

- [Regan Robertson](#) Mod • [14 days ago](#)

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[Nathaniel Husted](#) • [14 days ago](#)

I really love this talk. As a long-time person who's developed in the *nix environment for years, I was never aware POSIX was so problematic.

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[Carl Nerup](#) • [14 days ago](#)

Curtis - did you have time yet to get a proper coffee?

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[Renato Levy](#) Raymond Richards • 14 days ago

you should try Brazilian coffee. It would keep you awake for a weak!

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[Curtis Millar](#) Raymond Richards • 14 days ago

I'm sure many here would agree with what you've said there although perhaps not the underlying sentiment.

For my taste, there are a plethora of good options not far from anywhere I'm likely to find myself.

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[Jason H Li](#) • 14 days ago

Tagging along what Nathaniel said ... this talk is great!

On the other hand, and Ihor mentioned similarly, POSIX-like is great for porting. So it's a trade-off.

I can totally argue not doing POSIX or doing it, either way. But this is an important topic for the community.

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[Curtis Millar](#) [Jason H Li](#) • 14 days ago

These are a large number of the reasons why the ways we encourage POSIX support to date have been virtual machines and the NetBSD Rump unikernel running at user-level.

The only way to provide a complete implementation of POSIX without sacrificing the security benefits of seL4 essentially requires constructing some isolated POSIX subsystem for the application that uses this. If you have a more complete OS interface for the rest of your system, you could potentially construct this isolation environment in a more lightweight manner (such as the approach used for VMS-like systems).

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[Jason H Li](#) [Curtis Millar](#) • 14 days ago

Yes this makes sense. And just saw your 'container' slide. Thought experiments like this are always great food for thought!

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[Ihor Kuz](#) • 14 days ago

Is this video available externally? I think it's a great overview of the issues with POSIX.

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[Jason H Li](#) [Ihor Kuz](#) • 14 days ago

There are folks suggesting we promote some Summit videos and the organizers are pondering upon this idea. Maybe this one should go to YouTube!

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[Curtis Millar](#) [Ihor Kuz](#) • 14 days ago

Should be available via [YouTube](#)

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Noah Evans Curtis Millar • 14 days ago • edited

Plan 9 suffered very much from "Galapagos Syndrome" (<https://en.wikipedia.org/wi...>) so I wouldn't expect much other than a set of unix-like userspace tools (cat, grep, sed etc.) That said, ubiquitous 9p in Linux systems these days might make a Plan 9 personality easily interoperable though.

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Noah Evans Noah Evans • 14 days ago

I'd be willing to help with this if you're interested BTW

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Curtis Millar Noah Evans • 14 days ago

I sadly don't have the bandwidth to be working on this directly at the moment, although I would like to improve this situation in the future.

There are ideas for extending the seL4 Core Platform to allow dynamic systems to be constructed during the lifetime of a system. Once the initial platform is realized, it would be worth looking into how dynamic systems would work there.

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Noah Evans Curtis Millar · 14 days ago

Curtis Millar Do you guys have your vision/requirements for this written up anywhere?

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Gernot · 14 days ago

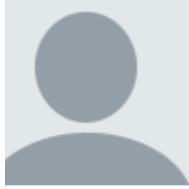
I'm setting up an seL4 Foundation YouTube channel, all the TS talks will go up there. Others can too

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Jason H Li Gernot • 14 days ago

This sounds great! Some Summit videos need additional release ... esp those by government folks. But lots of our videos should be on the Tube.

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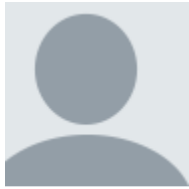
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Renato Levy Gernot • 14 days ago

we can only upload those that have explicit permission to appear in media from their authors and organizations

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Ihor Kuz • 14 days ago

Are there examples of interfaces that follow your suggestions/guidelines?

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Nathaniel Husted • 14 days ago

Sounds like a best practice is if we have a POSIX application we want to run would be to just isolate it in a VM until it could be translated or becomes outdated?

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Jacob Saina Nathaniel Husted • 14 days ago

A POSIX service would be much more lightweight, no?

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Nathaniel Husted Jacob Saina • 14 days ago

I'd agree, though it sounds like someone would have to write that. *grin*

Near term I think the only thing available is the VM?

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Gernot Nathaniel Husted • 14 days ago

Yes, use VMs to run your Posix, which is legacy by definition

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Jason H Li Nathaniel Husted • 14 days ago

That's my current understanding.

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Curtis Millar Nathaniel Husted • 14 days ago



Regan Robertson Mod • 14 days ago

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Nick Spinale • 14 days ago • edited

Thanks for this presentation!

I agree that presenting a multitasking interface to the programmer ought to be the responsibility of the programming language runtime or libraries. My team at Arm Research has set up what's necessary to write OCaml programs like this on seL4 (by porting MirageOS to our seL4-based platform), and will soon do the same for Rust. Recent developments in the async feature of Rust in the ``no_std`` environment make Rust an excellent fit for this.

As I mentioned in the comment section of my talk, our source will become available within a few weeks.

Is anyone addressing specific programming language runtimes? I ask in the hopes of avoiding duplicated work.

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