
Subject: Re: [PATCH, v3 2/2] cgroups: introduce timer slack subsystem
Posted by [Kirill A. Shutemov](#) on Mon, 07 Feb 2011 18:32:24 GMT
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On Mon, Feb 07, 2011 at 09:20:40AM -0800, Jacob Pan wrote:

> On Mon, 7 Feb 2011 13:06:03 +0200

> "Kirill A. Shutemov" <kirill@shutemov.name> wrote:

>

>> On Fri, Feb 04, 2011 at 09:27:55AM -0800, Jacob Pan wrote:

>>> On Fri, 4 Feb 2011 15:34:39 +0200

>>> "Kirill A. Shutemov" <kirill@shutemov.name> wrote:

>>>> What's mean "original timer slack" if you are free to move a task

>>>> between a lot of cgroups and process itself free to change it

>>>> anytime?

>>>>

>>>>

>>>> I need to manage tasks by a management software instead of letting

>>>> the task change timer_slack by itself. The goal is to make

>>>> management transparent and no modifications to the existing apps.

>>>> Therefore, it is desirable to automatically enforce timer_slack

>>>> when the apps are in the cgroup while automatically restore it when

>>>> it is no longer under cgroup management.

>>>>

>>> Tasks are always under cgroup management. Root cgroup is still cgroup.

>>>

>>>> So the "original timer slack" can be the default 50us or whatever

>>>> value chosen by the task itself. But the app itself should not care

>>>> or even be aware of which cgroup it is in.

>>>>

>>>> So here are two options i can think of

>>>> 1. add a new variable called cg_timer_slack_ns to struct

>>>> task_struct{} cg_timer_slack_ns will be set by cgroup timer_slack

>>>> subsystem, then we can retain the original per task value in

>>>> timer_slack_ns. timer code will pick max(cg_timer_slack_ns,

>>>> timer_slack_ns) if cg_timer_slack_ns is set.

>>>>

>>>> 2. leave task_struct unchanged, add a current_timer_slack to the

>>>> cgroup. timer_slack cgroup does not modify per task timer_slack_ns.

>>>> similar to option #1, let timer code pick the timer_slack to use

>>>> based on whether the task is in timer_slack cgroup.

>>>>

>>>> Any thoughts?

>>>>

>>>> I think it's over-engineering.

>>>>

>> We do have a real use case that cannot be solved by the current logic,

>> I only want to find a solution.

>>> What about configuration like this:

```

> >
> > root_cgroup
> > |--timer_slack.min_slack_ns = 0
> > |--timer_slack.max_slack_ns = ULONG_MAX
> > |--50us
> > | |--timer_slack.min_slack_ns = 50000
> > | |--timer_slack.max_slack_ns = 50000
> > |--500us
> >   |--timer_slack.min_slack_ns = 500000
> >   |--timer_slack_max_slack_ns = ULONG_MAX
> >
> > If you want a task allow to drive its timer_slack, just leave it in
> > root_cgroup.
> >
> > It you want to drive timer_slack of a task, move it between 50us and
> > 500um based on your policy.
> >
> > I surely agree with the dummy root configuration. But when the
> > management software moves task among 50us or 500us cgroups, or back to
> > dummy root, the timer slack cannot be automatically changed.
> >
> > consider the following scenarios.
> > 1. task_A has timer_slack = ts1 = 3us when it is running in the
> > foreground by window manager
> > 2. then it is moved to 50us cgroup because it is no longer in the
> > foreground, so now ts1 = 50us.
> > 3. After a while, the system is running in the low power state, so
> > task_A is moved to 500us cgroup, ts1 = 500us. Then the user switch the
> > device into normal running state and put task_A in foreground again.
> > 4. Management software then moves task_A from 500us cgroup to dummy
> > root, but it will not be able to restore the 3us timer slack as needed
> > by task_A. Task can surely drive its timer_slack but it breaks the
> > cgroup-transparency desired by the management scheme.

```

Can you use 3us cgroup instead of moving to root cgroup? :)

I understand your use-case, but I can't provide sane interface to implement this.

```

> > The key is that tasks being managed are not aware of cgroup
> > involvement. The management software is the one that moves tasks
> > around, but we don't want the management software keeps track of very
> > timer slacks value of every tasks.
> >
> > Thanks,
> > Jacob

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Kirill A. Shutemov

Containers mailing list

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<https://lists.linux-foundation.org/mailman/listinfo/containers>
