Subject: kmemcg benchmarks
Posted by Glauber Costa on Thu, 13 Sep 2012 11:32:27 GMT
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Hello everybody.

I've just finished a round of benchmarks for kmemcg code. All the results can be found at: http://glommer.net/kmemcg-benchmarks-13092012/

The benchmarks were run in a 2-socket, 24-cpu machine. I haven't run all possible configurations I have envisioned, because I wanted this posted early rather than later. I've also had un-official runs in my 4-cpu i7 laptop and in a 6-way single socket AMD box. They would need to be re-run to be publishable, since they are quite raw and ad-hoc (like, I was not running perf stat always in the same way, doing some things manually, etc) But they overall point to consistent results.

You can find a guide to that data in the README file in that dir, and the actual data in the results* dir. The chosen allocator for this is the SLAB.

A summary and discussion of the data follows:

fork intensive workload, elapsed time:
==========
base-NotCompiled : 16.76 +- 0.87% [+ 0.00 %]
kmemcg-stack-Unset: 16.28 +- 1.10% [- 2.86 %]
kmemcg-stack-Set : 16.96 +- 0.65% [+ 1.19 %]
kmemcg-slab-Unset : 16.71 +- 1.16% [+ 0.28 %]
kmemcg-slab-Set : 17.11 +- 0.48% [+ 2.08 %]

fork + user mem, elapsed time:
==========
base-NotCompiled : 4.88 +- 0.35% [+ 0.00 %]
kmemcg-stack-Unset: 4.87 +- 0.36% [- 0.34 %]
kmemcg-stack-Set : 4.85 +- 0.37% [- 0.76 %]
kmemcg-slab-Unset : 4.84 +- 0.39% [- 0.79 %]
kmemcg-slab-Set : 4.84 +- 0.35% [- 0.78 %]

So in general, I don't see a big difference, with almost all measurements falling inside the 2-sigma range.

>From the fork intensive workload, two things pop out: first, kmem patches applied, but kmem not used, actually performs slightly better than no patches at all. I don't know why this is, and it might even be a glitch. But it consistently happened in my laptop and in the 6-way AMD

machine.

Also, we can see that in that workload, which is slab intensive, kmemcg-slab-Set performs slightly worse. Being worse is inline with expectations, but I don't consider the hit to be too big.

Please let me know of any additional work you would like to see done here.
