Subject: Re: [PATCH v4 23/25] memcg: propagate kmem limiting information to children
Posted by Glauber Costa on Wed, 20 Jun 2012 08:59:46 GMT
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On 06/19/2012 12:54 PM, Glauber Costa wrote:
> On 06/19/2012 12:35 PM, Glauber Costa wrote:
>> On 06/19/2012 04:16 AM, Kamezawa Hiroyuki wrote:
>>> (2012/06/18 21:43), Glauber Costa wrote:
>>>> On 06/18/2012 04:37 PM, Kamezawa Hiroyuki wrote:
>>>>> (2012/06/18 19:28), Glauber Costa wrote:
>>>>>> The current memcg slab cache management fails to present satisfatory hierarchical
>>>>>> behavior in the following scenario:
>>>>>>
>>>>>> -> /cgroups/memory/A/B/C
>>>>>>
>>>>>> * kmem limit set at A
>>>>>> * A and B empty taskwise
>>>>>> * bash in C does find /
>>>>>>
>>>>>> Because kmem_accounted is a boolean that was not set for C, no accounting
>>>>>> would be done. This is, however, not what we expect.
>>>>>>
>>>>>
>>>>> Hmm....do we need this new routines even while we have mem_cgroup_iter() ?
>>>>>
>>>>> Doesn't this work ?
>>>>>
>>>>> struct mem_cgroup {
>>>>> .....
>>>>> bool kmem_accounted_this;
>>>>> atomic_t kmem_accounted;
>>>>> ....
>>>>> }
>>>>>
>>>>> at set limit
>>>>>
>>>>> ....set_limit(memcg) {
>>>>>
>>>>> if (newly accounted) {
>>>>> mem_cgroup_iter() {
>>>>> atomic_inc(&iter->kmem_accounted)
>>>>> }
>>>>> } else {
>>>>> mem_cgroup_iter() {
>>>>> atomic_dec(&iter->kmem_accounted);
>>>>> }
>>>>> }

>>>>>
>>>>>
>>>>> hm ? Then, you can see kmem is accounted or not by
atomic_read(&memcg->kmem_accounted);
>>>>>
>>>>
>>>> Accounted by itself / parent is still useful, and I see no reason to use
>>>> an atomic + bool if we can use a pair of bits.
>>>>
>>>> As for the routine, I guess mem_cgroup_iter will work... It does a lot
>>>> more than I need, but for the sake of using what's already in there, I
>>>> can switch to it with no problems.
>>>>
>>>
>>> Hmm. please start from reusing existing routines.
>>> If it's not enough, some enhancement for generic cgroup will be welcomed
>>> rather than completely new one only for memcg.
>>>
>>
>> And now that I am trying to adapt the code to the new function, I
>> remember clearly why I done this way. Sorry for my failed memory.
>>
>> That has to do with the order of the walk. I need to enforce hierarchy,
>> which means whenever a cgroup has !use_hierarchy, I need to cut out that
>> branch, but continue scanning the tree for other branches.
>>
>> That is a lot easier to do with depth-search tree walks like the one
>> proposed in this patch. for_each_mem_cgroup() seems to walk the tree in
>> css-creation order. Which means we need to keep track of parents that
>> has hierarchy disabled at all times (can be many), and always test for
>> ancestorship - which is expensive, but I don't particularly care.
>>
>> But I'll give another shot with this one.
>>
>
> Humm, silly me. I was believing the hierarchical settings to be more
> flexible than they really are.
>
> I thought that it could be possible for a children of a parent with
> use_hierarchy = 1 to have use_hierarchy = 0.
>
> It seems not to be the case. This makes my life a lot easier.
>

How about the following patch?

It is still expensive in the clear_bit case, because I can't just walk
the whole tree flipping the bit down: I need to stop whenever I see a

branch whose root is itself accounted - and the ordering of iter forces me to always check the tree up (So we got O(n*h) h being height instead of O(n)).

for flipping the bit up, it is easy enough.

File Attachments

1) 0001-memcg-propagate-kmem-limiting-information-to-childre.patch, downloaded 710 times