Subject: Re: [ckrm-tech] [PATCH 0/2] resource control file system - aka containers on top of nsproxy!
Posted by Herbert Poetzl on Mon, 05 Mar 2007 18:39:37 GMT
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On Mon, Mar 05, 2007 at 11:04:01PM +0530, Srivatsa Vaddagiri wrote:
> On Sat, Mar 03, 2007 at 06:32:44PM +0100, Herbert Poetzl wrote:
> > > Yes, perhaps this overloads nsproxy more than what it was intended for.
> > > But, then if we have to to support resource management of each
> > > container/vserver (or whatever group is represented by nsproxy),
> > > then nsproxy seems the best place to store this resource control
> > > information for a container.
> >
> > well, the thing is, as nsproxy is working now, you
> > will get a new one (with a changed subset of entries)
> > every time a task does a clone() with one of the
> > space flags set, which means, that you will end up
> > with quite a lot of them, but resource limits have
> > to address a group of them, not a single nsproxy
> > (or act in a deeply hierarchical way which is not
> > there atm, and probably will never be, as it simply
> > adds too much overhead)
>
> Thats why nsproxy has pointers to resource control objects, rather
> than embedding resource control information in nsproxy itself.

which makes it a (name)space, no?

> >From the patches:
>
> struct nsproxy {
>
> +#ifdef CONFIG_RCFS
> +	struct list_head list;
> +	void *ctlr_data[CONFIG_MAX_RC_SUBSYS];
> +#endif
>
> }
>
> This will let different nsproxy structures share the same resource
> control objects (ctlr_data) and thus be governed by the same
> parameters.

as it is currently done for vfs, uts, ipc and soon
pid and network l2/l3, yes?

> Where else do you think the resource control information for a
> container should be stored?

an alternative for that is to keep the resource
stuff as part of a 'context' structure, and keep
a reference from the task to that (one less
indirection, as we had for vfs before)

> > > It should have the same perf overhead as the original
> > > container patches (basically a double dereference -
> > > task->containers/nsproxy->cpuset - required to get to the
> > > cpuset from a task).
> >
> > on every limit accounting or check? I think that
> > is quite a lot of overhead ...
>
> tsk->nsproxy->ctlr_data[cpu_ctlr->id]->limit (4 dereferences)
> is what we need to get to the cpu b/w limit for a task.

sounds very 'cache intensive' to me ...
(especially compared to the one indirection be use atm)

> If cpu_ctlr->id is compile time decided, then that would reduce it to 3.
>
> But I think if CPU scheduler schedules tasks from same
> container one after another (to the extent possible that is),

which is very probably not what you want, as it

 - will definitely hurt interactivity
 - give strange 'jerky' behaviour
 - ignore established priorities

> then other derefences (->ctlr_data[] and ->limit) should be fast, as
> they should be in the cache?

please provide real world numbers from testing ...

at least for me, that is not really obvious in
four way indirection :)

TIA,
Herbert

> --
> Regards,
> vatsa

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