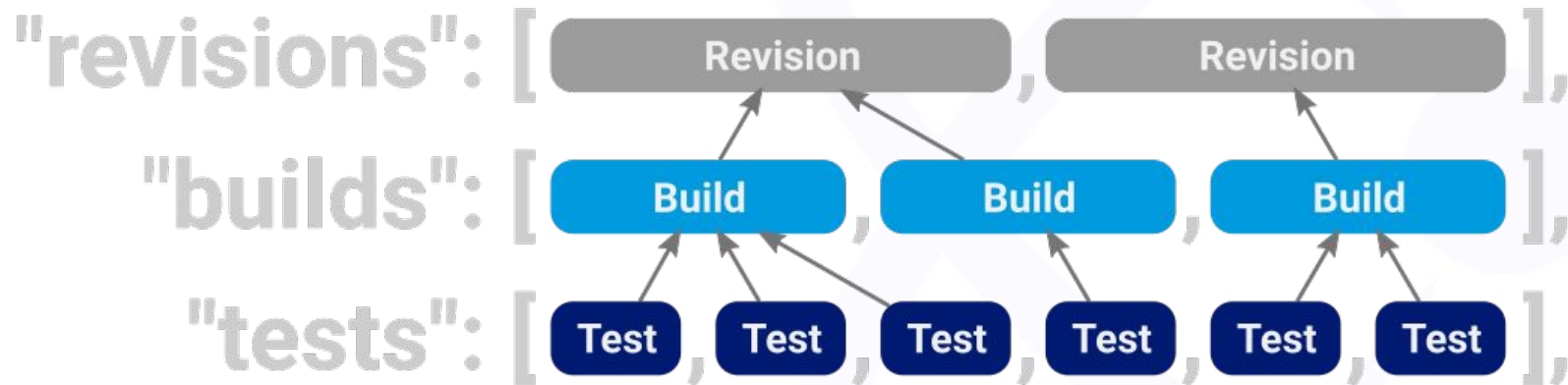
Tests failed for linux.git:master@64677779e896

Below is the summary of testing results Kernel CI database has recorded for this revision so far. See complete and up-to-date report at: <https://staging.kernelci.org:3000/d/revision/revision?orgId=1&v>
By staging.kernelci.org bot · #936 · Jun 22

Tests failed for linux.git:master@69119673bd50

Below is the summary of testing results Kernel CI database has recorded for this revision so far. See complete and up-to-date report at: <https://staging.kernelci.org:3000/d/revision/revision?orgId=1&v>

Schema

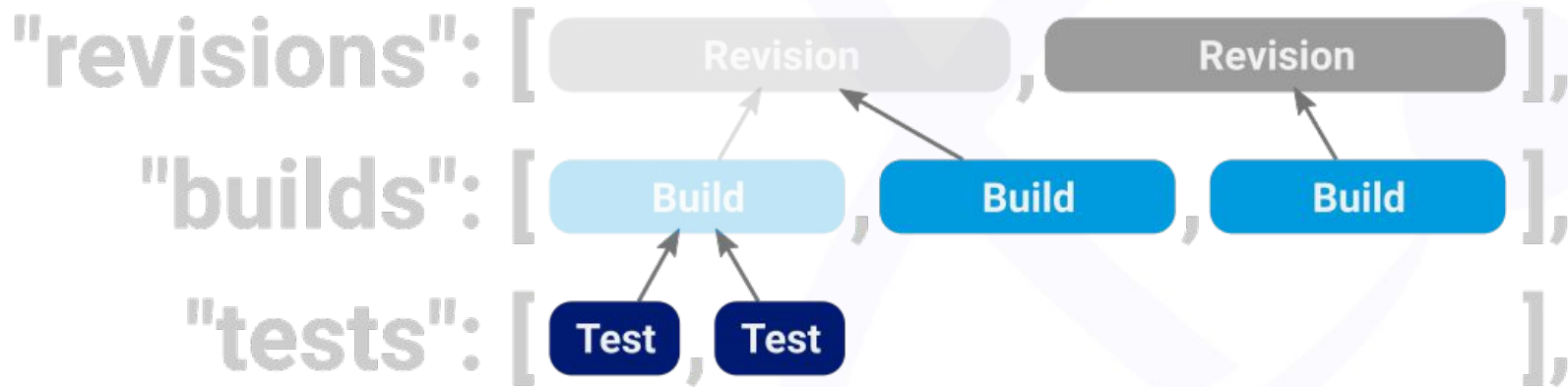


Report #1

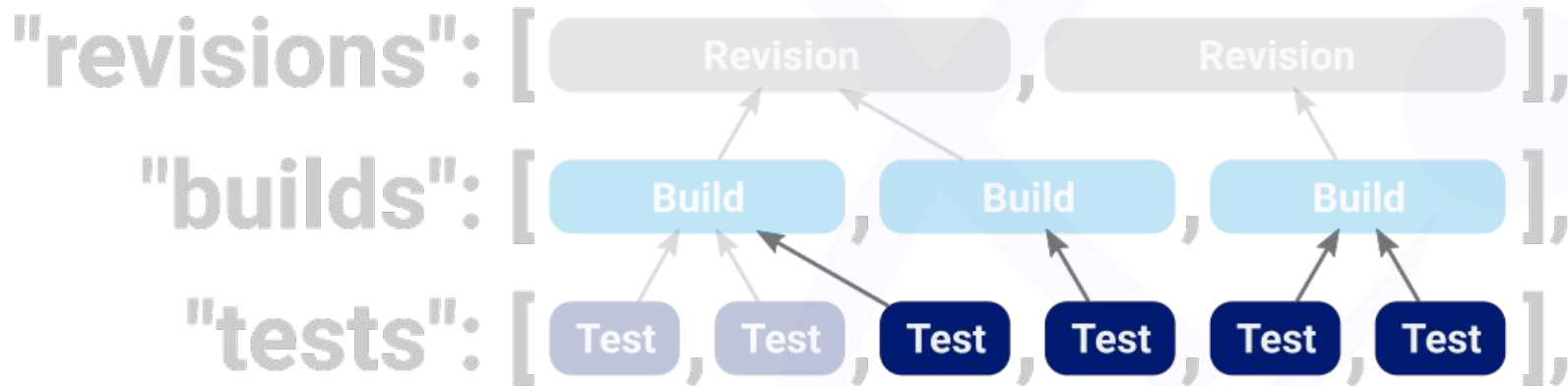
"revisions": [],
"builds": [],
"tests": []



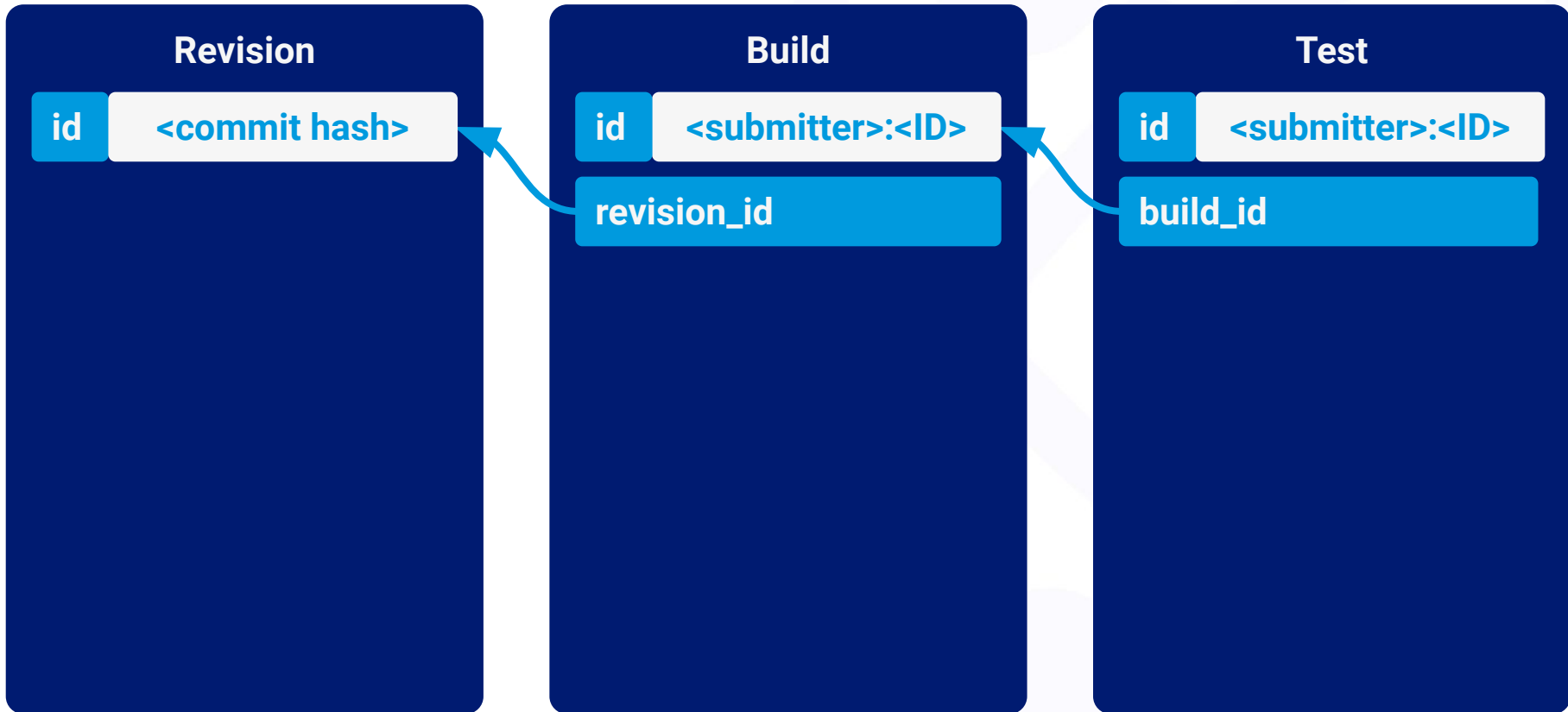
Report #2



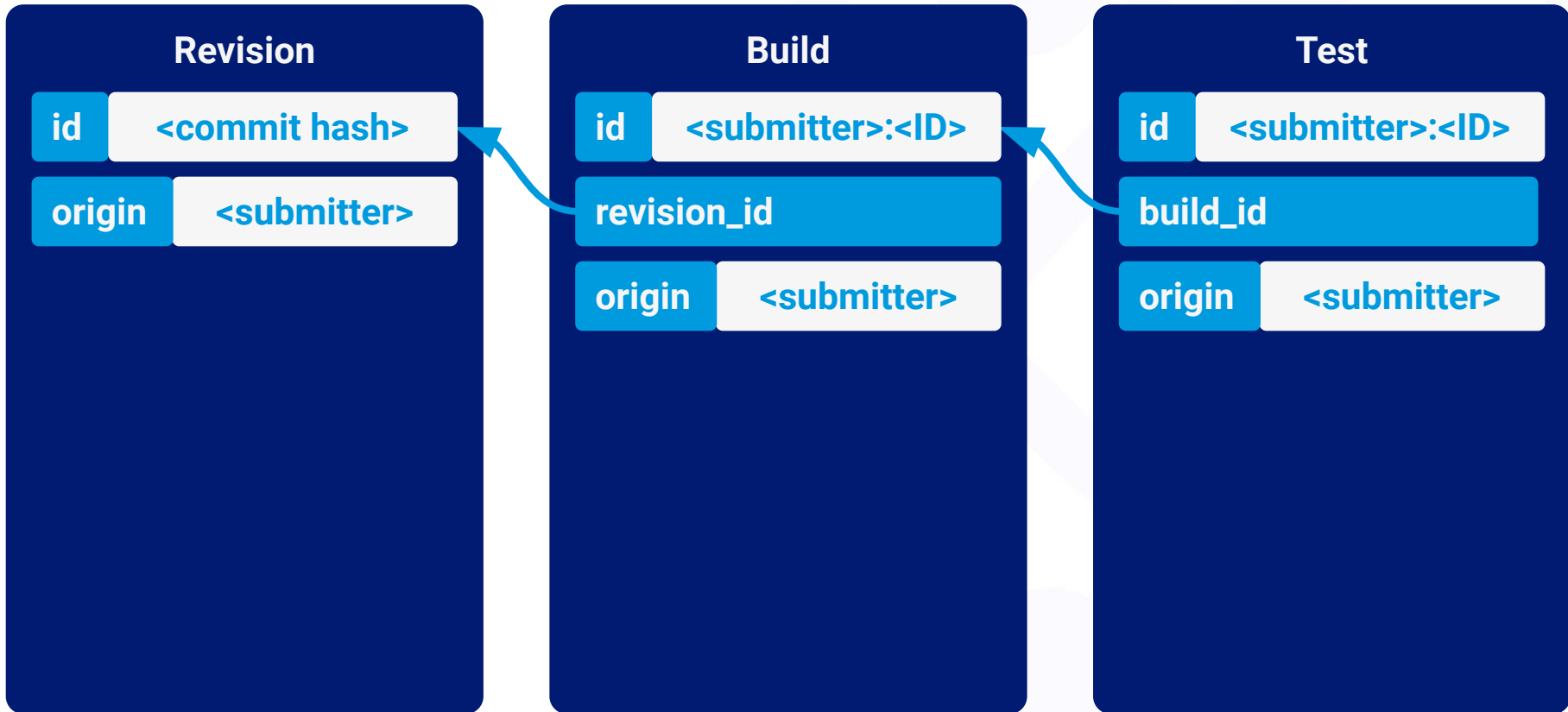
Report #3



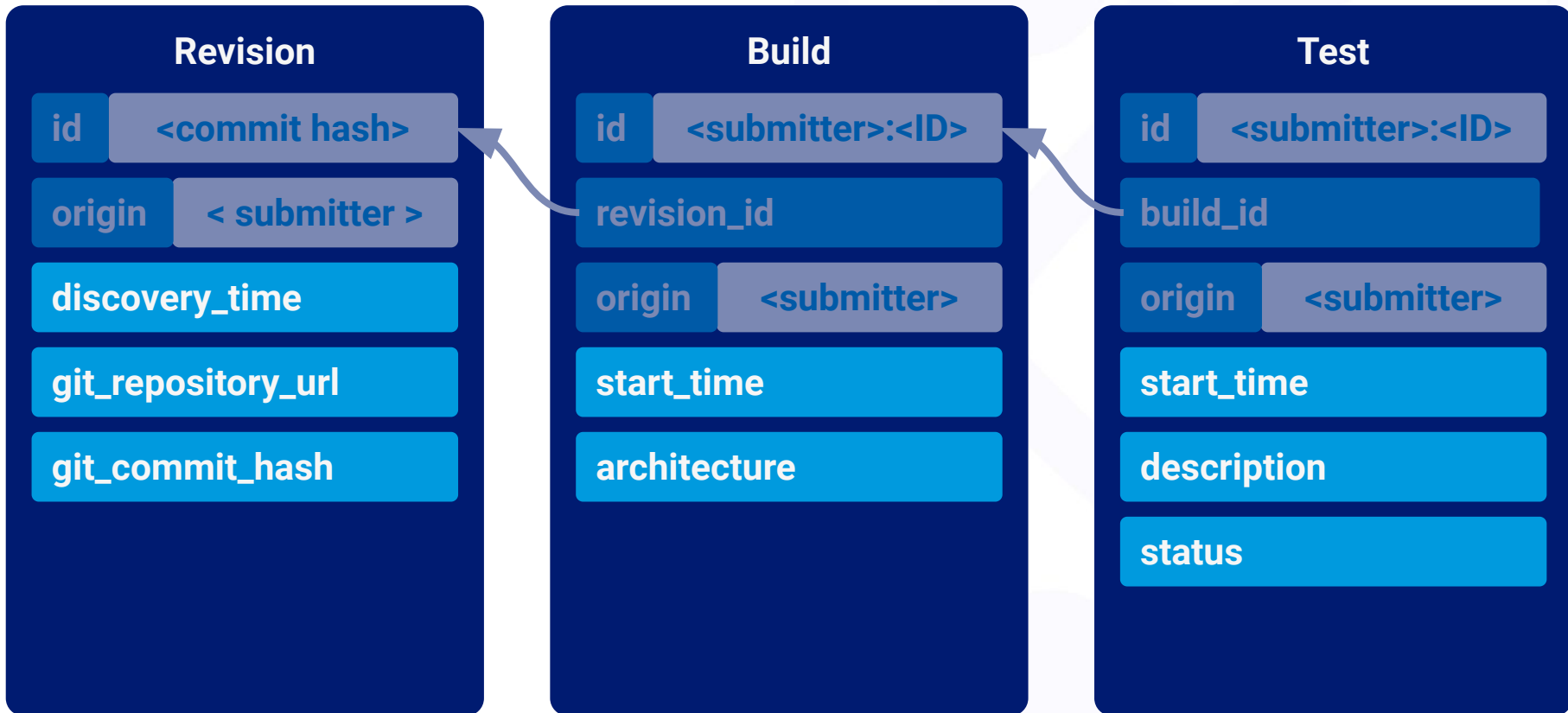
KernelCI Object IDs



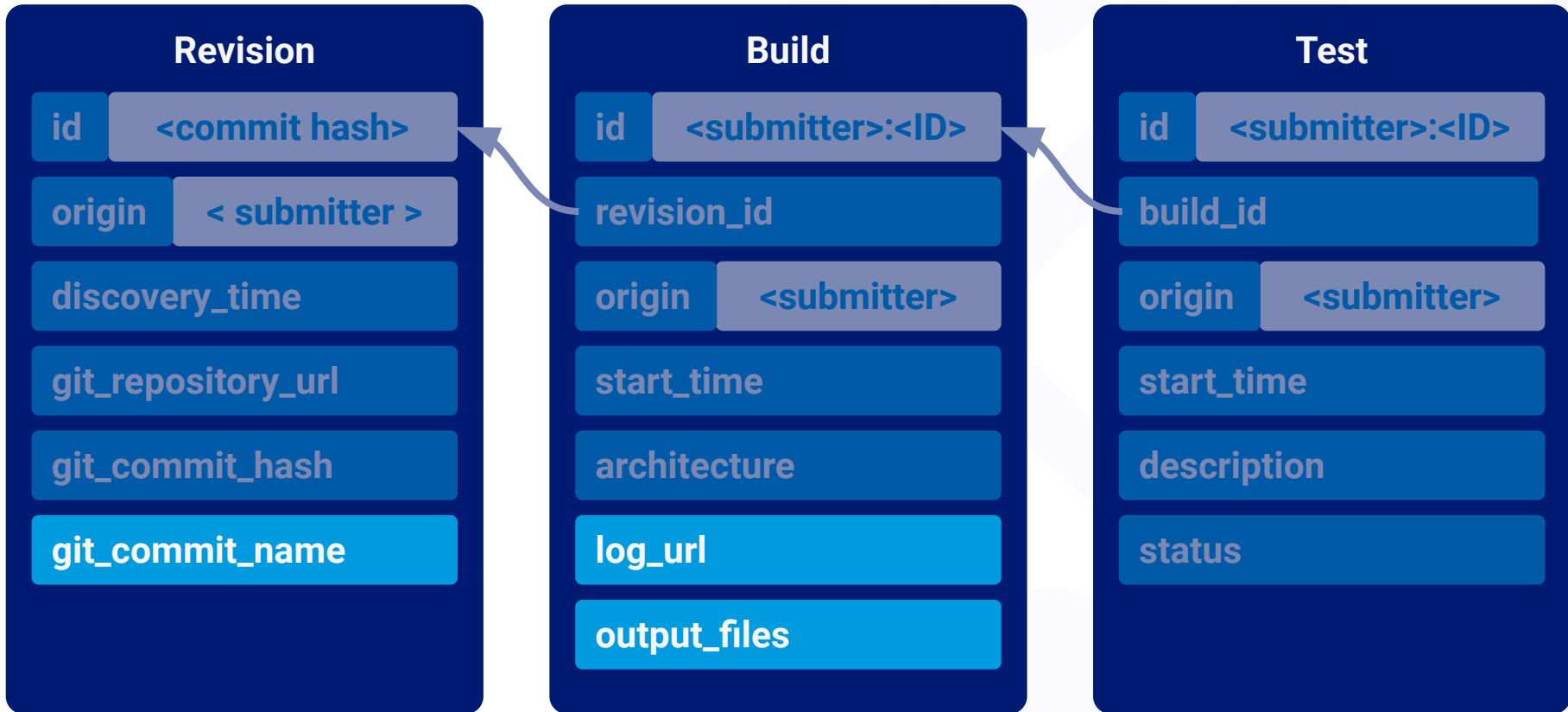
KernelCI Required Fields



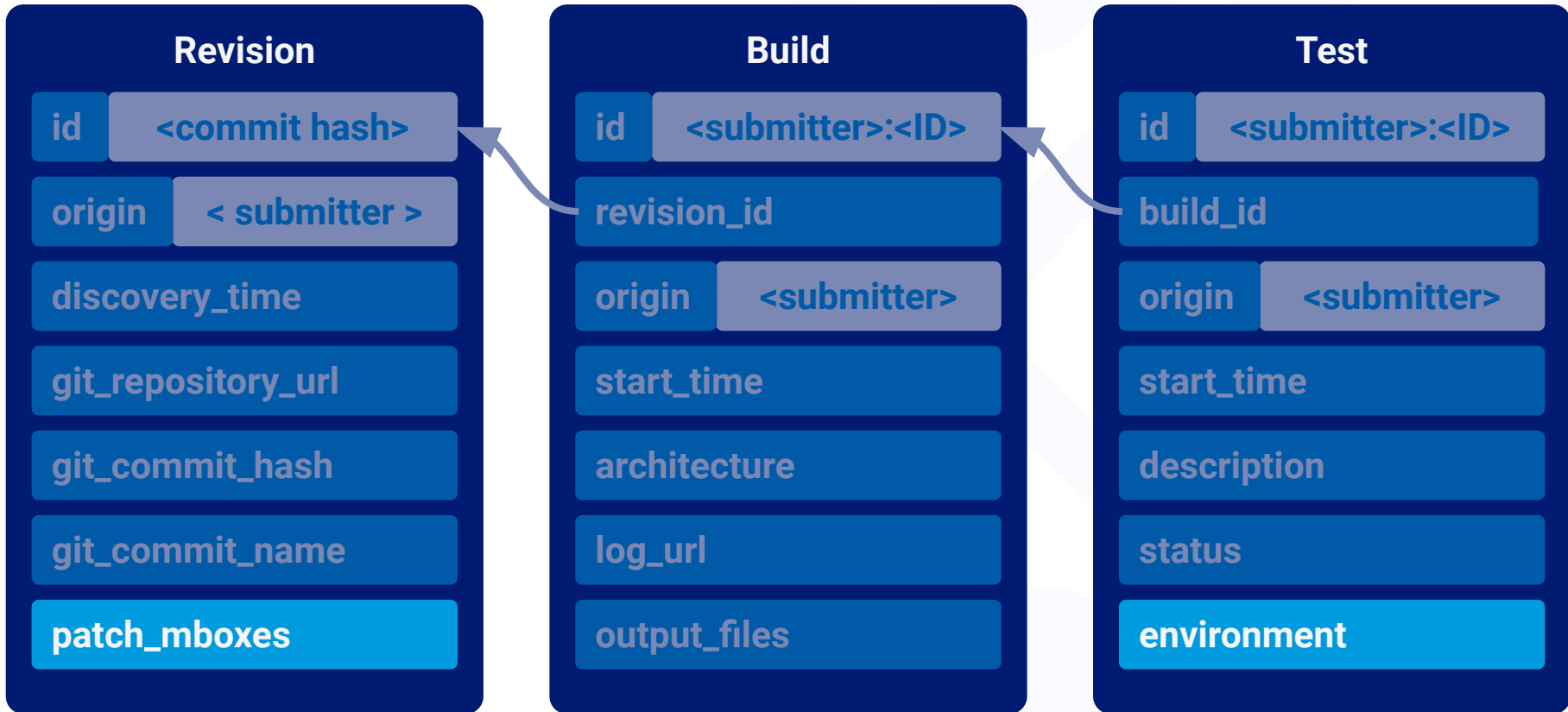
KernelCI Ramping Up



KernelCI Ramping Up



KernelCI Ramping Up





KernelCI Escape Hatch

Revision

misc

```
{
  "whatever": [
    "JSON"
  ],
  "you": "want"
}
```

Build

misc

```
[
  "for",
  "adding",
  "more data",
  "to be",
  "formalized"
]
```

Test

misc

```
{
  "for": [
    "debugging"
  ]
}
```

KernelCI Issues - Accommodating Syzbot

Revision

Build

Test

Issue

Incident



KernelCI Issues - Accommodating Syzbot

Revision

Build

Test

Issue

Incident

Linters - Accommodating 0-Day

Revision

Check

Build

Test



Revision

id

<commit hash>

origin

< submitter >

log_url

Build

id

<submitter>:<ID>

revision_id

origin

<submitter>

log_url

Test

id

<submitter>:<ID>

build_id

origin

<submitter>

output_files

name

url



Revision

id `<commit hash>`

origin `< submitter >`

log_url

log

Build

id `<submitter>:<ID>`

revision_id

origin `<submitter>`

log_url

log

Test

id `<submitter>:<ID>`

build_id

origin `<submitter>`

output_files

name

url

content



KernelCI All The Details

```
"additionalProperties": false,
"description": "A build of a revision",
"properties": {
  "architecture": {
    "description": "Target architecture of the build",
    "pattern": "^[a-z0-9_]*$",
    "type": "string"
  },
  "command": {
    "description": "Full shell command line used to make the build, including environment variables",
    "type": "string"
  },
  "compiler": {
    "description": "Name and version of the compiler used to build the binary",
    "type": "string"
  },
  "config_name": {
    "description": "A name describing the build configuration options.",
    "type": "string"
  },
  "config_url": {
    "description": "The URL of the build configuration file.",
    "format": "uri",
    "type": "string"
  },
  "description": {
    "description": "Human-readable description of the build",
    "type": "string"
  },
  "duration": {
    "description": "The number of seconds it took to complete the build",
    "type": "number"
  }
},
```

JSON Schema v3

From Dashboard to Dashboard

KernelCI Revision Example - origin



index : kernel/git/torvalds/linux.git

master ▼

switch

Linux kernel source tree

Linus Torvalds

about summary refs log tree **commit** diff stats

log msg ▼

search

author  Linus Torvalds <torvalds@linux-foundation.org> 2020-08-14 16:01:59 -0700
committer  Linus Torvalds <torvalds@linux-foundation.org> 2020-08-14 16:01:59 -0700
commit [c9c9735c46f589b9877b7fc00c89ef1b61a31e18](#) (patch)
tree [cef92dbb6db8a55caddeb942a60b55bfb0a2e493](#)
parent [fded09198826b2998242ed2e1a16527849884d3f](#) (diff)
parent [7e0e8be3a1fd1399373224e22d77487e63566704](#) (diff)
download [linux-c9c9735c46f589b9877b7fc00c89ef1b61a31e18.tar.gz](#)

diff options

context: 3 ▼

space: include ▼

mode: unified ▼

Merge tag 'scsi-misc' of git://git.kernel.org/pub/scm/linux/kernel/git/jejb/scsi

Pull more SCSI updates from James Bottomley:

"This is the set of patches which arrived too late to stabilise in
-next for the first pull.

It's really just an lpfc driver update and an assortment of minor
fixes, all in drivers. The only core update is to the zone block
device driver, which isn't the one most people use"

* tag 'scsi-misc' of git://git.kernel.org/pub/scm/linux/kernel/git/jejb/scsi:
scsi: lpfc: Update lpfc version to 12.8.0.3
scsi: lpfc: Fix LUN loss after cable pull

KernelCI Revision Example - origin

[Home](#) [Jobs](#) [Builds](#) [Tests](#) [SoCs](#) [Boots](#) [KCIDB](#) [Info](#)

Test Results: «v5.8-13377-gc9c9735c46f5» (mainline / master)

Tree mainline — 
Git branch master — 
Git describe v5.8-13377-gc9c9735c46f5 — 
Git URL <https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git>
Git commit c9c9735c46f589b9877b7fc00c89ef1b61a31e18
Date 2020-08-15



Available Test Plans

Q

Filter the results

Test Plan		Test Results				Status
baseline		507	493	11	3	
baseline-nfs		112	107	0	5	
cros-ec		54	17	1	36	
igt-gpu-panfrost		30	28	0	2	

KernelCI Revision Example - origin



Go to pipeline # ..

Anonymous

Dashboard

Metrics

Revisions

PIPELINES

Running

Submitter

Summary

Failures

PATCHES

Summary

Revision

Actions ▾

All / Revision

REVISION STATUS
Valid

BUILD STATUS
Passed

TEST STATUS
Failed

Revision ID: c9c9735c46f589b9877b7fc00c89ef1b61a31e18

Origin: redhat

Repository URL: <https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git>

Commit Hash: c9c9735c46f589b9877b7fc00c89ef1b61a31e18

Message ID:

Publishing Time: Aug. 14, 2020, 11:08 p.m.

Log URL:

Tree: mainline.kernel.org

Repository Branch: master

Commit Name:

Description:

Discovery Time: Aug. 14, 2020, 11:08 p.m.

KernelCI Revision Example - JSON

```
{
  "contacts": [],
  "discovery_time": "2020-08-14T23:08:06.967000+00:00",
  "git_commit_hash": "c9c9735c46f589b9877b7fc00c89ef1b61a31e18",
  "git_repository_branch": "master",
  "git_repository_url": "https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git",
  "id": "c9c9735c46f589b9877b7fc00c89ef1b61a31e18",
  "misc": {
    "pipeline_id": 612127
  },
  "origin": "redhat",
  "patch_boxes": [],
  "valid": true
},
```



Revision

Origin All

Home

Origin

kernelci

Repo

<https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git>

Log

Status

✓

Builds

X

Tests

FAIL

Branch

master

Name

v5.8-13377-gc9c9735c46f5

Hash

c9c9735c46f589b9877b7fc00c89ef1b61a31e18

Description

Discovery Time

2020-08-15 07:28:09.206+00

Builds

Origin	Description	Architecture	Configuration	Start time	Duration	Status	Tests
redhat	:	s390x	fedora	2020-08-14 23:08:10.008+00	00:04:41.000	✓	FAIL
redhat	:	x86_64	fedora	2020-08-14 23:08:10.008+00	00:11:51.000	✓	FAIL
redhat	:	ppc64le	fedora	2020-08-14 23:08:10.008+00	00:10:28.000	✓	FAIL
redhat	:	aarch64	fedora	2020-08-14 23:08:10.008+00	00:14:10.000	✓	FAIL
kernelci	v5.8-13377-gc9c9735c46f5	x86_64	x86_64_defconfig	2020-08-15 07:28:09.206+00	00:06:15.060	✓	PASS
kernelci	v5.8-13377-gc9c9735c46f5	arm	multi_v7_defconfig	2020-08-15 07:31:43.519+00	00:09:51.450	✓	FAIL
kernelci	v5.8-13377-gc9c9735c46f5	arm64	defconfig	2020-08-15 07:40:23.183+00	00:15:17.920	✓	FAIL
kernelci	v5.8-13377-gc9c9735c46f5	arm64	defconfig	2020-08-15 07:46:18.307+00	00:24:48.060	X	

Patches



Revision

Origin All

Home

Origin kernelci

Repo <https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git>

Log

Status ✓

Builds ✓

Tests FAIL

Branch master

Name v5.8-13377-gc9c9735c46f5

Hash c9c9735c46f589b9877b7fc00c89ef1b61a31e18

Description

Discovery Time 2020-08-15 07:28:09.206+00

Builds

Origin	Description	Architecture	Configuration	Start time	Duration	Status	Tests
redhat	:	s390x	fedora	2020-08-14 23:08:10.008+00	00:04:41.000	✓	FAIL
redhat	:	x86_64	fedora	2020-08-14 23:08:10.008+00	00:11:51.000	✓	FAIL
redhat	:	ppc64le	fedora	2020-08-14 23:08:10.008+00	00:10:28.000	✓	FAIL
redhat	:	aarch64	fedora	2020-08-14 23:08:10.008+00	00:14:10.000	✓	FAIL
kernelci	v5.8-13377-gc9c9735c46f5	x86_64	x86_64_defconfig	2020-08-15 07:28:09.206+00	00:06:15.060	✓	PASS
kernelci	v5.8-13377-gc9c9735c46f5	arm	multi_v7_defconfig	2020-08-15 07:31:43.519+00	00:09:51.450	✓	FAIL
kernelci	v5.8-13377-gc9c9735c46f5	arm64	defconfig	2020-08-15 07:40:23.183+00	00:15:17.920	✓	FAIL

Patches

Last 100 years

Search

Refresh



Revision

Origin All

Home

Origin kernelci

Repo <https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git>

Log

Status ✓

Builds ✓

Tests FAIL

Branch master

Name v5.8-13377-gc9c9735c46f5

Hash c9c9735c46f589b9877b7fc00c89ef1b61a31e18

Description

Discovery Time 2020-08-15 07:28:09.206+00

Builds

Origin	Description	Architecture	Configuration	Start time	Duration	Status	Tests
redhat	:	s390x	fedora	2020-08-14 23:08:10.008+00	00:04:41.000	✓	FAIL
redhat	:	x86_64	fedora	2020-08-14 23:08:10.008+00	00:11:51.000	✓	FAIL
redhat	:	ppc64le	fedora	2020-08-14 23:08:10.008+00	00:10:28.000	✓	FAIL
redhat	:	aarch64	fedora	2020-08-14 23:08:10.008+00	00:14:10.000	✓	FAIL
kernelci	v5.8-13377-gc9c9735c46f5	x86_64	x86_64_defconfig	2020-08-15 07:28:09.206+00	00:06:15.060	✓	PASS
kernelci	v5.8-13377-gc9c9735c46f5	arm	multi_v7_defconfig	2020-08-15 07:31:43.519+00	00:09:51.450	✓	FAIL
kernelci	v5.8-13377-gc9c9735c46f5	arm64	defconfig	2020-08-15 07:40:23.183+00	00:15:17.920	✓	FAIL

Patches



KernelCI Build Example - origin



Build Details: «v5.8-13377-gc9c9735c46f5» – x86_64_defconfig (mainline / master)

Tree	mainline —	Status	
Git branch	master —	Architecture	x86_64
Git describe	v5.8-13377-gc9c9735c46f5 — —	Build errors	0
Defconfig	x86_64_defconfig	Build warnings	0
Git URL	https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git	Build time	375.06sec.
Git commit	c9c9735c46f589b9877b7fc00c89ef1b61a31e18		
Date	2020-08-15 07:28:09 UTC		
Compiler	gcc		
Compiler version	8		
Compiler string	gcc (Debian 8.3.0-6) 8.3.0		
Cross-compile			
Build log	build.log (121.96 KiB)	Dtb	
Kernel config	kernel.config (123.29 KiB)	Modules	modules.tar.xz (49.52 KiB)
Config fragments		Kernel image	bzImage (8.62 MiB)
Text offset	0x01000000	System map	System.map (4.8 MiB)
		ELF file size	56.6 MiB
		ELF .bss section size	1,004 KiB
		ELF .data section size	1.52 MiB
		ELF .txt section size	14 MiB



KernelCI Build Example - JSON

```
{
  "architecture": "x86_64",
  "compiler": "gcc (Debian 8.3.0-6) 8.3.0",
  "config_name": "x86_64_defconfig",
  "config_url": "https://storage.staging.kernelci.org/mainline/master/v5.8-13377-gc9c9735c46f5/x86_64/x86_64_defconfig/gcc-8/kernel.config",
  "description": "v5.8-13377-gc9c9735c46f5",
  "duration": 375.06,
  "id": "kernelci:staging.kernelci.org:5f378e893e63ac340ab5009e",
  "input_files": [],
  "log_url": "https://storage.staging.kernelci.org/mainline/master/v5.8-13377-gc9c9735c46f5/x86_64/x86_64_defconfig/gcc-8/build.log",
  "misc": {
    "build_platform": [
      "Linux",
      "build-j6513-x86-64-gcc-8-x86-64-defconfig-8fbrg",
      "4.19.112+",
      "#1 SMP Tue Apr 28 06:48:29 PDT 2020",
      "x86_64",
      ""
    ],
    "kernel_image_size": 9040960,
    "vmlinux_bss_size": 1028096,
    "vmlinux_data_size": 1591936
  },
  "origin": "kernelci",
  "output_files": [
    {
      "name": "System.map",
      "url": "https://storage.staging.kernelci.org/mainline/master/v5.8-13377-gc9c9735c46f5/x86_64/x86_64_defconfig/gcc-8/System.map"
    },
    {
      "name": "modules",
      "url": "https://storage.staging.kernelci.org/mainline/master/v5.8-13377-gc9c9735c46f5/x86_64/x86_64_defconfig/gcc-8/modules.tar.xz"
    },
    {
      "name": "kernel_image",
      "url": "https://storage.staging.kernelci.org/mainline/master/v5.8-13377-gc9c9735c46f5/x86_64/x86_64_defconfig/gcc-8/bzImage"
    }
  ],
  "revision_id": "c9c9735c46f589b9877b7fc00c89ef1b61a31e18",
  "start_time": "2020-08-15T07:28:09.206000+00:00",
  "valid": true
},
```

KernelCI Build Example - dashboard

The dashboard displays the following information:

- Build Overview:**
 - Origin: kernelci
 - Description: v5.8-13377-gc9c9735c46f5
 - Output files: Name, System map, modules
 - Log File
 - Status: ✓
 - Tests: PASS
 - Configuration: x86_64_defconfig
- Compiler:** gcc (Debian 8.3.0-6) 8.3.0
- Tests Table:**

Origin	Path	Description	Start time	Duration	Status
kernelci	baseline.login	baseline on qemu_x86_64 in lab-baylibre	2020-08-15 07:29:26.227+00		PASS
kernelci	baseline.dmesg.crit	baseline on qemu_x86_64 in lab-baylibre	2020-08-15 07:29:26.232+00		PASS
kernelci	baseline.dmesg.alert	baseline on qemu_x86_64 in lab-baylibre	2020-08-15 07:29:26.235+00		PASS
kernelci	baseline.dmesg.emerg	baseline on qemu_x86_64 in lab-baylibre	2020-08-15 07:29:26.237+00		PASS
kernelci	baseline.bootnr.deferred-probe-empty	baseline on qemu_x86_64 in lab-baylibre	2020-08-15 07:29:26.243+00		PASS
kernelci	baseline.login	baseline on qemu_x86_64-uefi-mixed in lab-baylibre	2020-08-15 07:29:28.603+00		PASS
kernelci	baseline.dmesg.crit	baseline on qemu_x86_64-uefi-mixed in lab-baylibre	2020-08-15 07:29:28.608+00		PASS
kernelci	baseline.dmesg.alert	baseline on qemu_x86_64-uefi-mixed in lab-baylibre	2020-08-15 07:29:28.612+00		PASS
kernelci	baseline.dmesg.emerg	baseline on qemu_x86_64-uefi-mixed in lab-baylibre	2020-08-15 07:29:28.615+00		PASS
kernelci	baseline.bootnr.deferred-probe-empty	baseline on qemu_x86_64-uefi-mixed in lab-baylibre	2020-08-15 07:29:28.621+00		PASS
kernelci	baseline.login	baseline on qemu_x86_64-uefi in lab-baylibre	2020-08-15 07:29:29.678+00		PASS
kernelci	baseline.dmesg.crit	baseline on qemu_x86_64-uefi in lab-baylibre	2020-08-15 07:29:29.683+00		PASS
kernelci	baseline.dmesg.alert	baseline on qemu_x86_64-uefi in lab-baylibre	2020-08-15 07:29:29.686+00		PASS
kernelci	baseline.dmesg.emerg	baseline on qemu_x86_64-uefi in lab-baylibre	2020-08-15 07:29:29.689+00		PASS



«baseline.login» on qemu_x86_64-uefi (lab-collabora)

Status	
Job log	txt — html
Device Type	qemu_x86_64-uefi
SoC family	qemu
Architecture	x86_64
Endianness	little
Defconfig	x86_64_defconfig —
Kernel image	bzImage
Modules	modules.tar.xz
Device tree	

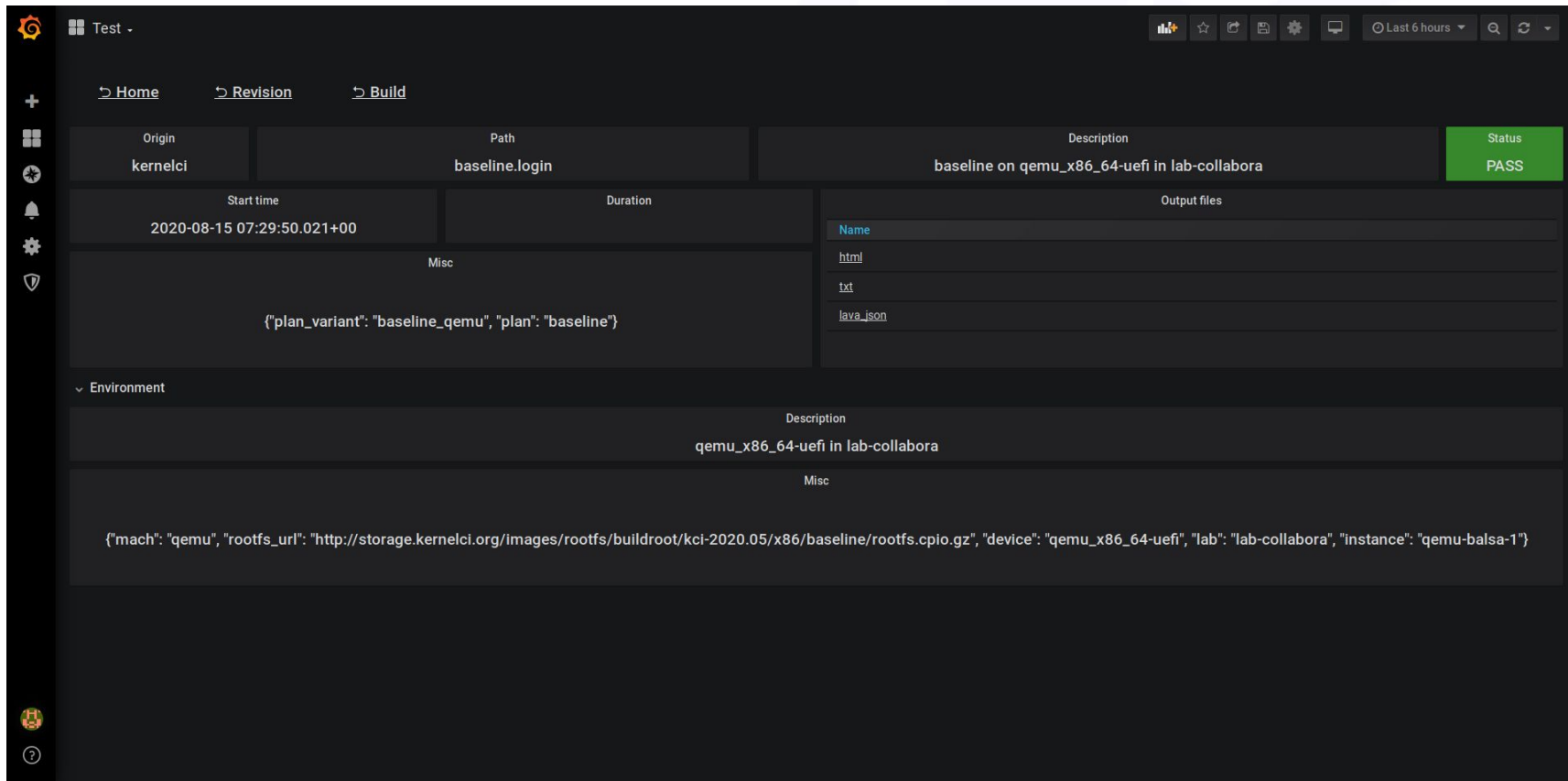
Tree	mainline —
Git branch	master —
Git describe	v5.8-13377-gc9c9735c46f5 — —
Plan	baseline —
Git URL	https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git
Git commit	c9c9735c46f589b9877b7fc00c89ef1b61a31e18
Compiler	gcc (Debian 8.3.0-6) 8.3.0
Date	2020-08-15



KernelCI Test Example - JSON

```
{
  "build_id": "kernelci:staging.kernelci.org:5f378e893e63ac340ab5009e",
  "description": "baseline on qemu_x86_64-uefi in lab-collabora",
  "environment": {
    "description": "qemu_x86_64-uefi in lab-collabora",
    "misc": {
      "device": "qemu_x86_64-uefi",
      "instance": "qemu-balsa-1",
      "lab": "lab-collabora",
      "mach": "qemu",
      "rootfs_url": "http://storage.kernelci.org/images/rootfs/buildroot/kci-2020.05/x86/baseline/rootfs.cpio.gz"
    }
  },
  "id": "kernelci:staging.kernelci.org:5f378eee3e63ac340ab500b3",
  "misc": {
    "plan": "baseline",
    "plan_variant": "baseline_qemu"
  },
  "origin": "kernelci",
  "output_files": [
    {
      "name": "html",
      "url": "https://storage.staging.kernelci.org/mainline/master/v5.8-13377-gc9c9735c46f5/x86_64/x86_64_defconfig/gcc-8/lab-collabora/baseline-qemu_x86_64-uefi.html"
    },
    {
      "name": "txt",
      "url": "https://storage.staging.kernelci.org/mainline/master/v5.8-13377-gc9c9735c46f5/x86_64/x86_64_defconfig/gcc-8/lab-collabora/baseline-qemu_x86_64-uefi.txt"
    },
    {
      "name": "lava_json",
      "url": "https://storage.staging.kernelci.org/mainline/master/v5.8-13377-gc9c9735c46f5/x86_64/x86_64_defconfig/gcc-8/lab-collabora/lava-qemu_x86_64-uefi.json"
    }
  ],
  "path": "baseline.login",
  "start_time": "2020-08-15T07:29:50.021000+00:00",
  "status": "PASS",
  "waived": false
},
```

KernelCI Test Example - dashboard



The screenshot displays the KernelCI Test dashboard for a specific test run. The interface is dark-themed and includes a sidebar with navigation icons (Home, Revision, Build) and a top bar with a search and filter menu. The main content area shows the test details for 'baseline' on 'qemu_x86_64-uefi' in the 'lab-collabora' environment. The test status is 'PASS'.

Origin	Path	Description	Status
kernelci	baseline.login	baseline on qemu_x86_64-uefi in lab-collabora	PASS

Start time	Duration	Output files
2020-08-15 07:29:50.021+00		Name
		html
		txt
		lava_json

Misc

```
{"plan_variant": "baseline_qemu", "plan": "baseline"}
```


Environment

Description

qemu_x86_64-uefi in lab-collabora

Misc

```
{"mach": "qemu", "rootfs_url": "http://storage.kernelci.org/images/rootfs/buildroot/kci-2020.05/x86/baseline/rootfs.cpio.gz", "device": "qemu_x86_64-uefi", "lab": "lab-collabora", "instance": "qemu-balsa-1"}
```

KernelCI Test Example - origin



Dashboard

Metrics

Revisions

PIPELINES

Running

Submitter

Summary

Failures

PATCHES

Summary

Go to pipeline # ..

Anonymous

Test

Actions ▾

All / Revision / Build / Test

TEST STATUS

PASS



Test ID: redhat:114353810

Status: PASS

Origin: redhat

Description: Boot test

Path: boot

Start Time: Aug. 14, 2020, 11:41 p.m.

Environment: hpe-dl380pgen8-02-vm-14.hpe2.lab.eng.bos.redhat.com

Waived: No

Duration: 116



```
{
  "build_id": "redhat:956769",
  "description": "Boot test",
  "duration": 116.0,
  "id": "redhat:114353810",
  "misc": {
    "beaker_recipe_id": 8687594,
    "beaker_task_id": 114353810,
    "job_id": 956777,
    "pipeline_id": 612127
  },
  "origin": "redhat",
  "output_files": [
    {
      "name": "8687594_x86_64_1_console.log",
      "url": "https://s3.us-east-2.amazonaws.com/cki-artifacts/datawarehouse/2020/08/14/612127/build_x86_64_redhat:956769/tests/8687594_x86_64_1_console.log"
    },
    {
      "name": "8687594_x86_64_1_avc.log",
      "url": "https://s3.us-east-2.amazonaws.com/cki-artifacts/datawarehouse/2020/08/14/612127/build_x86_64_redhat:956769/tests/Boot_test/8687594_x86_64_1_avc.log"
    },
    {
      "name": "8687594_x86_64_1_dmesg.log",
      "url": "https://s3.us-east-2.amazonaws.com/cki-artifacts/datawarehouse/2020/08/14/612127/build_x86_64_redhat:956769/tests/Boot_test/8687594_x86_64_1_dmesg.log"
    },
    {
      "name": "8687594_x86_64_1_taskout.log",
      "url": "https://s3.us-east-2.amazonaws.com/cki-artifacts/datawarehouse/2020/08/14/612127/build_x86_64_redhat:956769/tests/Boot_test/8687594_x86_64_1_taskout.log"
    },
    {
      "name": "8687594_x86_64_1_harness.log",
      "url": "https://s3.us-east-2.amazonaws.com/cki-artifacts/datawarehouse/2020/08/14/612127/build_x86_64_redhat:956769/tests/Boot_test/8687594_x86_64_1_harness.log"
    }
  ],
  "path": "boot",
  "start_time": "2020-08-14T23:41:54+00:00",
  "status": "PASS",
  "waived": false
}
```

KernelCI Test Example - dashboard

The screenshot displays the KernelCI Test dashboard for a specific test run. The interface is dark-themed and includes a sidebar with navigation icons (gear, home, revision, build, etc.) and a main content area. At the top right, there are utility icons for charts, favorites, share, download, settings, and a 'Last 6 hours' filter. The main content area shows the test details for 'redhat' (Origin) and 'boot' (Path). The test description is 'Boot test', and the status is 'PASS' (highlighted in green). Below this, the start time is '2020-08-14 23:41:54+00' and the duration is '00:01:56.000'. A 'Misc' section contains a JSON object with pipeline, job, beaker task, and beaker recipe IDs. To the right, under 'Output files', a list of log files is shown, including console, avc, dmesg, and taskout logs. At the bottom, an 'Environment' section is partially visible.

Origin	Path	Description	Status
redhat	boot	Boot test	PASS

Start time	Duration	Output files					
2020-08-14 23:41:54+00	00:01:56.000	<table border="1"><thead><tr><th>Name</th></tr></thead><tbody><tr><td>8687594_x86_64_1_console.log</td></tr><tr><td>8687594_x86_64_1_avc.log</td></tr><tr><td>8687594_x86_64_1_dmesg.log</td></tr><tr><td>8687594_x86_64_1_taskout.log</td></tr></tbody></table>	Name	8687594_x86_64_1_console.log	8687594_x86_64_1_avc.log	8687594_x86_64_1_dmesg.log	8687594_x86_64_1_taskout.log
Name							
8687594_x86_64_1_console.log							
8687594_x86_64_1_avc.log							
8687594_x86_64_1_dmesg.log							
8687594_x86_64_1_taskout.log							

Misc

```
{"pipeline_id": 612127, "job_id": 956777, "beaker_task_id": 114353810, "beaker_recipe_id": 8687594}
```


Environment

Description

Misc

--

Correlation

commit hash

or

commit hash+patchset hash

1d4db6a7b342d54cc

or

f0f2250fd11c4fb+b0d479287382a5

KernelCI Correlation - Patchset Hash

```
nkondras@bard:~$ sha256sum *.patch | cut -c-64 | sha256sum | cut -c-64
aa98bec5becf3edb58a18be346547c1a2a02e2bde02a06f9cc7e10dc35c6276c
nkondras@bard:~$
```

```
patches_hash = hashlib.sha256()
for patch_mbox in patch_mboxes:
    patches_hash.update(
        (hashlib.sha256(patch_mbox.encode()).hexdigest() + "\n").encode()
    )
patches_hash_text = patches_hash.hexdigest()
```



KernelCI Test Catalog

```
70  jcstress:
71      title: The Java Concurrency Stress tests
72      home: https://wiki.openjdk.java.net/display/CodeTools/jcstress
73  kselftest:
74      title: Kernel self-tests
75      home: https://kselftest.wiki.kernel.org/
76  kvm-unit-tests:
77      title: KVM unit tests
78      home: https://www.linux-kvm.org/page/KVM-unit-tests
79  libhugetlbfs:
80      title: Libhugetlbfs test suite
81      home: https://github.com/libhugetlbfs/libhugetlbfs
82  ltp:
83      title: Linux Test Project test suite
84      home: https://linux-test-project.github.io
```

KernelCI Test Catalog

```
70  jcstress:
71      title: The Java Concurrency Stress tests
72      home: https://wiki.openjdk.java.net/display/CodeTools/jcstress
73  kselftest:
74      title: Kernel self-tests
75      home: https://kselftest.wiki.kernel.org/
76  kvm-unit-tests:
77      title: KVM unit tests
78      home: https://www.linux-kvm.org/page/KVM-unit-tests
79  libhugetlbfs:
80      title: Libhugetlbfs test suite
81      home: https://github.com/libhugetlbfs/libhugetlbfs
82  ltp:
83      title: Linux Test Project test suite
84      home: https://linux-test-project.github.io
```

```
kselftest:  
  title: Kernel self-tests  
  home: https://kselftest.wiki.kernel.org/
```

```
kselftest
```

```
title: Kernel self-tests
```

```
home: https://kselftest.wiki.kernel.org/
```

```
"tests": [  
  {  
    "id": "redhat:112597281",  
    "build_id": "redhat:928663",  
    "description": "kselftests upstream - net",  
    "duration": 7558.0,  
    "origin": "redhat",  
    "path": "kselftest",  
    "start_time": "2020-07-02T23:45:13+00:00",  
    "status": "FAIL",  
    "waived": true,  
  }  
]
```

```
"tests": [  
  {  
    "id": "redhat:112597281",  
    "build_id": "redhat:928663",  
    "description": "kselftests upstream - net",  
    "duration": 7558.0,  
    "origin": "redhat",  
    "path": "kselftest",  
    "start_time": "2020-07-02T23:45:13+00:00",  
    "status": "FAIL",  
    "waived": true,  
  }  
]
```

KernelCI Test Path

The screenshot displays the KernelCI Test Path interface. At the top, there's a navigation bar with links for Home, Revision, and Build. Below this, a table shows the test run details. The test is identified by its Origin (redhat), Path (kselftest), and Description (kselftests upstream - net). The Status is indicated as FAIL. The Start time is 2020-07-02 23:45:13+00, and the Duration is 02:05:58.000. The Output files section lists several log files. The Environment section is currently collapsed.

Origin	Path	Description	Status
redhat	kselftest	kselftests upstream - net	FAIL

Start time	Duration	Output files					
2020-07-02 23:45:13+00	02:05:58.000	<table border="1"><thead><tr><th>Name</th></tr></thead><tbody><tr><td>8513451_x86_64_1_resultoutputfile.log</td></tr><tr><td>8513451_x86_64_1_taskout.log</td></tr><tr><td>8513451_x86_64_1_ps-lwd.log</td></tr><tr><td>8513451_x86_64_1_journalctl</td></tr></tbody></table>	Name	8513451_x86_64_1_resultoutputfile.log	8513451_x86_64_1_taskout.log	8513451_x86_64_1_ps-lwd.log	8513451_x86_64_1_journalctl
Name							
8513451_x86_64_1_resultoutputfile.log							
8513451_x86_64_1_taskout.log							
8513451_x86_64_1_ps-lwd.log							
8513451_x86_64_1_journalctl							

Misc

{"beaker_recipe_id": 8513451, "beaker_task_id": 112597281, "job_id": 928671, "pipeline_id": 609500}

Environment

Description

Misc

KernelCI Test Path

The screenshot displays the KernelCI Test Path interface. At the top, there's a navigation bar with 'Home', 'Revision', and 'Build' links. Below this, a table lists test runs. The first row is highlighted with a blue box, showing 'redhat' as the origin and 'kselftest' as the path. The description for this test is 'kselftests upstream - net'. The status is 'FAIL', indicated by a red icon. Below the table, there's a section for 'Output files' with a list of log files. The 'Environment' section is also visible, showing details like 'Start time' (2020-07-02 23:45:13+00) and 'Duration' (02:05:58.000). A 'Misc' section contains a JSON object: `{"beaker_recipe_id": 8513451, "beaker_task_id": 112597281, "job_id": 928671, "pipeline_id": 609500}`.

Origin	Path	Description	Status
redhat	kselftest	kselftests upstream - net	FAIL

Start time: 2020-07-02 23:45:13+00
Duration: 02:05:58.000

Misc: `{"beaker_recipe_id": 8513451, "beaker_task_id": 112597281, "job_id": 928671, "pipeline_id": 609500}`

Environment

Description

Misc

Output files

- 8513451_x86_64_1_resultoutputfile.log
- 8513451_x86_64_1_taskout.log
- 8513451_x86_64_1_ps-lwd.log
- 8513451_x86_64_1_journalctl

```
"tests": [  
  {  
    "id": "redhat:112597281",  
    "build_id": "redhat:928663",  
    "description": "kselftests upstream - net",  
    "duration": 7558.0,  
    "origin": "redhat",  
    "path": "kselftest",  
    "start_time": "2020-07-02T23:45:13+00:00",  
    "status": "FAIL",  
    "waived": true,  
  }  
]
```



KernelCI Test Path Descending

```
"tests": [  
  {  
    "id": "redhat:112597281",  
    "build_id": "redhat:928663",  
    "description": "kselftests upstream - net",  
    "duration": 7558.0,  
    "origin": "redhat",  
    "path": "kselftest.net.reuseport_dualstack",  
    "start_time": "2020-07-02T23:45:13+00:00",  
    "status": "FAIL",  
    "waived": true,  
  }  
]
```

```
"tests": [  
  {  
    "id": "kernelci:staging.kernelci.org:5f436b7de6506e49b677f49e",  
    "build_id": "kernelci:staging.kernelci.org:5f436b211b9a5d7eae77f4a9",  
    "description": "baseline on qemu_x86_64-uefi-mixed in lab-collabora",  
    "environment": {  
      "description": "qemu_x86_64-uefi-mixed in lab-collabora",  
      "misc": {  
        "device": "qemu_x86_64-uefi-mixed",  
        "instance": "qemu-rack-2",  
        "lab": "lab-collabora",  
        "mach": "qemu",  
        "rootfs_url": "http://storage.kernelci.org/images/.../rootfs.cpio.gz"  
      }  
    }  
  },  
]
```

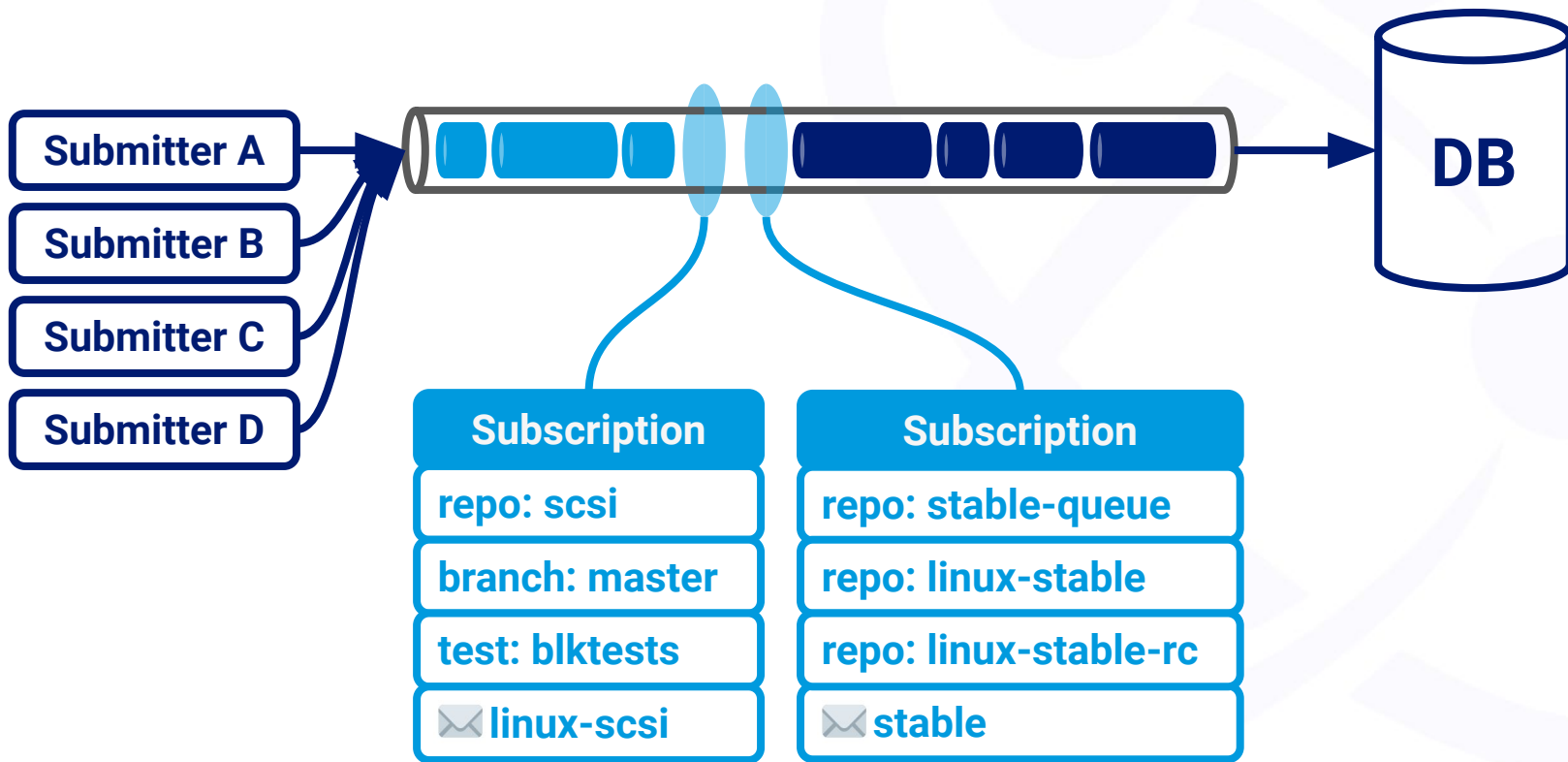
```
"tests": [  
  {  
    "id": "kernelci:staging.kernelci.org:5f436b7de6506e49b677f49e",  
    "build_id": "kernelci:staging.kernelci.org:5f436b211b9a5d7eae77f4a9",  
    "description": "baseline on qemu x86 64-uefi-mixed in lab-collabora",  
    "environment": {  
      "description": "qemu_x86_64-uefi-mixed in lab-collabora",  
      "misc": {  
        "device": "qemu_x86_64-uefi-mixed",  
        "instance": "qemu-rack-2",  
        "lab": "lab-collabora",  
        "mach": "qemu",  
        "rootfs_url": "http://storage.kernelci.org/images/.../rootfs.cpio.gz"  
      }  
    }  
  },  
]
```

Submitter-supplied

Levenshtein distance over JSON?

Weighted property comparison?

Subscriptions and Notifications



Subscription Example

```
1  """Stable tree subscriptions"""
2
3  from kcidb.misc import NotificationMessage as Message
4
5  REPO_URL_BASE = "https://git.kernel.org/pub/scm/linux/kernel/git"
6  REPO_URL_LIST = [
7      REPO_URL_BASE + suffix for suffix in [
8          "/stable/linux-stable-rc.git",
9          "/sashal/linux-stable.git",
10         "/stable/stable-queue.git",
11     ]
12 ]
13
14
15 def match_revision(revision):
16     """Match revisions of interest to stable tree developers"""
17     recipients = ["Linux Stable maillist <stable@vger.kernel.org>"]
18     if revision.git_repository_url not in REPO_URL_LIST:
19         return ()
20     for build in revision.builds_.values():
21         if not build.valid:
22             return (Message(recipients, "Builds failed for "),)
23         for test in build.tests_.values():
24             if test.status == "FAIL" and not test.waived:
25                 return (Message(recipients, "Tests failed for "),)
26     return ()
```

KernelCI A PoC Report

Below is the summary of testing results Kernel CI database has recorded for this revision so far. See complete and up-to-date report at:

<https://staging.kernelci.org:3000/d/revision/revision?orgId=1&var-id=c9c9735c46f589b9877b7fc00c89ef1b61a31e18>

OVERVIEW

Revision: 
Builds: 
Tests:  FAIL

REVISION

Status



Repo

URL: <https://git.kernel.org/pub/scm/linux/kernel/git/torvalds/linux.git>

branch: master

Commit

name: v5.8-13377-gc9c9735c46f5

hash: c9c9735c46f589b9877b7fc00c89ef1b61a31e18

Discovered

by: kernelci

at: 2020-08-15T07:28:09.206000+00:00

KernelCI A PoC Report

BUILDS

Status



- ✗ arm64 defconfig v5.8-13377-gc9c9735c46f5
- ✓ x86_64 x86_64_defconfig v5.8-13377-gc9c9735c46f5
- ✓ arm64 defconfig v5.8-13377-gc9c9735c46f5
- ✓ x86_64 fedora
- ✓ arm_multi_v7_defconfig v5.8-13377-gc9c9735c46f5
- ✓ s390x fedora
- ✓ aarch64 fedora
- ✓ ppc64le fedora

KernelCI A PoC Report

BUILDS

Status



- ✗ arm64 defconfig v5.8-13377-gc9c9735c46f5
- ✓ x86_64 x86_64_defconfig v5.8-13377-gc9c9735c46f5
- ✓ arm64 defconfig v5.8-13377-gc9c9735c46f5
- ✓ x86_64 fedora
- ✓ arm multi_v7_defconfig v5.8-13377-gc9c9735c46f5
- ✓ s390x fedora
- ✓ aarch64 fedora
- ✓ ppc64le fedora



KernelCI A PoC Report

BUILDS

Status



✗ arm64 defconfig v5.8-13377-gc9c9735c46f5
✓ x86_64 x86_64_defconfig v5.8-13377-gc9c9735c46f5
✓ arm64 defconfig v5.8-13377-gc9c9735c46f5
✓ x86_64 fedora
✓ arm multi_v7_defconfig v5.8-13377-gc9c9735c46f5
✓ s390x fedora
✓ aarch64 fedora
✓ ppc64le fedora



KernelCI A PoC Report

TESTS

Status

✗ FAIL

✗ arm64 defconfig v5.8-13377-gc9c9735c46f5

- ✓ baseline.login - baseline on hip07-d05 in lab-collabora
- ✓ baseline.bootrr.deferred-probe-empty - baseline on hip07-d05 in lab-collabora
- ✓ baseline.dmesg.crit - baseline on hip07-d05 in lab-collabora
- ✗ baseline.dmesg.alert - baseline on hip07-d05 in lab-collabora
- ✗ baseline.dmesg.emerg - baseline on hip07-d05 in lab-collabora
- ✓ baseline.login - baseline on sun50i-h6-pine-h64 in lab-collabora
- ✓ baseline.bootrr.deferred-probe-empty - baseline on sun50i-h6-pine-h64 in lab-collabora
- ✓ baseline.dmesg.crit - baseline on sun50i-h6-pine-h64 in lab-collabora
- ✓ baseline.dmesg.alert - baseline on sun50i-h6-pine-h64 in lab-collabora
- ✓ baseline.dmesg.emerg - baseline on sun50i-h6-pine-h64 in lab-collabora
- ✓ baseline-nfs.login - baseline-nfs on hip07-d05 in lab-collabora
- ✓ baseline-nfs.bootrr.deferred-probe-empty - baseline-nfs on hip07-d05 in lab-collabora
- ✓ baseline-nfs.dmesg.crit - baseline-nfs on hip07-d05 in lab-collabora
- ✗ baseline-nfs.dmesg.alert - baseline-nfs on hip07-d05 in lab-collabora
- ✗ baseline-nfs.dmesg.emerg - baseline-nfs on hip07-d05 in lab-collabora
- ✓ baseline.login - baseline on rk3328-rock64 in lab-baylibre
- ✓ baseline.dmesg.crit - baseline on rk3328-rock64 in lab-baylibre
- ✓ baseline.dmesg.alert - baseline on rk3328-rock64 in lab-baylibre



KernelCI A PoC Report

```
✗ x86_64 fedora
✗ ltp - LTP
✓ boot - Boot test
✓ boot - Boot test
✓ boot - Boot test
✓ redhat_cpu_idle_power - CPU: Idle Test
✓ redhat_loopdev - Loopdev Sanity
✓ xfstests - xfstests - xfs
✓ redhat_acpi_table - ACPI table test
✓ redhat_l2tp - L2TP basic test
✓ redhat_kdump.sysrq-c - kdump - sysrq-c
✓ xfstests - xfstests - ext4
✓ xfstests - xfstests - btrfs
✓ redhat_kdump.file_load - kdump - file-load
✓ stress-ng - stress: stress-ng
✓ redhat_udp_socket - Networking UDP: socket
✓ redhat_pmtu - Networking route: pmtu
✓ redhat_ethernet - Ethernet drivers sanity
✓ redhat_socket_fuzz - Networking socket: fuzz
✓ redhat_bridge - Networking bridge: sanity
✗ redhat_cpufreq_driver - CPU: Frequency Driver Test
✓ redhat_gre - Networking tunnel: gre basic
✓ redhat_memfd_create - Memory function: memfd_create
✓ redhat_route - Networking route_func - local
```



Submission Interface

```
nkondras@bard:~$ export GOOGLE_APPLICATION_CREDENTIALS=~/.kernelci-production-ci-cki.json
nkondras@bard:~$ kcidb-submit -p kernelci-production -t kernelci_new <<"EOF"
> {
>   "version": {
>     "major": 3,
>     "minor": 0
>   }
> }
> EOF
nkondras@bard:~$ █
```

```
#!/usr/bin/env python3

import kcidb

client = kcidb.Client(project_id="kernelci-production",
                      topic_name="kernelci_new")

report = dict(
    version=dict(major=3, minor=0)
)

client.submit(report)
```



kernelci-backend

```

1 # Lines (229 slots) 0.57 KB
2 # Copyright (C) Collabora Limited 2019, 2020
3 # Author: Guillaume Tucker <guillaume.tucker@collabora.com>
4 #
5 # This program is Free Software; you can redistribute it and/or modify it under
6 # the terms of the GNU Lesser General Public License as published by the Free
7 # Software Foundation; either version 2.1 of the License, or (at your option)
8 # any later version.
9 #
10 # This program is distributed in the hope that it will be useful, but WITHOUT
11 # ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS
12 # FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more
13 # details.
14 #
15 # You should have received a copy of the GNU Lesser General Public License
16 # along with this library; if not, write to the Free Software Foundation, Inc.,
17 # 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA
18
19 """Push data using kicdb-submit."""
20
21 import json
22 import os
23 import subprocess
24 import urlparse
25
26 import models
27 import utils
28 import utils.db
29
30 from utils.report.common import DEFAULT_STORAGE_URL as STORAGE_URL
31
32 # Mapping between kicdb revision keys and build documents
33 BUILD_REV_KEY_MAP = {
34     'git_repository_url': models.GIT_URL_KEY,
35     'git_repository_commit_hash': models.GIT_COMMIT_KEY,
36     'git_repository_commit_name': models.GIT_DESCRIBE_V_KEY,
37     'git_repository_branch': models.GIT_BRANCH_KEY,
38 }
39
40 def _make_id(raw_id, ns):
41     return ':%s:%s' % (ns, str(raw_id))
42
43
44 def _get_build_doc(group, db):
45     keys = [
46         models.JOB_KEY,
47         models.KERNEL_KEY,
48         models.GIT_BRANCH_KEY,
49         models.ARCHITECTURE_KEY,
50         models.DEFCONFIG_KEY,
51         models.BUILD_ENVIRONMENT_KEY,
52     ]
53     spec = {k: group[k] for k in keys}
54
55     return utils.db.find_one(db=models.BUILD_COLLECTION, spec=spec)
56
57
58 def _get_test_cases(group, db, hierarchy, ns):
59     case_collection = db(models.TEST_CASE_COLLECTION)
60     group_collection = db(models.TEST_GROUP_COLLECTION)
61
62     hierarchy = hierarchy + [group[models.NAME_KEY]]
63     tests = [

```

```

56         'id': make_id(test=models.ID, ns),
57         'path': '-'.join(hierarchy = [test[models.NAME_KEY]]),
58         'status': test[models.STATUS_KEY]},
59     }
60     # TODO: get start and duration times from LAWA log timestamps
61     'start_time': test[models.CREATED_KEY].isoformat(),
62 }
63
64     for test in (
65         utils.do_find_one(case=collection, test_id)
66         for test_id in group[models.TEST_CASES_KEY]
67     )
68
69     for sub_group_id in group[models.SUB_GROUPS_KEY]:
70         sub_group = utils.do_find_one(group=collection, sub_group_id)
71         tests = _get_test_cases(sub_group, db, hierarchy, ns)
72
73     return tests
74
75
76
77
78
79
80
81
82
83 def _subdel(data, kcidb_options):
84     json_data = json.dumps(data, indent=2)
85     if kcidb_options.get("debug"):
86         utils.LOG.info("Submitting with kcidb=")
87         utils.LOG.info(json_data)
88     local_env = dict(s=environ)
89     local_env["GOOGLE_APPLICATION_CREDENTIALS"] = kcidb_options["credentials"]
90     kcidb_path = kcidb_options.get("kcidb_path", "")
91     db_id = os.path.join(kcidb_path, "kcidb-subdel")
92     p = subprocess.Popen(kcidb_subdel,
93                          cwd=kcidb_path,
94                          stdin=subprocess.PIPE,
95                          stdout=subprocess.PIPE,
96                          env=local_env)
97     p.communicate(input=json_data)
98     if p.returncode:
99         utils.LOG.warn("Failed to push data kcidb")
100
101
102
103 def push_build(build_id, first, kcidb_options, db_options(), db=None):
104     db = utils.do_get_db_connection(db_options)
105     origin = kcidb_options.get("origin", "hermcel")
106     ns = kcidb_options.get("namespace", "hermcel.org")
107     build = utils.do_find_one(models.BUILD_COLLECTION, build_id)
108     build_id = build[models.BUILD_ID_KEY], ns
109     revision_id = build[models.GIT_COMMIT_KEY]
110
111     kcidb_data = {
112         'version': '1',
113     }
114
115     if first:
116         kcidb_revision = {
117             'origin': origin,
118             'origin_id': revision_id,
119             'valid': True,
120             'discovery_time': build[models.CREATED_KEY].isoformat(),
121         }
122     else:
123         kcidb_revision.update({
124             kcidb_key: build[build_key]
125             for kcidb_key, build_key in BUILD_REV_NEW_MAP.iteritems()
126         })
127     kcidb_data['revisions'] = [kcidb_revision]

```

```

129         files = {
130             'kernel_image': build(models.KERNEL_IMAGE_KEY),
131             'modules': build(models.MODULES_KEY),
132             'System.map': build(models.SYSTEM_MAP_KEY),
133         }
134
135         output_files = []
136         for name, file in files.items():
137             if file:
138                 url = "%s.join{"
139                     STORAGE_URL,
140                     build(models.FILE_SERVER_RESOURCE_KEY),
141                     file}
142                 output_files.append(("name": name, "url": url))
143
144         kicmb_build = {
145             'revision.origin': origin,
146             'revision.origin_id': revision_id,
147             'origin': origin,
148             'origin_id': build_id,
149             'valid': build(models.STATUS_KEY) == "PASSED",
150             'start_time': build(models.CREATED_KEY).isoformat(),
151             'description': build(models.GIT_DESCRIBE_V_KEY),
152             'architecture': build(models.ARCHITECTURE_KEY),
153             'compiler': build(models.COMPILER_VERSION_FULL_KEY),
154             'log_uri': urlparse.urljoin(
155                 STORAGE_URL,
156                 "%s.join{"
157                     build(models.FILE_SERVER_RESOURCE_KEY),
158                     utils.BUILD_LOG_FILE,
159                 })
160         }
161
162         'config.name': build(models.DEFCONFIG_FULL_KEY),
163         'config.uri': urlparse.urljoin(
164             STORAGE_URL,
165             "%s.join{"
166                 build(models.FILE_SERVER_RESOURCE_KEY),
167                 build(models.KERNEL_CONFIG_KEY),
168             })
169
170         'output_files': output_files,
171         'misc': {
172             'kernel_image_size': build(models.KERNEL_IMAGE_SIZE_KEY),
173             'wmlinux_bin_size': build(models.WMLINUX_BSS_SIZE_KEY),
174             'wmlinux_data_size': build(models.WMLINUX_DATA_SIZE_KEY),
175             'build_platform': build(models.BUILD_PLATFORM_KEY),
176         },
177     }
178
179     kicmb_data['builds'] = [kicmb_build]
180
181     submit(kicmb_data, kicmb_options)
182
183
184 def push_tests(group_id, kicmb_options, db_options={}, db=None):
185     if db is None:
186         db = utils.db.get_db_connection(db_options)
187
188     collection = db.models.TEST_GROUP_COLLECTION
189     group = utils.db.get_test_group_collection(group_id)
190     origin = kicmb_options.get('origin', 'kernelci')
191     ns = kicmb_options.get('namespace', 'kernelci.org')
192     test_cases = _get_test_cases(group_id, ns)
193     build = _get_build_desc(group_id,
194                             not build,
195                             utils.LOG_WARN["kicmb: Missing build, unable to push tests."],

```

```

189         return
190         build_id = make_id(build\models.ID_KEY, ns)
191         env.description = "{} in {}".format(
192             group\models.DEVICE_TYPE_KEY,
193             group\models.LAB_NAME_KEY)
194     }
195     test_description = "{} on {} in {}".format(
196         group\models.NAME_KEY,
197         group\models.DEVICE_TYPE_KEY,
198         group\models.LAB_NAME_KEY)
199     }
200     misc = {
201         'plan': group\models.NAME_KEY,
202         'plan_variant': group\models.PLAN_VARIANT_KEY,
203     }
204     env_misc = {
205         'device': group\models.DEVICE_TYPE_KEY,
206         'lab': group\models.LAB_NAME_KEY,
207         'mach': group\models.MACH_KEY,
208         'root_url': group\models.INTRN_KEY,
209         'instance': group\models.BOARD_INSTANCE_KEY,
210     }
211     files = {
212         'test': group\models.BOOT_LOG_KEY,
213         'html': group\models.BOOT_LOG_HTML_KEY,
214         'lava_json': 'lava-{}.json'.format(group\models.DEVICE_TYPE_KEY)
215     }
216     output_files = []
217     for name, file in files.items():
218         url = urlparse.urljoin(
219             SWHUB_URL,
220             '{}.join[
221                 build\models.FILE_SERVER_RESOURCE_KEY,
222                 group\models.LAB_NAME_KEY,
223                 file,
224             ]
225         )
226         output_files.append(("name", "url": url))
227
228     kcidb_data = {
229         'version': '1',
230         'tests': [
231             {
232                 'build_origin': origin,
233                 'build_origin_id': build_id,
234                 'origin': origin,
235                 'origin_id': test['id'],
236                 'environment': {
237                     'description': env.description,
238                     'misc': env_misc,
239                 },
240                 'path': test['path'],
241                 'description': test_description,
242                 'status': test['status'],
243                 'unvied': False,
244                 'start_time': test['start_time'],
245                 'output_files': output_files,
246                 'misc': misc,
247             }
248         ]
249     }
250     for test in test_cases
251     }
252     _submit(kcidb_data, kcidb_options)
253 
```



kernelci-backend

```

1  # Copyright (C) Collabora 2019, 2020
2  # Author: Gulluella Tucker <gulluella.tucker@collabora.com>
3
4  # This program is free software; you can redistribute it and/or modify it under
5  # the terms of the GNU Lesser General Public License as published by the Free
6  # Software Foundation; either version 2.1 of the License, or (at your option)
7  # a later version.
8
9  # This program is distributed in the hope that it will be useful, but WITHOUT
10 # ANY WARRANTY; without even the implied warranty of MERCHANTABILITY or FITNESS
11 # FOR A PARTICULAR PURPOSE. See the GNU Lesser General Public License for more
12 # details.
13
14 # Along with this library, if you write to the Free Software Foundation, Inc.,
15 # 51 Franklin Street, Fifth Floor, Boston, MA 02110-1301 USA

```

```
20 import json
21 import os
22 import subprocess
23 import urlparse
24
25 import models
26 import utils
27 import utils.db
28 from utils.report.common import
```

```
57 def _get_test_cases(group, db, hierarchy, ns):
58     case_collection = db[models.TEST_CASE_COLLECTION]
59     group_collection = db[models.TEST_GROUP_COLLECTION]
60
61     hierarchy = hierarchy + [group[models.NAME_KEY]]
62     tests = [
```

```

599 p.communicate(input=json_data)
600
601 if p.returncode:
602     utils.LOG.warn("Failed to push data kcidm")
603
604
605 def push_build_data_to_kcidm(build_options, db_options=1, db_name=0):
606     if db is None:
607         db = utils.db.get_db_connection(db_options, db_name)
608         ns = kcidm_options.get("origin", "kernelci.org")
609         ns = kcidm_options.get("namespace", "kernelci.org")
610         build = utils.db.find_one(db=utils.BUILD_COLLECTION, build_id=
611             build_id = _make_id(build_options.ID_KEY), ns)
612         build_id = build['_id']
613         build_id = build['_id']
614
615         kcidm_data = {
616             'version': '1',
617         }
618
619         if 'first':
620             kcidm_revision = {
621                 'origin': 'origin',
622                 'origin_id': revision_id,
623                 'valid': True,
624                 'discovery_time': build[options.CREATED_KEY].isoformat(),
625             }
626
627             kcidm_revision.update({
628                 kcidm_data[kcidm_build_key]
629                 for kcidm_build_key in BUILD_REV_KEY_MAP.items()
630             })
631
632             kcidm_data['revisions'] = [kcidm_revision]

```

```

163 STORAGE_URL,
164     ']]',join('
165     build(models.FILE_SERVER_RESOURCE_KEY),
166     build(models.KERNEL_CONF_KEY),
167
168     'output_files': output_files,
169     'misc': {
170         'kernel_image_size': build(models.KERNEL_IMAGE_SIZE_KEY),
171         'wmlnss_size': build(models.WMLN_SS_SIZE_KEY),
172         'wmlnss_data_size': build(models.WMLN_SS_DATA_SIZE_KEY),
173         'build_platform': build(models.BUILD_PLATFORM_KEY),
174     },
175     },
176     },
177     kicmd_data['builds'] = [kicmd_build]
178
179     _submit(kicmd_data, kicmd_options)
180
181
182 def push_tasks(group_id, kicmd_options, db_options):, db=None):
183     if db is None:
184         db = utils.db.get_db_connection(db_options)
185
186     collection = db.models.TEST_GROUP_COLLECTION
187     group = utils.db.find_one(collection, group_id)
188     origin = kicmd_options.get('origin', 'kernelci')
189     ns = kicmd_options.get('namespace', 'kernelci')
190     test_cases = _get_test_cases(group, db, [], ns)
191     build = _get_build_doc(group)
192     if not build:
193         utils.LOG.warning('Missing build, unable to push tests')

```

```

219         group(models.LAB_NAME_KEY,
220               file,
221               )
222     }
223     output_files.append(("name": name, "url": url))
224
225     kcidm_data = {
226         'version': '1',
227         'tests': [
228             {
229                 'build_origin': origin,
230                 'build_origin_id': build_id,
231                 'origin': origin,
232                 'origin_id': test['id'],
233                 'environment': {
234                     'description': env_description,
235                     'misc': env_misc,
236                 },
237                 'path': test['path'],
238                 'description': test_description,
239                 'status': test['status'],
240                 'success': False,
241                 'start_time': test['start_time'],
242                 'output_files': output_files,
243                 'misc': misc,
244             }
245         ]
246     }
247     for test in test_cases
248     },
249 ],
250
251 submit(kcidm_data, kcidm_options)
252

```

257 lines (229 sloc)	8.57 KB
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Join Us!

BoF: KernelCI Unified Reporting in Action

 27 Aug 2020, 07:00 PDT

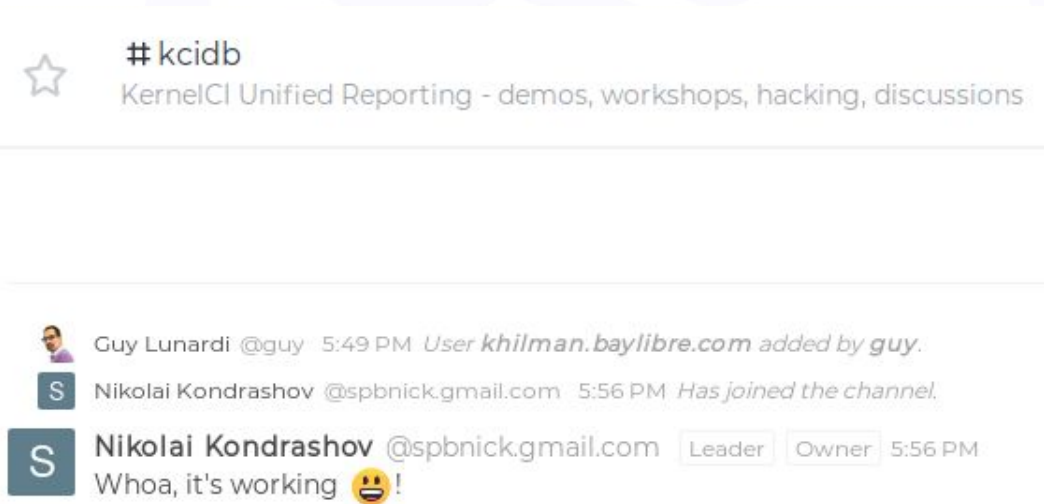
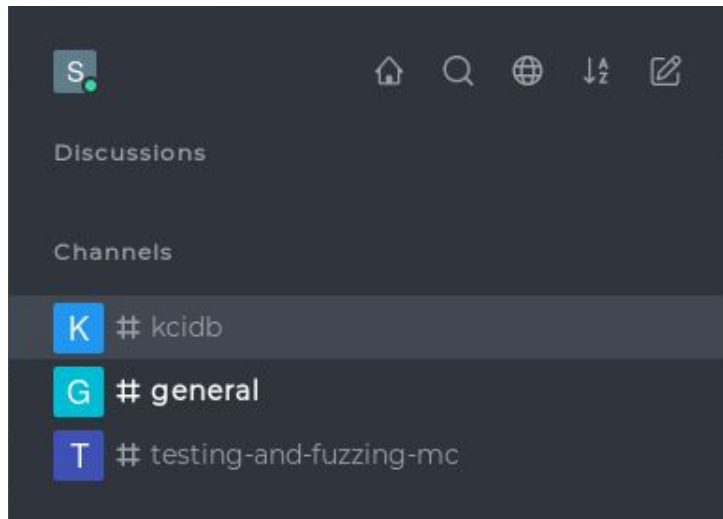
 45m

 BOF1/Virtual-Room (LPC 2020)

 Birds of a Feather (...)

- **Submission Walkthrough**
- **Schema Details**
- **Discussion**

KernelCI During Conference



- Hands-on demos
- Hacking, Discussion
- Bootstrapping Reporting

<https://github.com/kernelci/kcidb>

kernelci@groups.io

#kernelci at freenode.net

KernelCI Join the project

Thank you

