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ktask: Parallelizing CPU-intensive kernel work

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Certain CPU-intensive tasks in the kernel can benefit from multithreading, such as zeroing large ranges of memory, initializing massive state (struct page) at boot, VFIO page pinning, XFS quotacheck, and freeing memory on munmap/exit. There is currently no interface that provides this service. ktask is a framework built on workqueues that splits up the work, chooses the number of threads to use, synchronizes these threads, and load balances the work between them. I want to discuss current issues with this work, including allowing ktask threads to play well with the scheduler, cgroup awareness so ktask threads are throttled appropriately, and appropriately enabling ktask according to power management settings.

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