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Subject: Re: containers (was Re: -mm merge plans for 2.6.23)  
Posted by [Srivatsa Vaddagiri](#) on Wed, 11 Jul 2007 10:03:23 GMT  
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On Wed, Jul 11, 2007 at 02:23:52AM -0700, Paul Jackson wrote:

> Ingo wrote:

> > another option would be to trivially hook up CONFIG\_FAIR\_GROUP\_SCHED

> > with cpusets, ...

>

> ah ... you triggered my procmail filter for 'cpuset' ... ;).

:~)

> What would it mean to hook up CFS with cpusets?

CFS is the new cpu scheduler in Linus's tree (<http://lwn.net/Articles/241085/>).

It has some group scheduling capabilities added i.e the core scheduler now recognizes the concept of a task-group and providing fair cpu time to each task-group (in addition to providing fair time to each task in a group).

The core scheduler however is not concerned with how task groups are formed and/or how tasks migrate between groups. That's where a patch like Paul Menage's container infrastructure comes in hand - to provide a user-interface for managing task-groups (create/delete task groups, migrate task from one group to another etc). Whatever the chosen user-interface is, cpu scheduler needs to know about such task-group creation/destruction, migration of tasks across groups etc.

Unfortunately, the group-scheduler bits will be ready in 2.6.23 while Paul Menage's container patches aren't ready for 2.6.23 yet.

So Ingo was proposing we use cpuset as that user interface to manage task-groups. This will be only for 2.6.23. In 2.6.24, when hopefully Paul Menage's container patches will be ready and will be merged, the group cpu scheduler will stop using cpuset as that interface and use the container infrastructure instead.

If you recall, I have attempted to use cpuset for such an interface in the past (metered cpusets - see [1]). It brings in some semantic changes for cpusets, most notably:

- metered cpusets cannot have grand-children
- all cpusets under a metered cpuset need to share the same set of cpus.

Is it fine if I introduce these semantic changes, only for 2.6.23 and only when CONFIG\_FAIR\_GROUP\_SCHED is enabled? This will let the group

cpu scheduler to receive some amount of testing.

The other alternative is to hook up group scheduler with user-id's (again only for 2.6.23).

> I've a pretty  
> good idea what a cpuset is, but don't know what kind of purpose  
> you have in mind for such a hook. Could you say a few words to  
> that? Thanks.

Reference:

1. <http://marc.info/?l=linux-kernel&m=115946525811848&w=2>

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Regards,  
vatsa

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Containers mailing list  
Containers@lists.linux-foundation.org  
<https://lists.linux-foundation.org/mailman/listinfo/containers>

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