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Userspace memory persistence over kexec

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Applications with large in-memory caches like databases or storage nodes suffer heavily from downtime when upgrading the kernel. They need to go out of commission not only for the reboot time, but also for the time it takes to warm up the caches again. This talk proposes a mechanism that allows handing over userspace memory to the next kernel after a kexec. This allows such applications to persist their caches to achieve fast kernel upgrades with minimal downtime. It can also be used with CRIU to avoid the need for modifying the applications to use this mechanism. Other use cases include doing a “live update” for container hosts, allowing kernel upgrades with low downtime for the container workloads.

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