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Subject: [PATCH 10/16] Changes in copy\_process() to work with pid namespaces  
Posted by [Pavel Emelianov](#) on Fri, 06 Jul 2007 08:08:40 GMT

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We must pass the namespace pointer to the alloc\_pid() to show what namespace to allocate the pid from and we should call this \*after\* the namespace is copied.

Essentially, the task->pid etc initialization is done after the alloc\_pid().

To do so I move the alloc\_pid() inside copy\_process() and introduce an argument to the alloc\_pid() function.

Signed-off-by: Pavel Emelianov <xemul@openvz.org>

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```
include/linux/pid.h | 2 +-  
kernel/fork.c      | 29 ++++++-----  
kernel/pid.c       | 2 +-  
3 files changed, 19 insertions(+), 14 deletions(-)
```

```
--- ./include/linux/pid.h.ve9 2007-07-06 11:03:55.000000000 +0400  
+++ ./include/linux/pid.h 2007-07-06 11:03:55.000000000 +0400  
@@ -116,7 +116,7 @@ extern struct pid *FASTCALL(find_pid_ns(  
extern struct pid *find_get_pid(int nr);  
extern struct pid *find_ge_pid(int nr, struct pid_namespace *);
```

```
-extern struct pid *alloc_pid(void);  
+extern struct pid *alloc_pid(struct pid_namespace *ns);  
extern void FASTCALL(free_pid(struct pid *pid));
```

```
/*
```

```
--- ./kernel/fork.c.ve9 2007-07-06 11:03:55.000000000 +0400  
+++ ./kernel/fork.c 2007-07-06 11:04:07.000000000 +0400  
@@ -50,6 +50,7 @@  
#include <linux/taskstats_kern.h>  
#include <linux/random.h>  
#include <linux/tty.h>  
+#include <linux/pid.h>  
  
#include <asm/pgtable.h>  
#include <asm/pgalloc.h>  
@@ -1032,7 +1033,6 @@ static struct task_struct *copy_process(  
p->did_exec = 0;  
delayacct_tsk_init(p); /* Must remain after dup_task_struct() */  
copy_flags(clone_flags, p);
```

```

- p->pid = pid_nr(pid);
  INIT_LIST_HEAD(&p->children);
  INIT_LIST_HEAD(&p->sibling);
  p->vfork_done = NULL;
@@ -1107,10 +1107,6 @@ static struct task_struct *copy_process(
  p->blocked_on = NULL; /* not blocked yet */
#endif

- p->tgid = p->pid;
- if (clone_flags & CLONE_THREAD)
- p->tgid = current->tgid;
-
  if ((retval = security_task_alloc(p)))
    goto bad_fork_cleanup_policy;
  if ((retval = audit_alloc(p)))
@@ -1132,9 +1128,14 @@ static struct task_struct *copy_process(
    goto bad_fork_cleanup_mm;
  if ((retval = copy_namespaces(clone_flags, p)))
    goto bad_fork_cleanup_keys;
+ if (likely(pid == NULL)) {
+ pid = alloc_pid(p->nsproxy->pid_ns);
+ if (pid == NULL)
+ goto bad_fork_cleanup_namespaces;
+ }
  retval = copy_thread(0, clone_flags, stack_start, stack_size, p, regs);
  if (retval)
- goto bad_fork_cleanup_namespaces;
+ goto bad_fork_cleanup_pid;

  p->set_child_tid = (clone_flags & CLONE_CHILD_SETTID) ? child_tidptr : NULL;
  /*
@@ -1255,6 +1256,11 @@ static struct task_struct *copy_process(
  }
  }

+ p->pid = pid_nr(pid);
+ p->tgid = p->pid;
+ if (clone_flags & CLONE_THREAD)
+ p->tgid = current->tgid;
+
+ if (likely(p->pid)) {
+ add_parent(p);
+ if (unlikely(p->ptrace & PT_PTRACED))
@@ -1288,6 +1294,8 @@ static struct task_struct *copy_process(
  proc_fork_connector(p);
  return p;

+bad_fork_cleanup_pid:

```

```

+ free_pid(pid);
bad_fork_cleanup_namespaces:
    exit_task_namespaces(p);
bad_fork_cleanup_keys:
@@ -1380,19 +1388,16 @@ long do_fork(unsigned long clone_flags,
{
    struct task_struct *p;
    int trace = 0;
- struct pid *pid = alloc_pid();
    long nr;

- if (!pid)
- return -EAGAIN;
- nr = pid->nr;
    if (unlikely(current->ptrace)) {
        trace = fork_traceflag (clone_flags);
        if (trace)
            clone_flags |= CLONE_PTRACE;
    }

- p = copy_process(clone_flags, stack_start, regs, stack_size, parent_tidptr, child_tidptr, pid);
+ p = copy_process(clone_flags, stack_start, regs, stack_size,
+ parent_tidptr, child_tidptr, NULL);
/*
 * Do this prior waking up the new thread - the thread pointer
 * might get invalid after that point, if the thread exits quickly.
@@ -1418,6 +1423,7 @@ long do_fork(unsigned long clone_flags,
    else
        p->state = TASK_STOPPED;

+ nr = pid_vnr(task_pid(p));
    if (unlikely (trace)) {
        current->ptrace_message = nr;
        ptrace_notify ((trace << 8) | SIGTRAP);
@@ -1433,7 +1439,6 @@ long do_fork(unsigned long clone_flags,
    }
}
} else {
- free_pid(pid);
    nr = PTR_ERR(p);
}
return nr;
--- ./kernel/pid.c.ve9 2007-07-06 11:03:55.000000000 +0400
+++ ./kernel/pid.c 2007-07-06 11:03:55.000000000 +0400
@@ -206,7 +206,7 @@ fastcall void free_pid(struct pid *pid)
    call_rcu(&pid->rcu, delayed_put_pid);
}

```

```
-struct pid *alloc_pid(void)
+struct pid *alloc_pid(struct pid_namespace *pid_ns)
{
    struct pid *pid;
    enum pid_type type;
```

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