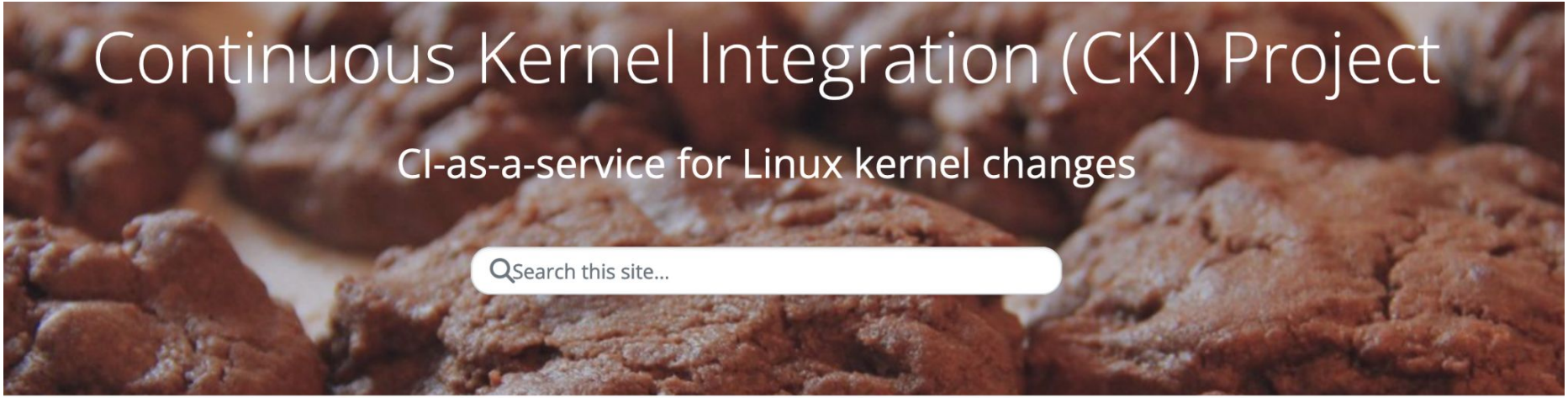
Approach to Enhancing Kernel Quality

The CKI Team



Kernel developers

Start here if you are a kernel developer ...

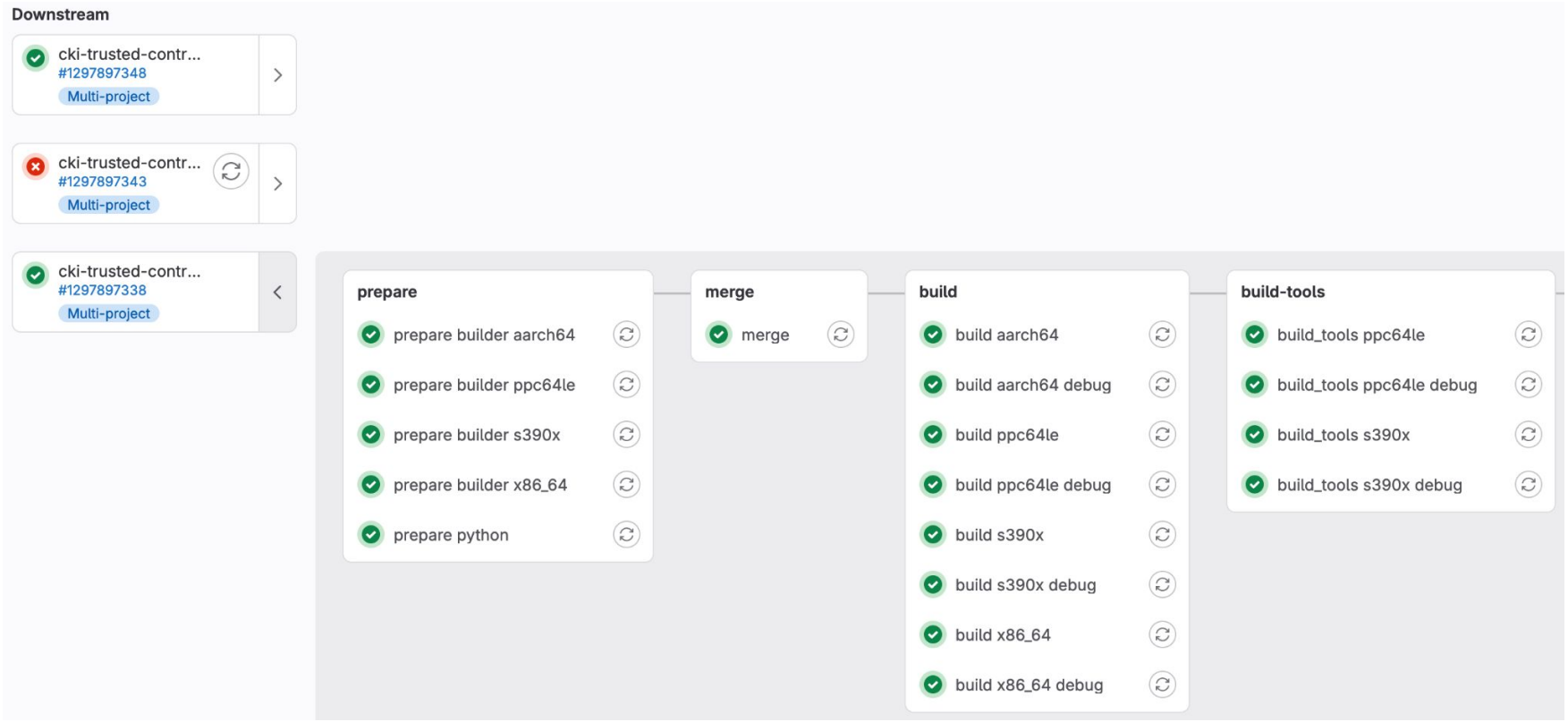
Test maintainers

Start here if you are a test maintainer ...

CKI contributors

Start here if you want to contribute to CKI itself ...

We Run Pipelines



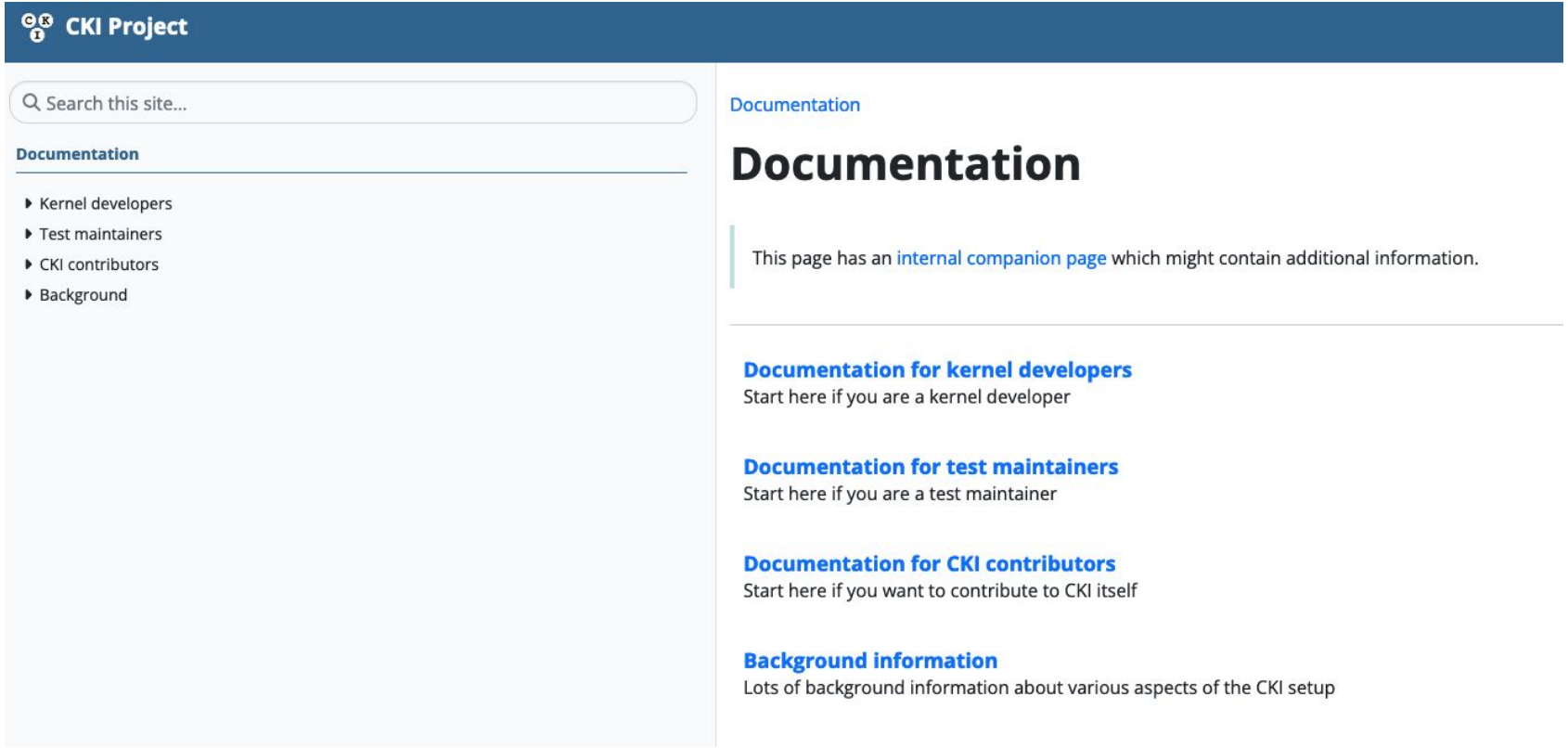
Things that help

Internal Design
&
Collaboration

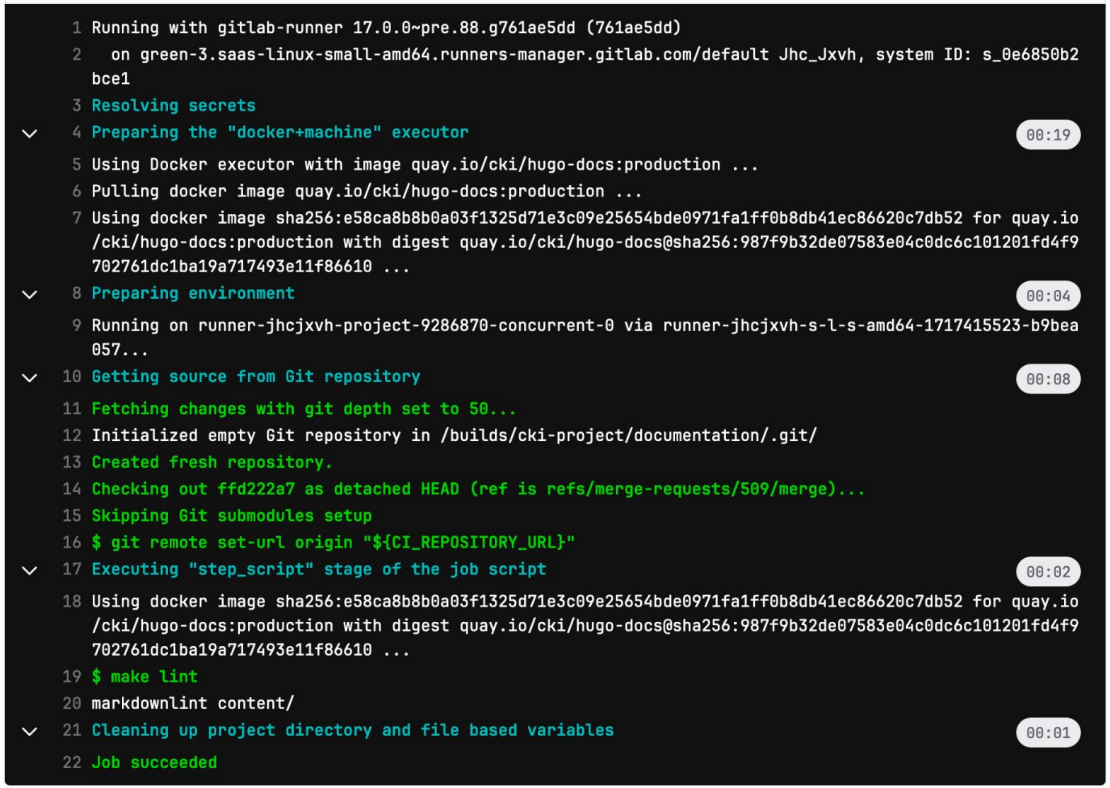
Things that help

- Good Documentation
- Linters
- Tests
- Code review
- Metrics

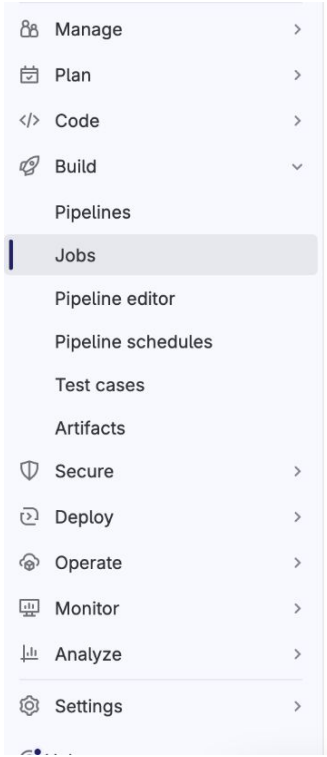
Things that help. Good Documentation.



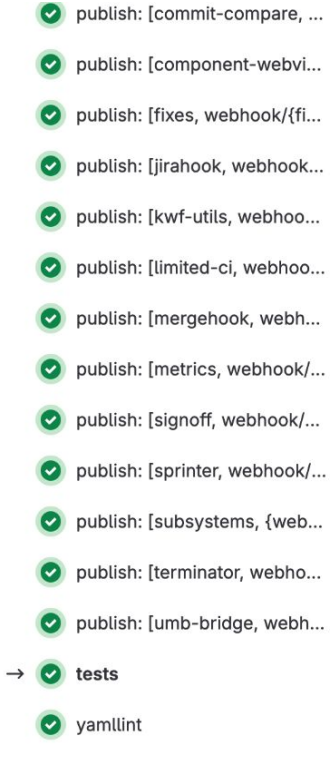
Things that help. Linters



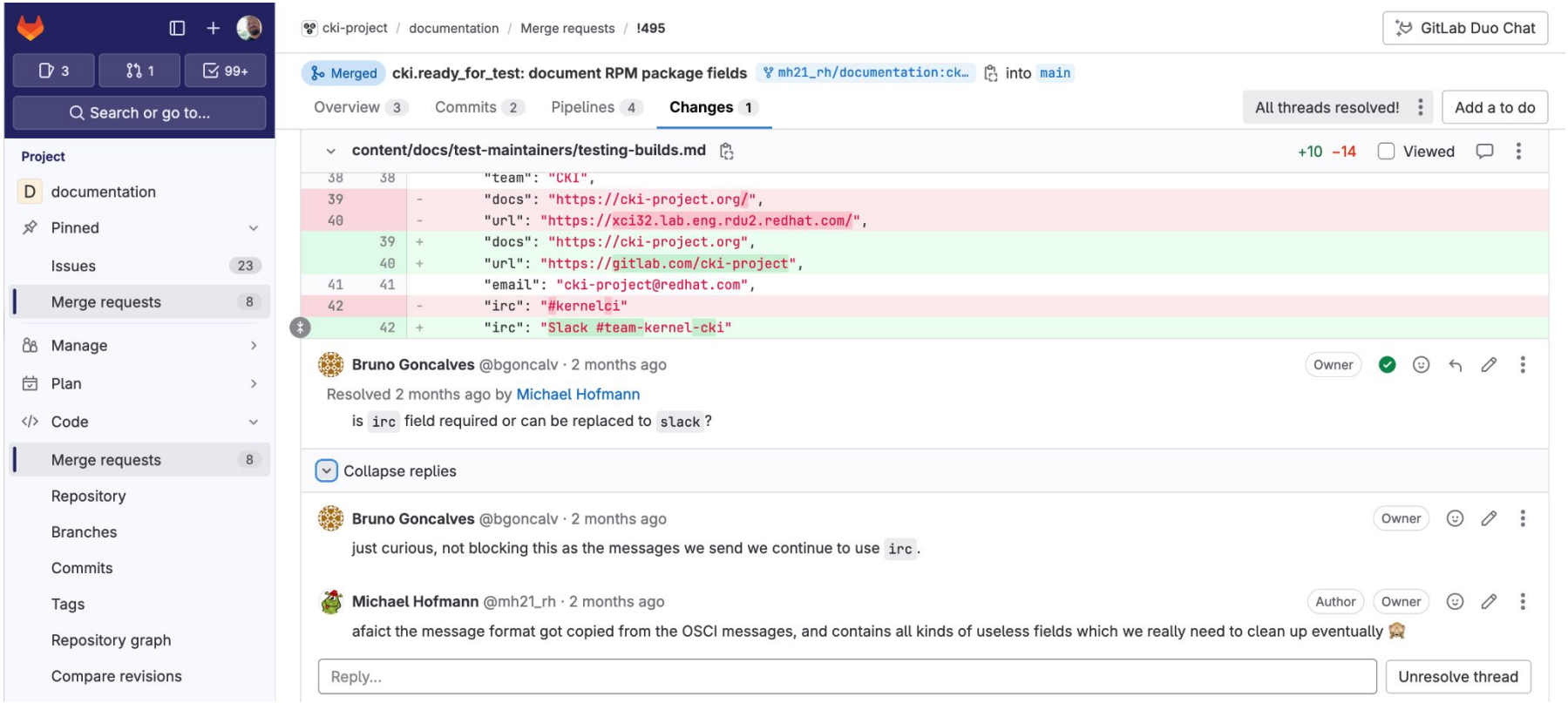
Things that help. Tests



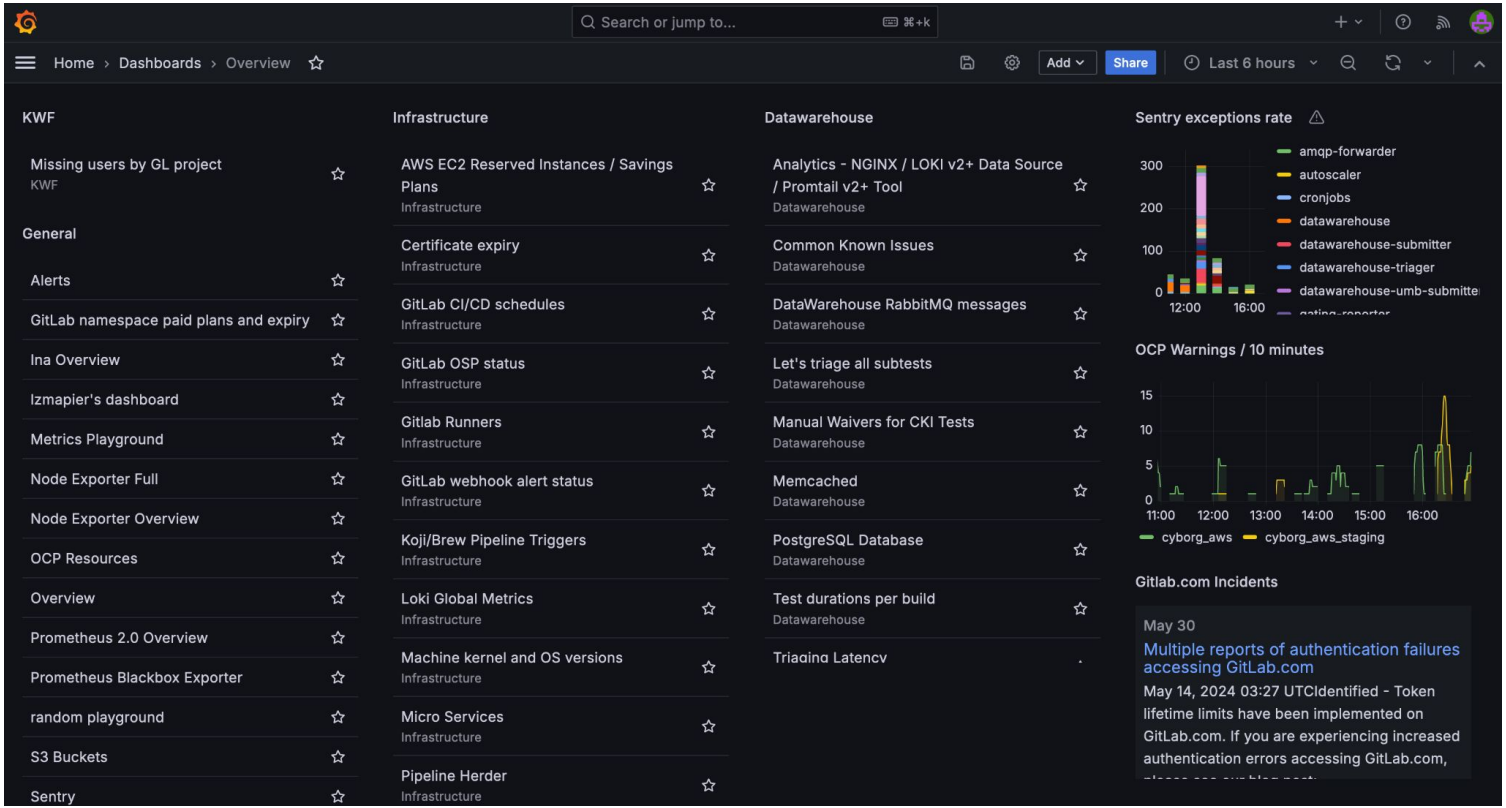

```
1368 tests/test_terminator.py::TestTerminator::test_run_main_success_cancel_exception PASSED [ 97%]
1369 tests/test_umb_bridge.py::TestUmbBridge::test_MappingType PASSED          [ 97%]
1370 tests/test_umb_bridge.py::TestUmbBridge::test_SendQueue PASSED            [ 97%]
1371 tests/test_umb_bridge.py::TestUmbBridge::test_get_project_mr_infos PASSED [ 97%]
1372 tests/test_umb_bridge.py::TestUmbBridge::test_get_project_mrs PASSED      [ 98%]
1373 tests/test_umb_bridge.py::TestUmbBridge::test_get_session_projects PASSED [ 98%]
1374 tests/test_umb_bridge.py::TestUmbBridge::test_main PASSED                 [ 98%]
1375 tests/test_umb_bridge.py::TestUmbBridge::test_process_amqp_event PASSED   [ 98%]
1376 tests/test_umb_bridge.py::TestUmbBridge::test_process_gitlab_mr PASSED    [ 98%]
1377 tests/test_umb_bridge.py::TestUmbBridge::test_process_jira_event PASSED   [ 98%]
1378 tests/test_umb_bridge.py::TestMRInfoCache::test_mrinfocache_new PASSED    [ 98%]
1379 tests/test_umb_bridge.py::TestMRInfoCache::test_mrinfocache_new_raises PASSED [ 99%]
1380 tests/test_users.py::TestUser::test_from_owners PASSED                    [ 99%]
1381 tests/test_users.py::TestUser::test_from_user_dict PASSED                 [ 99%]
1382 tests/test_users.py::TestUser::test_user_init PASSED                      [ 99%]
1383 tests/test_users.py::TestUser::test_user_update PASSED                    [ 99%]
1384 tests/test_users.py::TestUserCache::test_usercache_init PASSED           [ 99%]
1385 tests/test_users.py::TestUserCache::test_usercache_items PASSED          [100%]
1386 -- generated xml file: /builds/cki-project/kernel-workflow/coverage/junit.xml --
1387 ====================== 685 passed in 309.79s (0:05:09) ======================
1388 Generating coverage reports
1389 Name                                      Stmts   Miss Branch BrPart  Cover   Missing
1390 ------------------------------------------------------------------------------------
1391 webhook/__init__.py                           0      0      0      0   100%
1392 webhook/ack_nack.py                         514     45    287     42    88%   67->exit, 89-94, 123, 1
     26-128, 132, 177->exit, 189->191, 191->187, 219->216, 248->266, 268, 313, 377, 383->385, 403, 416->exi
     t, 486, 490->495, 505->507, 523-524, 535->537, 538, 550, 563->559, 574, 579->578, 591->590, 596, 606,
     639, 642, 647->646, 671-673, 682-687, 692, 696->698, 717->719, 733, 747-748, 769, 797, 807->exit, 813-
```



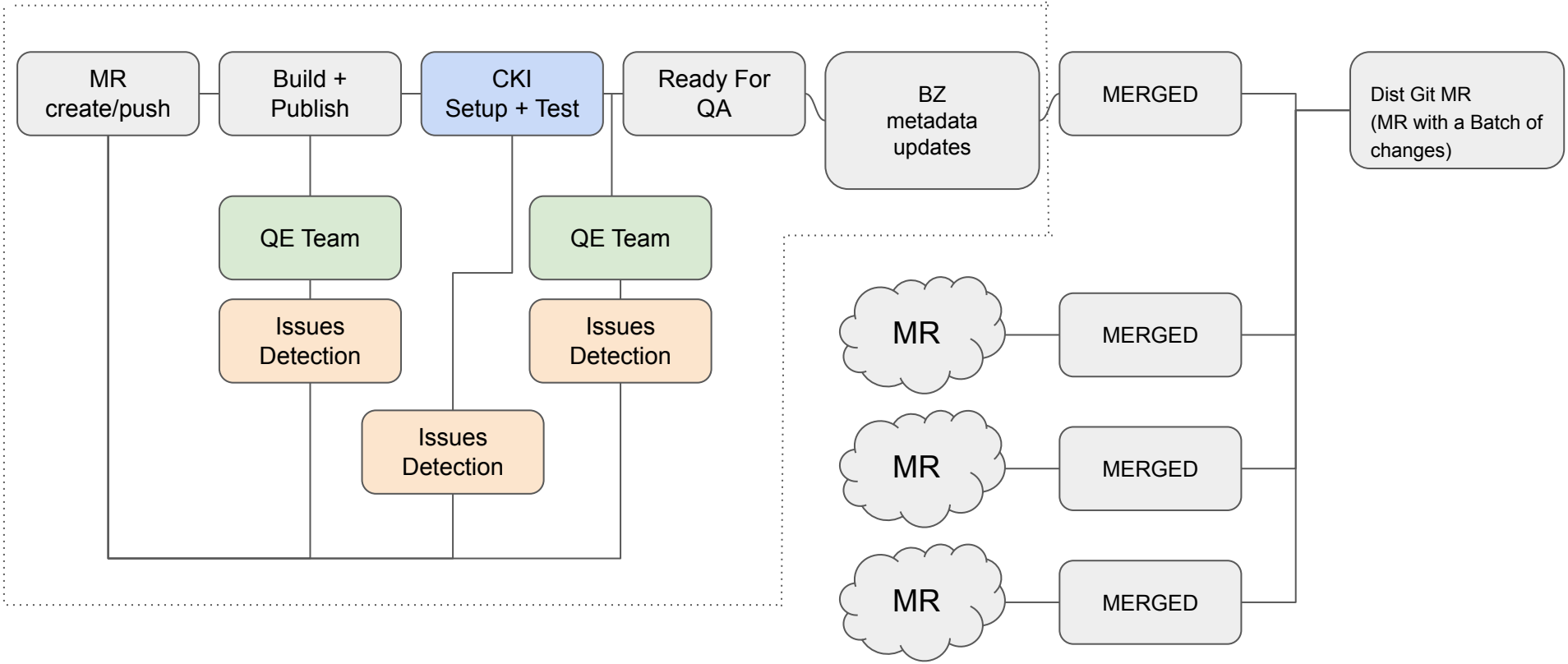
Things that help. Code review



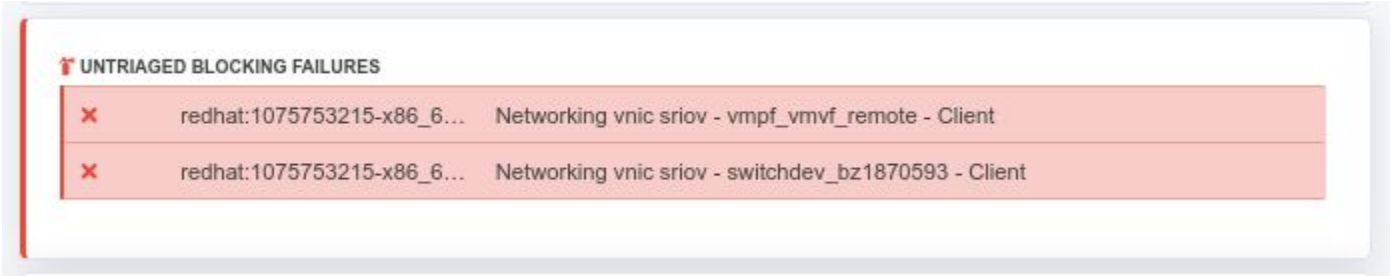
Things that help. Metrics



The flow

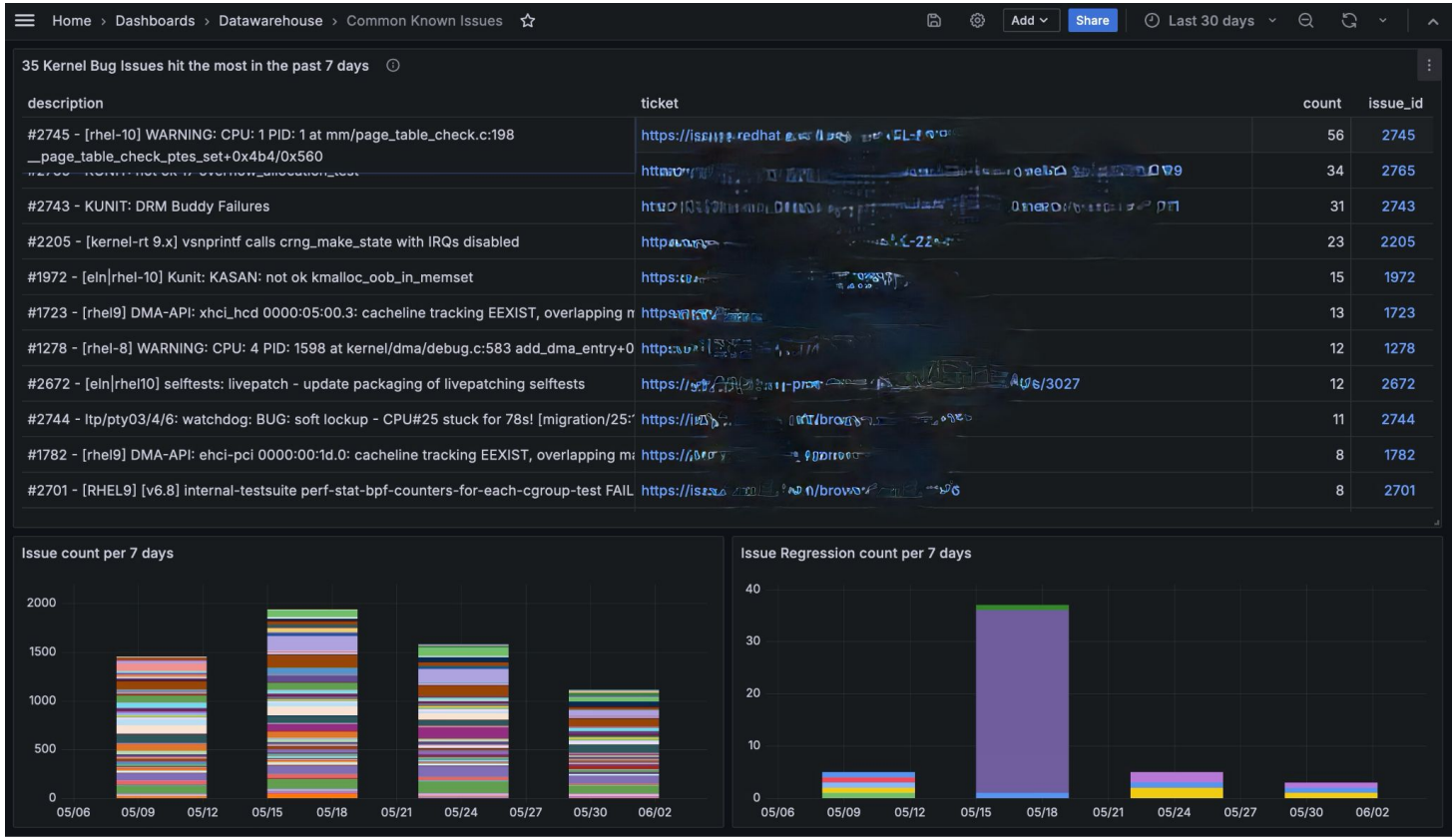

MR
create/push
Build +
Publish
CKI
Setup + Test
Ready For
QA
BZ
metadata
updates
MERGED
Dist Git MR
(MR with a Batch of
changes)
QE Team
QE Team
Issues
Detection
Issues
Detection
Issues
Detection
MR
MERGED
MR
MERGED
MR
MERGED

Triaging issues



- Determine the correct issue tracker depending on issue type and kernel tree
- Search the issue tracker, subsystem mailing list to see whether the issue was already reported
- If this is a new issue, create a new ticket
- Create a regex for automated triaging

We have monitoring



Weekly Summary: Top 10 Unstable Tests Encountered by the CKI Team

Hello team,

Below is our weekly summary of the top 10 unstable tests the CKI team has encountered most frequently in the past week.
@Hangbin Liu, @Nico Pache, @Huanian Li, @Fendy Tjahjadi, @Eirik Fuller @Ping Fang Please work with your team to ensure they are being addressed and moving forward.
If you think an issue is incorrect, please let me know. Thanks!

Title	Created_days_ago	Updated_days_ago	Status	Assignee	Hit_count
KUNIT: slub_test: test_next_pointer: EXPECTATION FAILED at lib/slub_kunit.c:66	440	13	opened	Nico Pache	32
LTP lite: perf_event_open03.c:58: TFAIL: Likely kernel memory leak detected	825	48	opened	Fendy Tjahjadi; Li Wang	13
KUNIT: clk_gate_test_hiword_enable: EXPECTATION FAILED at drivers/clk/clk-gate_t ...	563	13	opened	Nico Pache	11
[upstream] [s390x] KUNIT: clk-gate-invert-test - clk_gate_test_invert_enable: EX ...	97	13	opened	Nico Pache	11
[upstream] [s390x] KUNIT: clk-gate-is_enabled-test - clk_gate_test_is_disabled: ...	97	6	opened	Nico Pache	11
[upstream] [s390x] KUNIT: clk-gate-test - clk_gate_test_enable: EXPECTATION FAIL ...	97	6	opened	Nico Pache	11
[upstream] [s390x] KUNIT: drm_format_helper_test - drm_test_fb_xrgb8888_to_xrgb2 ...	97	13	opened	Nico Pache	11
kselftests: bpf:test_tunnel.sh fails	223	13	opened	Hangbin Liu	9
Usex - version 1.9-29 - /bin/strace HANG	376	54	opened	Fendy Tjahjadi; Eirik Fuller	1
LTP lite: preadv203: TBROK: Test killed! (timeout?)	375	13	opened	Li Wang; Ping Fang	1

Reports we send

- Top 10 Issues Encountered by the CKI Team Last Week
- Top 10 Unstable Tests Encountered by the CKI Team
- Top Failed Fedora Tests Encountered by the CKI Team

Plans

Have everything in one place

SW Developers and QE should know about the issues

Increase collaboration between CKI, Developers and QE

Wrapping up

We love cookies & We care about the issues

Thank you!