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Improving page_owner for profiling and monitoring memory usage per allocation stack trace

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The existing page_owner debug feature tracks the stack trace of memory allocations in the system at the page level. It can answer questions like: ‘*What allocated this page?*’ and ‘*How many pages are allocated by what?*’ – pointing right at the source code.

That allows for profiling and monitoring all of the system memory per allocation stack trace to identify trends, leaks, spikes, regressions, correlations with events and metrics/statistics, and so on; then validate whether code changes perform as expected.

While using page_owner, we have been working on support for pages in swap space and reducing the overhead of information and processing for userspace, in order to improve memory coverage and sampling frequency.

This talk discusses the related kernel work and some usage examples.

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