
Subject: Re: [ckrm-tech] [PATCH] BC: resource beancounters (v4) (added user memory)

Posted by [Chandra Seetharaman](#) on Fri, 15 Sep 2006 00:02:21 GMT

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On Thu, 2006-09-14 at 17:02 +0400, Pavel Emelianov wrote:

<snip>

> >

> Reserving in advance means that sometimes you won't be able to start a
> new group without taking back some of reserved pages. This is ... strange.

I do not see it strange. At the time of creation, user sees the failure
(that there isn't enough resource to provide the required/requested
guarantee) and can act accordingly.

BTW, VMware does it this way.

>

> I think that a satisfactory solution now would be:

> - limit unreclaimable memory during mmap() against soft limit to prevent
> potential rejects during page faults;

we can have guarantee and still handle it this way.

> - reclaim memory in case of hitting hard limit;
> - guarantees are done via setting soft and hard limits as I've shown
> before.

complexity is high in doing that.

>

> The question still open is whether or not to account fractions.
> I propose to skip fractions for a while and try to charge the page to
> it's first user.

sounds fine

>

> So final BC design is:

> 1. three resources:

> - kernel memory
> - user unreclaimable memory
> - user reclaimable memory

should be able to get other controllers also under this framework.

> 2. unreclaimable memory is charged "in advance", reclaimable
> is charged "on demand" with reclamation if needed
> 3. each object (kernel one or user page) is charged to the

- > first user
- > 4. each resource controller declares it's own
 - > - meaning of "limit" parameter (percent/size/bandwidth/etc)
 - > - behaviour on changing limit (e.g. reclamation)
 - > - behaviour on hitting the limit (e.g. reclamation)
- > 5. BC can be assigned to any task by pid (not just current)
- > without recharging currently charged resources.

Please see the emails i sent earlier in this context:

<http://marc.theaimsgroup.com/?l=ckrm-tech&m=115593001810616&w=2>

We would need at least:

- BC should be created/deleted explicitly by the user
- cleaner interface for controller writers

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Chandra Seetharaman | Be careful what you choose....
- sekharan@us.ibm.com |you may get it.
