
Subject: [PATCH -mm 2/3] cgroup: simplify init_subsys()
Posted by [Li Zefan](#) on Thu, 03 Apr 2008 05:53:03 GMT
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We are at system boot and there is only 1 cgroup group (i.e, init_css_set), so we don't need to run through the css_set linked list. Neither do we need to run through the task list, since no processes have been created yet.

Also referring to a comment in cgroup.h:

```
struct css_set
{
    ...
    /*
     * Set of subsystem states, one for each subsystem. This array
     * is immutable after creation apart from the init_css_set
     * during subsystem registration (at boot time).
     */
    struct cgroup_subsys_state *subsys[CGROUP_SUBSYS_COUNT];
}
```

Signed-off-by: Li Zefan <lizf@cn.fujitsu.com>

```
Documentation/cgroups.txt | 3 +--
kernel/cgroup.c           | 35 ++++++++-----
2 files changed, 10 insertions(+), 28 deletions(-)
```

```
diff --git a/Documentation/cgroups.txt b/Documentation/cgroups.txt
index 31d12e2..c298a66 100644
--- a/Documentation/cgroups.txt
+++ b/Documentation/cgroups.txt
@@ -500,8 +500,7 @@ @@ post-attachment activity that requires memory allocations or blocking.
```

```
void fork(struct cgroup_subsys *ss, struct task_struct *task)
```

-Called when a task is forked into a cgroup. Also called during
-registration for all existing tasks.
+Called when a task is forked into a cgroup.

```
void exit(struct cgroup_subsys *ss, struct task_struct *task)
```

```
diff --git a/kernel/cgroup.c b/kernel/cgroup.c
index f79e60d..250e28e 100644
--- a/kernel/cgroup.c
+++ b/kernel/cgroup.c
@@ -2471,7 +2471,6 @@ @@ static int cgroup_rmdir(struct inode *unused_dir, struct dentry *dentry)
static void __init cgroup_init_subsys(struct cgroup_subsys *ss)
```

```

{
    struct cgroup_subsys_state *css;
- struct list_head *l;

    printk(KERN_INFO "Initializing cgroup subsys %s\n", ss->name);

@@ -2482,35 +2481,19 @@ static void __init cgroup_init_subsys(struct cgroup_subsys *ss)
    BUG_ON(IS_ERR(css));
    init_cgroup_css(css, ss, dummytop);

- /* Update all cgroup groups to contain a subsys
+ /* Update the init_css_set to contain a subsys
    * pointer to this state - since the subsystem is
- * newly registered, all tasks and hence all cgroup
- * groups are in the subsystem's top cgroup. */
- write_lock(&css_set_lock);
- l = &init_css_set.list;
- do {
-     struct css_set *cg =
-     list_entry(l, struct css_set, list);
-     cg->subsys[ss->subsys_id] = dummytop->subsys[ss->subsys_id];
-     l = l->next;
- } while (l != &init_css_set.list);
- write_unlock(&css_set_lock);
-
- /* If this subsystem requested that it be notified with fork
- * events, we should send it one now for every process in the
- * system */
- if (ss->fork) {
-     struct task_struct *g, *p;
-
-     read_lock(&tasklist_lock);
-     do_each_thread(g, p) {
-         ss->fork(ss, p);
-     } while_each_thread(g, p);
-     read_unlock(&tasklist_lock);
- }
+ * newly registered, all tasks and hence the
+ * init_css_set is in the subsystem's top cgroup. */
+ init_css_set.subsys[ss->subsys_id] = dummytop->subsys[ss->subsys_id];

    need_forkexit_callback |= ss->fork || ss->exit;

+ /* At system boot, before all subsystems have been
+ * registered, no tasks have been forked, so we don't
+ * need to invoke fork callbacks here. */
+ BUG_ON(!list_empty(&init_task.tasks));
+

```

```
ss->active = 1;
}
```

--
1.5.4.rc3

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

Subject: Re: [PATCH -mm 2/3] cgroup: simplify init_subsys()
Posted by [Paul Menage](#) on Thu, 03 Apr 2008 17:41:00 GMT
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On Wed, Apr 2, 2008 at 10:53 PM, Li Zefan <lizf@cn.fujitsu.com> wrote:

```
> We are at system boot and there is only 1 cgroup group (i,e,
> init_css_set), so we don't need to run through the css_set
> linked list. Neither do we need to run through the task list,
> since no processes have been created yet.
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>
> Also referring to a comment in cgroup.h:
>
> struct css_set
> {
>     ...
>     /*
>      * Set of subsystem states, one for each subsystem. This array
>      * is immutable after creation apart from the init_css_set
>      * during subsystem registration (at boot time).
>      */
>     struct cgroup_subsys_state *subsys[CGROUP_SUBSYS_COUNT];
> }
>
> Signed-off-by: Li Zefan <lizf@cn.fujitsu.com>
```

Reviewed-by: Paul Menage <menage@google.com>

Looks good, thanks.

```
> ---
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> @@ -500,8 +500,7 @@ post-attachment activity that requires memory allocations or blocking.
>
> void fork(struct cgroup_subsys *ss, struct task_struct *task)
>
> -Called when a task is forked into a cgroup. Also called during
> -registration for all existing tasks.
> +Called when a task is forked into a cgroup.
>
> void exit(struct cgroup_subsys *ss, struct task_struct *task)
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> diff --git a/kernel/cgroup.c b/kernel/cgroup.c
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> @@ -2471,7 +2471,6 @@ static int cgroup_rmdir(struct inode *unused_dir, struct dentry
> *dentry)
>
> static void __init cgroup_init_subsys(struct cgroup_subsys *ss)
> {
>     struct cgroup_subsys_state *css;
> -    struct list_head *l;
>
>     printk(KERN_INFO "Initializing cgroup subsys %s\n", ss->name);
>
> @@ -2482,35 +2481,19 @@ static void __init cgroup_init_subsys(struct cgroup_subsys *ss)
>
>     BUG_ON(IS_ERR(css));
>     init_cgroup_css(css, ss, dummytop);
>
> -    /* Update all cgroup groups to contain a subsys
> +    /* Update the init_css_set to contain a subsys
>     * pointer to this state - since the subsystem is
>     * newly registered, all tasks and hence all cgroup
>     * groups are in the subsystem's top cgroup. */
> -    write_lock(&css_set_lock);
> -    l = &init_css_set.list;
> -    do {
> -        struct css_set *cg =
> -            list_entry(l, struct css_set, list);
> -        cg->subsys[ss->subsys_id] = dummytop->subsys[ss->subsys_id];
> -        l = l->next;
> -    } while (l != &init_css_set.list);
> -    write_unlock(&css_set_lock);
> -

```

```

>
> - /* If this subsystem requested that it be notified with fork
> -  * events, we should send it one now for every process in the
> -  * system */
> - if (ss->fork) {
> -     struct task_struct *g, *p;
> -
> -     read_lock(&tasklist_lock);
> -     do_each_thread(g, p) {
> -         ss->fork(ss, p);
> -     } while_each_thread(g, p);
> -     read_unlock(&tasklist_lock);
> - }
>
> + /* newly registered, all tasks and hence the
> +  * init_css_set is in the subsystem's top cgroup. */
> + init_css_set.subsys[ss->subsys_id] = dummytop->subsys[ss->subsys_id];
>
> need_forkexit_callback |= ss->fork || ss->exit;
>
> + /* At system boot, before all subsystems have been
> +  * registered, no tasks have been forked, so we don't
> +  * need to invoke fork callbacks here. */
> + BUG_ON(!list_empty(&init_task.tasks));
> +
> ss->active = 1;
> }
>
> --
> 1.5.4.rc3
>

```

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