Subject: Re: [RFC] Default child of a cgroup
Posted by Peter Zijlstra on Fri, 01 Feb 2008 07:58:32 GMT
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On Thu, 2008-01-31 at 18:39 -0800, Paul Menage wrote:
> On Jan 30, 2008 6:40 PM, Srivatsa Vaddagiri <vatsa@linux.vnet.ibm.com> wrote:
> >
> > Here are some questions that arise in this picture:
> >
> > 1. What is the relationship of the task-group in A/tasks with the
> >   task-group in A/a1/tasks? In otherwords do they form siblings
> >   of the same parent A?
>
> I'd argue the same as Balbir - tasks in A/tasks are are children of A
> and are siblings of a1, a2, etc.
>
> >
> > 2. Somewhat related to the above question, how much resource should the
> >   task-group A/a1/tasks get in relation to A/tasks? Is it 1/2 of parent
> >   A's share or 1/(1 + N) of parent A's share (where N = number of tasks
> >   in A/tasks)?
>
> Each process in A should have a scheduler weight that's derived from
> its static_prio field. Similarly each subgroup of A will have a
> scheduler weight that's determined by its cpu.shares value. So the cpu
> share of any child (be it a task or a subgroup) would be equal to its
> own weight divided by the sum of weights of all children.
>
> So yes, if a task in A forks lots of children, those children could
> end up getting a disproportionate amount of the CPU compared to tasks
> in A/a1 - but that's the same as the situation without cgroups. If you
> want to control cpu usage between different sets of processes in A,
> they should be in sibling cgroups, not directly in A.
>
> Is there a restriction in CFS that stops a given group from
> simultaneously holding tasks and sub-groups? If so, couldn't we change
> CFS to make it possible rather than enforcing awkward restructions on
> cgroups?

I think it is possible, just way more work than the proposed hack.

> If we really can't change CFS in that way, then an alternative would
> be similar to Peter's suggestion - make cpu_cgroup_can_attach() fail
> if the cgroup has children, and make cpu_cgroup_create() fail if the
> cgroup has any tasks - that way you limit the restriction to just the
> hierarchy that has CFS attached to it, rather than generically for all
> cgroups

Agreed.

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