

2nd Meeting of the seL4 Technical Steering Committee

Fri, 29 Jan 2021, 15:30-17:00 AEST, by Zoom

Attendance

TSC members present:

- June Andronick (JA)
- Matthew Brecknell (MB)
- Kevin Elphinstone (KE)
- Gernot Heiser (GH)
- Gerwin Klein (GK)
- Rafal Kolanski (RK)
- Ihor Kuz (IK)
- Corey Lewis (CL)
- Anna Lyons (AL)
- Kent Mcleod (KM)

Reviewers present:

- Axel Heider (AH)
- Yanyan Shen (YS)
- Jesse Millwood (JM)
- Ben Leslie (BL)

The meeting was open to the public, attendance of other roles not recorded here.

Minutes

1. Updates from the TSC chair and committees:

- **seL4 public Jira:** (GK) the D61 database of seL4, verification, and CAMkES issues has been exported to <https://sel4.atlassian.net> and is publicly available (with registration). This includes older issues reaching back to the initial development of seL4 and design discussions.

The idea is that this public Jira tracker is the central issue tracker for the projects managed by the seL4 foundation.

- **Jira + GitHub sync:** (GK) We don't want to switch off GitHub issues for individual repositories, because this is the place where people expect to be able to interact. To deal with this duplication, GK investigated a free open-source license from Exalate, which provides automatic issue sync between GitHub and Jira. This is currently set up for seL4 and l4v only and seems to work well. Plan is to extend this to the rest of the GitHub repositories.
- **Reviewers:** (GK) All reviewers who were invited after the last TSC meeting have joined. Feedback at the meeting was that the setup is working well for them so far.

- **Board update** (GH): We have new members Penten and Raytheon; also have set up interim processes for foundation endorsement of training, services, and products. This will need TSC involvement in the future to cover the technical aspects of the process.
- **GitHub tests:** (GK) Test infrastructure has been expanded substantially on GitHub, but there is more to do. Currently the `14v` repository is well covered for small proofs. Long proofs need more powerful infrastructure. The foundation has access to AWS credits, but the infrastructure needs to be set up. The `seL4` repo is covered with basic tests and compile test, but not yet with full `seL4test` runs or hardware tests. The latter are harder to achieve. Most other foundation repositories are set up with basic style, DCO etc test, but work is still ongoing to cover all of them.

Follow-on discussion for tests:

- KM: failed bamboo tests currently don't present information nicely on github, some tests (hardware) not accessible from github, so some approvers don't have access to the full infrastructure.
- KM: could try a weaker consistency model: approve and merge based on accessible test setup, run hardware tests asynchronously after merge.
- IK: how do we ensure that failures will be fixed when they happen?
- AH: could use a dev queue, i.e. make PRs not to `master` branch but to a `dev` queue which is tested and merged automatically into `master` when green.
- JM: could lead to many `dev` branches
- GK: could also remove the bitbucket loop and merge on GitHub directly. Bamboo can be redirected to GitHub. Would not solve all problems, but reduce the overhead.
- discussion about PRs to multiple repos and ensuring consistency between them
- BL: what about one large repo instead of multiple small ones (monorepo)? Discussion summary:
 - some of the other repos are very large (verification) and not needed by most users;
 - concern of getting too much unrelated commit traffic;
 - harder to merge and run clean tests (too much traffic – verification tests take 4-6h).
 - general feeling: not in favour of monorepo at this stage.

ACTION (AL, KM, GK, AH, YS): continue discussion on how to make tests more useful and accessible on discourse. GK to set up.

ACTION (GK): gather volunteers for AWS verification setup by email

2. Do we have too many different forums?

BL: mailing list, discourse, jira, github, mattermost. Not clear where to ask, losing critical mass for discussion and community.

Discussion: unclear where to cut, each serves different function. Proposal to use Discourse to back the mailing list. Keep Jira/GitHub issues (sync discussed above). Mattermost for ephemeral quick questions, not decisions on the ecosystem. Need to check if persistent archive/backup is available for Discourse if the platform disappears at some point.

ACTION (IK, KM, AL):

- investigate if devel list can be backed by Discourse directly
- introduce a "new to seL4 section" on Discourse

3. **Bug/issue classification** (Jira is now public, we shouldn't call everything a bug)

Agreed this is misleading to public. Should have clear guidelines at least when something is a bug and when it is an improvement.

ACTION (BL): write guidelines ACTION (GK): implement these on Jira, look at all currently open issues and maintain for 6 months (then rotate to someone else)

4. **More in-tree docs**

Raised a few times; how to make it happen? Doc site should stay the place where everything is available. Idea is to have more of the sources come from the repo they are from. Overarching documentation source still to stay at docs site. E.g. verification installation instructions should be in verification repo, and included in doc site (currently already the case, but not for all).

RESOLVED We are agreed that we want more in-tree docs and are happy to approve PRs that go in that direction. New docs still also need a doc site PR to include them there.

5. **Test infrastructure**

Discussed above

6. **Extend RFC process**

GH: current RFC process mainly geared towards small improvements; does not match a few current RFCs which are larger application-level proposals; suggesting a 2-step process.

RFC process designed for kernel API. Proposal is to extend it to other components that are in Foundation scope. Since these might need bigger implementation effort, suggesting a pre-approval step as gate before implementation and final approval.

Counter points: big proposals require lot of time to analyse from TSC members. Is RFC the right process for this? Is it needed?

RESOLVED: RFC process is in scope for projects that are to be hosted by the foundation. RFC-5 and RFC-6 would be in scope.

RESOLVED: introduction of a stage-1 approval step for larger RFCs. The intention is that the TSC can endorse a basic design before implementation. Further changes may be still be necessary after state 1 approval.

ACTION (GK): update RFC process description on doc site

7. **RFC-5 and RFC-6** Motion by GH to give stage 1 approval now

RESOLVED: more discussion needed but out of time for this meeting

Meeting is running out of allotted time, remaining agenda postponed to next meeting to be held in 2 weeks. Sub-discussions to continue on Discourse.

ACTION (GK): set up discourse discussions.

Meeting closed 17:00 AEST

Summary of Actions

- AL, KM, GK, AH, YS (item 1): continue discussion on how to make tests more useful and accessible on discourse. GK to set up.
- GK (item 1): gather volunteers for AWS verification setup by email

- IK, KM, AL (item 2):
 - investigate if devel list can be backed by Discourse directly
 - introduce a “new to seL4 section” on Discourse
- BL (item 3): write guidelines
- GK (item 3): implement these on Jira, look at all currently open issues and maintain for 6 months (then rotate to someone else)
- GK (item 6): update RFC process description
- GK: set up discourse discussions before next meeting

Acronyms

TSC Technical Steering Committee of the seL4 Foundation

Minutes prepared by Gerwin Klein, finalised 2021-02-03