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Subject: [PATCH 6/12] pid: Make session\_of\_pgrp use struct pid instead of pid\_t.  
Posted by [ebiederm](#) on Wed, 13 Dec 2006 11:07:50 GMT  
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To properly implement a pid namespace I need to deal exclusively in terms of struct pid, because pid\_t values become ambiguous.

To this end session\_of\_pgrp is transformed to take and return a struct pid pointer. To avoid the need to worry about reference counting I now require my caller to hold the appropriate locks. Leaving callers responsible for increasing the reference count if they need access to the result outside of the locks.

Since session\_of\_pgrp currently only has one caller and that caller simply uses only test the result for equality with another process group, the locking change means I don't actually have to acquire the tasklist\_lock at all.

tiocspgrp is also modified to take and release the lock. The logic there is a little more complicated but nothing I won't need when I convert pgrp of a tty to a struct pid pointer.

Signed-off-by: Eric W. Biederman <[ebiederm@xmission.com](mailto:ebiederm@xmission.com)>

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```
drivers/char/tty_io.c | 24 ++++++-----
include/linux/kernel.h | 3 +-
kernel/exit.c         | 16 +++++-----
3 files changed, 26 insertions(+), 17 deletions(-)
```

```
diff --git a/drivers/char/tty_io.c b/drivers/char/tty_io.c
index 628925e..74f078a 100644
```

```
--- a/drivers/char/tty_io.c
```

```
+++ b/drivers/char/tty_io.c
```

```
@@ -2990,7 +2990,8 @@ static int tiocgpggrp(struct tty_struct *tty, struct tty_struct *real_tty, pid_t
```

```
static int tiocspgrp(struct tty_struct *tty, struct tty_struct *real_tty, pid_t __user *p)
{
- pid_t pgrp;
+ struct pid *pgrp;
+ pid_t pgrp_nr;
  int retval = tty_check_change(real_tty);
```

```
  if (retval == -EIO)
@@ -3001,14 +3002,23 @@ static int tiocspgrp(struct tty_struct *tty, struct tty_struct *real_tty,
pid_t
    (current->signal->tty != real_tty) ||
    (real_tty->session != process_session(current)))
  return -ENOTTY;
```

```

- if (get_user(pgrp, p))
+ if (get_user(pgrp_nr, p))
    return -EFAULT;
- if (pgrp < 0)
+ if (pgrp_nr < 0)
    return -EINVAL;
- if (session_of_pgrp(pgrp) != process_session(current))
- return -EPERM;
- real_tty->pgrp = pgrp;
- return 0;
+ rcu_read_lock();
+ pgrp = find_pid(pgrp_nr);
+ retval = -ESRCH;
+ if (!pgrp)
+ goto out_unlock;
+ retval = -EPERM;
+ if (session_of_pgrp(pgrp) != task_session(current))
+ goto out_unlock;
+ retval = 0;
+ real_tty->pgrp = pgrp_nr;
+out_unlock:
+ rcu_read_unlock();
+ return retval;
}

```

/\*\*

diff --git a/include/linux/kernel.h b/include/linux/kernel.h

index e8bfac3..ac52d33 100644

--- a/include/linux/kernel.h

+++ b/include/linux/kernel.h

@@ -138,7 +138,8 @@ extern unsigned long long memparse(char \*ptr, char \*\*retptr);

extern int core\_kernel\_text(unsigned long addr);

extern int \_\_kernel\_text\_address(unsigned long addr);

extern int kernel\_text\_address(unsigned long addr);

-extern int session\_of\_pgrp(int pgrp);

+struct pid;

+extern struct pid \*session\_of\_pgrp(struct pid \*pgrp);

extern void dump\_thread(struct pt\_regs \*regs, struct user \*dump);

diff --git a/kernel/exit.c b/kernel/exit.c

index 122fadb..97117e7 100644

--- a/kernel/exit.c

+++ b/kernel/exit.c

@@ -185,21 +185,19 @@ repeat:

\* This checks not only the pgrp, but falls back on the pid if no

\* satisfactory pgrp is found. I dunno - gdb doesn't work correctly

\* without this...

```

+ *
+ * The caller must hold rcu lock or the tasklist lock.
+ */
-int session_of_pgrp(int pgrp)
+struct pid *session_of_pgrp(struct pid *pgrp)
{
    struct task_struct *p;
- int sid = 0;
-
- read_lock(&tasklist_lock);
+ struct pid *sid = NULL;

- p = find_task_by_pid_type(PIDTYPE_PGID, pgrp);
+ p = pid_task(pgrp, PIDTYPE_PGID);
    if (p == NULL)
- p = find_task_by_pid(pgrp);
+ p = pid_task(pgrp, PIDTYPE_PID);
    if (p != NULL)
- sid = process_session(p);
-
- read_unlock(&tasklist_lock);
+ sid = task_session(p);

    return sid;
}
--
1.4.4.1.g278f

```

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Containers mailing list  
Containers@lists.osdl.org  
<https://lists.osdl.org/mailman/listinfo/containers>

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