



Contribution ID: 49

Type: **not specified**

Live in a world with multiple memory types

Tuesday, September 13, 2022 12:45 PM (45 minutes)

Initially, all memory are DRAM, then we have graphics memory, PMEM, CXL, ... Linux kernel has recently gained the basic support to manage systems with multiple memory types and memory tiers, and the ability to optimize performance by demoting/promoting memory between the tiers. And we are working on enhancing Linux's capabilities further.

In this talk, we will discuss the current development and future direction to manage and optimize these systems, including,

- Explicit memory tiers and user space interface
- Support complex memory topology with help of firmware and device drivers
- Use NUMA memory policy and cpusets to help manage memory types
- Possible improvement of demoting with MGLRU
- Further optimize page promoting with hot page selection and alternatives
- Control the trashing among memory types
- Possible user space based demoting/promoting

We also want to discuss about the possible solution choices and interfaces in kernel and user space.

I agree to abide by the anti-harassment policy

Yes

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Session Classification: LPC Refereed Track

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