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Ongoing Challenges of Large Page Sizes

During the transition to a 16kb page size system, numerous instances were found where the kernel or userspace relied on the assumption of PAGE_SIZE == 4096. While many functional issues have been resolved, some inherent challenges persist, along with opportunities for optimization in systems with larger page sizes.

This work investigates the following key challenges and potential areas of optimizations:

- Alignment requirements of reserved memory CMA regions.
- VMA slab memory usage on large page size systems.
- ELF alignment and Pagecache readhead.
- User space Memory Accounting and Fault Around.
- Compatibilty of 4kB ELFs on Large page size systems.

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