

---

Subject: Re: [PATCH 12/23] slab: pass memcg parameter to kmem\_cache\_create  
Posted by [Suleiman Souhlal](#) on Mon, 30 Apr 2012 19:54:36 GMT  
[View Forum Message](#) <> [Reply to Message](#)

---

On Sun, Apr 22, 2012 at 4:53 PM, Glauber Costa <glommer@parallels.com> wrote:

```
> Allow a memcg parameter to be passed during cache creation.
>
> Default function is created as a wrapper, passing NULL
> to the memcg version. We only merge caches that belong
> to the same memcg.
>
> This code was mostly written by Suleiman Souhlal and
> only adapted to my patchset, plus a couple of simplifications
>
> Signed-off-by: Glauber Costa <glommer@parallels.com>
> CC: Christoph Lameter <cl@linux.com>
> CC: Pekka Enberg <penberg@cs.helsinki.fi>
> CC: Michal Hocko <mhocko@suse.cz>
> CC: Kamezawa Hiroyuki <kamezawa.hiroyu@jp.fujitsu.com>
> CC: Johannes Weiner <hannes@cmpxchg.org>
> CC: Suleiman Souhlal <suleiman@google.com>
> ---
> mm/slab.c | 38 ++++++-----
> 1 files changed, 29 insertions(+), 9 deletions(-)
>
> diff --git a/mm/slab.c b/mm/slab.c
> index a0d51dd..362bb6e 100644
> --- a/mm/slab.c
> +++ b/mm/slab.c
> @@ -2287,14 +2287,15 @@ static int __init_refok setup_cpu_cache(struct kmem_cache
> *cachep, gfp_t gfp)
>  * cacheline. This can be beneficial if you're counting cycles as closely
>  * as davem.
>  */
> -struct kmem_cache *
> -kmem_cache_create(const char *name, size_t size, size_t align,
> -    unsigned long flags, void (*ctor)(void *))
> +static struct kmem_cache *
> +__kmem_cache_create(struct mem_cgroup *memcg, const char *name, size_t size,
> +    size_t align, unsigned long flags, void (*ctor)(void *))
> {
> -    size_t left_over, slab_size, ralign;
> +    size_t left_over, orig_align, ralign, slab_size;
>     struct kmem_cache *cachep = NULL, *pc;
>     gfp_t gfp;
>
> +    orig_align = align;
>     /*
```

```

>     * Sanity checks... these are all serious usage bugs.
>     */
> @@ -2311,7 +2312,6 @@ kmem_cache_create (const char *name, size_t size, size_t align,
>     */
>     if (slab_is_available()) {
>         get_online_cpus();
> -         mutex_lock(&cache_chain_mutex);
>     }
>
>     list_for_each_entry(pc, &cache_chain, next) {
> @@ -2331,9 +2331,9 @@ kmem_cache_create (const char *name, size_t size, size_t align,
>         continue;
>     }
>
> -     if (!strcmp(pc->name, name)) {
> +     if (!strcmp(pc->name, name) && !memcg) {
>         printk(KERN_ERR
> -             "kmem_cache_create: duplicate cache %s\n", name);
> +             "kmem_cache_create: duplicate cache %s\n", name);
>         dump_stack();
>         goto oops;
>     }
> @@ -2434,6 +2434,9 @@ kmem_cache_create (const char *name, size_t size, size_t align,
>     cachep->nodelists = (struct kmem_list3 **)&cachep->array[nr_cpu_ids];
>
>     set_obj_size(cachep, size);
> +#ifdef CONFIG_CGROUP_MEM_RES_CTLR_KMEM
> +     cachep->memcg_params.orig_align = orig_align;
> +#endif
> #if DEBUG
>
>     /*
> @@ -2541,7 +2544,12 @@ kmem_cache_create (const char *name, size_t size, size_t align,
>         BUG_ON(ZERO_OR_NULL_PTR(cachep->slabp_cache));
>     }
>     cachep->ctor = ctor;
> -     cachep->name = name;
> +     cachep->name = (char *)name;
> +
> +#ifdef CONFIG_CGROUP_MEM_RES_CTLR_KMEM
> +     mem_cgroup_register_cache(memcg, cachep);
> +     atomic_set(&cachep->memcg_params.refcnt, 1);
> +#endif

```

cache\_cache probably doesn't get its id registered correctly. :-(  
We might need to add a mem\_cgroup\_register\_cache() call to kmem\_cache\_init().

-- Suleiman

---