
Subject: [PATCH 12/20] Miscellaneous preparations for pid namespaces

Posted by [Pavel Emelianov](#) on Fri, 10 Aug 2007 11:48:14 GMT

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- * remove pid.h from pid_namespaces.h;
- * rework is_(container|global)_init;
- * optimize (get|put)_pid_ns for init_pid_ns;
- * declare task_child_reaper to return actual reaper.

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```
include/linux/pid_namespace.h | 10 ++++++----
include/linux/sched.h         | 12 +++++-----
kernel/pid.c                  | 21 ++++++++-----
3 files changed, 25 insertions(+), 18 deletions(-)
```

--- ./include/linux/pid_namespace.h.ve11 2007-08-10 12:40:09.000000000 +0400

+++ ./include/linux/pid_namespace.h 2007-08-10 12:40:09.000000000 +0400

@ @ -4,7 +4,6 @ @

```
#include <linux/sched.h>
#include <linux/mm.h>
#include <linux/threads.h>
-#include <linux/pid.h>
#include <linux/nsproxy.h>
#include <linux/kref.h>
```

@ @ -32,7 +31,8 @ @ extern struct pid_namespace init_pid_ns;

```
static inline struct pid_namespace *get_pid_ns(struct pid_namespace *ns)
{
- kref_get(&ns->kref);
+ if (ns != &init_pid_ns)
+ kref_get(&ns->kref);
  return ns;
}
```

@ @ -41,7 +41,8 @ @ extern void free_pid_ns(struct kref *kre

```
static inline void put_pid_ns(struct pid_namespace *ns)
{
- kref_put(&ns->kref, free_pid_ns);
+ if (ns != &init_pid_ns)
+ kref_put(&ns->kref, free_pid_ns);
}
```

```

static inline struct pid_namespace *task_active_pid_ns(struct task_struct *tsk)
@@ -51,7 +52,8 @@ static inline struct pid_namespace *task

static inline struct task_struct *task_child_reaper(struct task_struct *tsk)
{
- return init_pid_ns.child_reaper;
+ BUG_ON(tsk != current);
+ return tsk->nsproxy->pid_ns->child_reaper;
}

#endif /* _LINUX_PID_NS_H */
--- ./include/linux/sched.h.ve11 2007-08-10 12:40:08.000000000 +0400
+++ ./include/linux/sched.h 2007-08-10 12:40:09.000000000 +0400
@@ -1373,19 +1373,17 @@ static inline int pid_alive(struct task_
 * @tsk: Task structure to be checked.
 *
 * Check if a task structure is the first user space task the kernel created.
_ *
- * TODO: We should inline this function after some cleanups in pid_namespace.h
 */
-extern int is_global_init(struct task_struct *tsk);
+static inline int is_global_init(struct task_struct *tsk)
+{
+ return tsk->pid == 1;
+}

/*
 * is_container_init:
 * check whether in the task is init in its own pid namespace.
 */
-static inline int is_container_init(struct task_struct *tsk)
-{
- return tsk->pid == 1;
-}
+extern int is_container_init(struct task_struct *tsk);

extern struct pid *cad_pid;

--- ./kernel/pid.c.ve11 2007-08-10 12:40:08.000000000 +0400
+++ ./kernel/pid.c 2007-08-10 12:40:30.000000000 +0400
@@ -72,10 +72,20 @@ struct pid_namespace init_pid_ns = {
 .child_reaper = &init_task,
};

-int is_global_init(struct task_struct *tsk)
+int is_container_init(struct task_struct *tsk)
{
- return tsk == init_pid_ns.child_reaper;

```

```

+ int ret = 0;
+ struct pid *pid;
+
+ rcu_read_lock();
+ pid = task_pid(tsk);
+ if (pid != NULL && pid->numbers[pid->level].nr == 1)
+   ret = 1;
+ rcu_read_unlock();
+
+ return ret;
}
+EXPORT_SYMBOL(is_container_init);

/*
 * Note: disable interrupts while the pidmap_lock is held as an
@@ -191,8 +201,7 @@ fastcall void put_pid(struct pid *pid)
if ((atomic_read(&pid->count) == 1) ||
    atomic_dec_and_test(&pid->count)) {
    kmem_cache_free(ns->pid_cachep, pid);
- if (ns != &init_pid_ns)
-   put_pid_ns(ns);
+ put_pid_ns(ns);
}
}
EXPORT_SYMBOL_GPL(put_pid);
@@ -243,9 +252,7 @@ struct pid *alloc_pid(struct pid_namespace
    tmp = tmp->parent;
}

- if (ns != &init_pid_ns)
-   get_pid_ns(ns);
-
+ get_pid_ns(ns);
    pid->level = ns->level;
    pid->nr = pid->numbers[0].nr;
    atomic_set(&pid->count, 1);

```
