Subject: [PATCH] attach_pid() with struct pid parameter
Posted by Sukadev Bhattiprolu on Thu, 01 Mar 2007 03:48:24 GMT
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From: Sukadev Bhattiprolu <sukadev@us.ibm.com>
Subject: [PATCH] attach_pid() with struct pid parameter

attach_pid() currently takes a pid_t and then uses find_pid() to find
the corresponding struct pid. Sometimes we already have the struct pid.
We can then skip find_pid() if attach_pid() were to take a struct pid
parameter.

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---
 fs/exec.c | 2 +-
 include/linux/pid.h | 3 +--
 kernel/exit.c | 4 ++--
 kernel/fork.c | 11 +++++++----
 kernel/pid.c | 9 ++++++---
 kernel/sys.c | 2 +-
 6 files changed, 18 insertions(+), 13 deletions(-)

Index: lx26-20-mm2c/fs/exec.c
===
--- lx26-20-mm2c.orig/fs/exec.c 2007-02-28 15:05:02.000000000 -0800
+++ lx26-20-mm2c/fs/exec.c 2007-02-28 15:06:05.000000000 -0800
@@ -701,7 +701,7 @@ static int de_thread(struct task_struct
    */
   detach_pid(tsk, PIDTYPE_PID);
   tsk->pid = leader->pid;
- attach_pid(tsk, PIDTYPE_PID, tsk->pid);
+ attach_pid(tsk, PIDTYPE_PID, find_pid(tsk->pid));
   transfer_pid(leader, tsk, PIDTYPE_PGID);
   transfer_pid(leader, tsk, PIDTYPE_SID);
   list_replace_rcu(&leader->tasks, &tsk->tasks);
Index: lx26-20-mm2c/include/linux/pid.h
===
--- lx26-20-mm2c.orig/include/linux/pid.h 2007-02-28 15:05:02.000000000 -0800
+++ lx26-20-mm2c/include/linux/pid.h 2007-02-28 15:06:05.000000000 -0800
@@ -76,8 +76,7 @@ extern struct pid *get_task_pid(struct t
  * write-held.
  */
 extern int FASTCALL(attach_pid(struct task_struct *task,
-    enum pid_type type, int nr));

```
-
+    enum pid_type type, struct pid *pid));
 extern void FASTCALL(detach_pid(struct task_struct *task, enum pid_type));
 extern void FASTCALL(transfer_pid(struct task_struct *old,
       struct task_struct *new, enum pid_type));
Index: lx26-20-mm2c/kernel/exit.c
===================================================================
--- lx26-20-mm2c.orig/kernel/exit.c 2007-02-28 15:05:02.000000000 -0800
+++ lx26-20-mm2c/kernel/exit.c 2007-02-28 15:06:05.000000000 -0800
@@ -299,12 +299,12 @@ void __set_special_pids(pid_t session, p
  if (process_session(curr) != session) {
   detach_pid(curr, PIDTYPE_SID);
   set_signal_session(curr->signal, session);
-  attach_pid(curr, PIDTYPE_SID, session);
+  attach_pid(curr, PIDTYPE_SID, find_pid(session));
  }
  if (process_group(curr) != pgrp) {
   detach_pid(curr, PIDTYPE_PGID);
   curr->signal->pgrp = pgrp;
-  attach_pid(curr, PIDTYPE_PGID, pgrp);
+  attach_pid(curr, PIDTYPE_PGID, find_pid(pgrp));
  }
 }

Index: lx26-20-mm2c/kernel/fork.c
===================================================================
--- lx26-20-mm2c.orig/kernel/fork.c 2007-02-28 15:05:02.000000000 -0800
+++ lx26-20-mm2c/kernel/fork.c 2007-02-28 15:06:05.000000000 -0800
@@ -1254,16 +1254,19 @@ static struct task_struct *copy_process(
   tracehook_init_task(p);

   if (thread_group_leader(p)) {
+   pid_t pgid = process_group(current);
+   pid_t sid = process_session(current);
+
    p->signal->tty = current->signal->tty;
-   p->signal->pgrp = process_group(current);
+   p->signal->pgrp = pgid;
    set_signal_session(p->signal, process_session(current));
-   attach_pid(p, PIDTYPE_PGID, process_group(p));
-   attach_pid(p, PIDTYPE_SID, process_session(p));
+   attach_pid(p, PIDTYPE_PGID, find_pid(pgid));
+   attach_pid(p, PIDTYPE_SID, find_pid(sid));

    list_add_tail_rcu(&p->tasks, &init_task.tasks);
    __get_cpu_var(process_counts)++;
   }
-  attach_pid(p, PIDTYPE_PID, p->pid);
```

```
+  attach_pid(p, PIDTYPE_PID, find_pid(p->pid));
   nr_threads++;
  }

Index: lx26-20-mm2c/kernel/pid.c
===================================================================
--- lx26-20-mm2c.orig/kernel/pid.c 2007-02-28 15:05:02.000000000 -0800
+++ lx26-20-mm2c/kernel/pid.c 2007-02-28 15:06:05.000000000 -0800
@@ -247,13 +247,16 @@ struct pid * fastcall find_pid(int nr)
 }
 EXPORT_SYMBOL_GPL(find_pid);

-int fastcall attach_pid(struct task_struct *task, enum pid_type type, int nr)
+/*
+ * attach_pid() must be called with the tasklist_lock write-held.
+ */
+int fastcall attach_pid(struct task_struct *task, enum pid_type type,
+  struct pid *pid)
 {
  struct pid_link *link;
- struct pid *pid;

  link = &task->pids[type];
- link->pid = pid = find_pid(nr);
+ link->pid = pid;
  hlist_add_head_rcu(&link->node, &pid->tasks[type]);

  return 0;
Index: lx26-20-mm2c/kernel/sys.c
===================================================================
--- lx26-20-mm2c.orig/kernel/sys.c 2007-02-28 15:05:02.000000000 -0800
+++ lx26-20-mm2c/kernel/sys.c 2007-02-28 15:06:05.000000000 -0800
@@ -1486,7 +1486,7 @@ asmlinkage long sys_setpgid(pid_t pid, p
  if (process_group(p) != pgid) {
   detach_pid(p, PIDTYPE_PGID);
   p->signal->pgrp = pgid;
-  attach_pid(p, PIDTYPE_PGID, pgid);
+  attach_pid(p, PIDTYPE_PGID, find_pid(pgid));
  }

  err = 0;
```

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Containers mailing list
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