

Linux Plumbers Conference 2025



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Containers and checkpoint/restore MC

The Containers and Checkpoint/Restore micro-conference focuses on both userspace and kernel related work.

The micro-conference targets the wider container ecosystem ideally with participants from all major container runtimes as well as init system developers.

The microconference will be discussing recent advancements in container technologies with some of the usual candidates being:

- VFS API improvements (new system calls, idmap, ...)
- CGroupV2 feature parity with CGroupV1 and migration path
- Dealing with the eBPF-ification of the world
- Mediating and intercepting complex system calls
- Making user namespaces more accessible
- Verifying the integrity of containers
- Improving the set of resource limits available

On the checkpoint/restore front, some of the potential topics include:

- Making CRIU work with modern Linux distributions
- Handling GPUs
- Restoring FUSE daemons
- Dealing with restartable sequences
- Use of eBPF
- Support of new kernel features
- Supporting shadow stack (x86, arm64)
- Support for madvise(MADV_GUARD_INSTALL)
- Support for mseal()
- Support for pidfd C/R, including process exit information

And quite likely a variety of other container and checkpoint/restore topics as things evolve between now and the event.

Past editions of this micro-conference have been the source of many developments in the Linux kernel, including:

- PIDfds
- VFS idmap (and adding it to a slew of filesystems)
- FUSE in user namespaces
- Unprivileged overlayfs
- Time namespace
- A variety of CRIU features and checkpoint/restore kernel interfaces with the latest among them being

- Unprivileged checkpoint/restore
- Support of rseq(2) checkpointing
- IMA/TPM attestation work

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