
Subject: [PATCH v4 00/19] slab accounting for memcg
Posted by [Glauber Costa](#) on Fri, 12 Oct 2012 13:40:54 GMT
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This is a followup to the previous kmem series. I divided them logically so it gets easier for reviewers. But I believe they are ready to be merged together (although we can do a two-pass merge if people would prefer)

Throwaway git tree found at:

`git://git.kernel.org/pub/scm/linux/kernel/git/glommer/memcg. git kmemcg-slab`

I've bundled the following important changes since last submission:

- * no more messing with the cache name after destruction: aggregated figures are shown in `/proc/slabinfo`.
- * `memory.kmem.slabinfo` file with memcg-specific cache information during its lifespan.
- * full slub attribute propagation.
- * reusing the standard workqueue mechanism.
- * cache-side indexing, instead of memcg-side indexing. The memcg `css_id` serves as an index, and we don't need extra indexes for that.
- * `struct memcg_cache_params` no longer bundled in `struct kmem_cache`: We now will have only a pointer in the struct, allowing memory consumption when disable to fall down ever further.

Patches need to be adjusted to cope with those changes, but other than that, look the same - just a lot simpler.

I also put quite some effort to overcome my writing disability and get some decent changelogs in place.

For a detailed explanation about this whole effort, please refer to my previous post (<https://lkml.org/lkml/2012/10/8/119>)

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Glauber Costa (19):

- slab: Ignore internal flags in cache creation
- move slabinfo processing to `slab_common.c`
- move `print_slabinfo_header` to `slab_common.c`
- sl[au]b: process `slabinfo_show` in common code
- slab: don't preemptively remove element from list in cache destroy
- slab/slub: `struct memcg_params`
- consider a memcg parameter in `kmem_create_cache`
- Allocate memory for memcg caches whenever a new memcg appears
- memcg: infrastructure to match an allocation to the right cache
- memcg: skip memcg kmem allocations in specified code regions

sl[au]b: always get the cache from its page in kfree
 sl[au]b: Allocate objects from memcg cache
 memcg: destroy memcg caches
 memcg/sl[au]b Track all the memcg children of a kmem_cache.
 memcg/sl[au]b: shrink dead caches
 Aggregate memcg cache values in slabinfo
 slab: propagate tunables values
 slub: slub-specific propagation changes.
 Add slab-specific documentation about the kmem controller

```
Documentation/cgroups/memory.txt | 7 +
include/linux/memcontrol.h      | 88 ++++++
include/linux/sched.h          | 1 +
include/linux/slab.h            | 47 +++
include/linux/slab_def.h        | 3 +
include/linux/slub_def.h        | 19 +-
init/Kconfig                   | 2 +-
mm/memcontrol.c                 | 599 ++++++-----
mm/slab.c                      | 210 ++++++-----
mm/slab.h                      | 157 ++++++---
mm/slab_common.c               | 224 ++++++-----
mm/slub.c                      | 193 ++++++-----
12 files changed, 1311 insertions(+), 239 deletions(-)
```

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 1.7.11.4