Subject: Re: [PATCH 5/5] Move alloc_pid call to copy_process
Posted by Sukadev Bhattiprolu on Tue, 17 Jul 2007 17:47:57 GMT
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Oleg Nesterov [oleg@tv-sign.ru] wrote:
| On 07/16, sukadev@us.ibm.com wrote:
| >
| > Oleg Nesterov [oleg@tv-sign.ru] wrote:
| > |
| > | Could you please give more details why we need this change?
| >
| > Well, with multiple pid namespaces, we may need to allocate a new
| > 'struct pid_namespace' if the CLONE_NEWPID flag is specified. And
| > as a part of initializing this pid_namespace, we need the 'task_struct'
| > that will be the reaper of the new pid namespace.
| >
| > And this task_struct is allocated in copy_process(). So we could
| > still alloc_pid() in do_fork(), as we are doing currently and set
| > the reaper of the new pid_namespace later in copy_process(). But
| > that seemed to complicate error handling and add checks again in
| > copy_process() for the CLONE_NEWPID.
|
| OK, thanks.
|
| >
| > | Even if we really need this, can't we do these checks in copy_process() ?
| >
| > We could and I did have a check in copy_process() in one of my earlier
| > versions to Containers@ list. We thought it cluttered copy_process() a
| > bit.
|
| Yes, but having the "pid == &init_struct_pid" in free_pid() is imho worse,
|
| > container_exit(p, container_callbacks_done);
| > delayacct_tsk_free(p);
| > + free_pid(pid);
| > +bad_fork_put_binfmt_module:
| > [...snip...]
| > @@ -206,6 +206,10 @@ fastcall void free_pid(struct pid *pid)
| > /* We can be called with write_lock_irq(&tasklist_lock) held */
| > unsigned long flags;
| >
| > + /* check this here to keep copy_process() cleaner */
| > + if (unlikely(pid == &init_struct_pid))
| > + return;
| > +
|
| Wouldn't it better if copy_process()'s error path does

```
|
|  if (pid != &init_struct_pid)
|   free_pid(pid);
|
| instead? OK, "cleaner" is a matter of taste, but from the perfomance POV
| this would be better, even if not noticable.
```

Agree. I realized it too late last night. Here is a modified patch
(this checks init_struct_pid in both places now for better consistency)

Subject: [PATCH 5/5] Move alloc_pid call to copy_process

From: Sukadev Bhattiprolu <sukadev@us.ibm.com>

Move alloc_pid() into copy_process(). This will keep all pid and pid
namespace code together and simplify error handling when we support
multiple pid namespaces.

Signed-off-by: Sukadev Bhattiprolu <sukadev@us.ibm.com>

Cc: Pavel Emelianov <xemul@openvz.org>
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Cc: Dave Hansen <haveblue@us.ibm.com>
Cc: Serge Hallyn <serue@us.ibm.com>
Cc: Herbert Poetzel <herbert@13thfloor.at>
---
 kernel/fork.c | 19 +++++++++++++------
 1 file changed, 13 insertions(+), 6 deletions(-)

Index: lx26-22-rc6-mm1a/kernel/fork.c
==========
```
--- lx26-22-rc6-mm1a.orig/kernel/fork.c 2007-07-16 12:55:13.000000000 -0700
+++ lx26-22-rc6-mm1a/kernel/fork.c 2007-07-17 10:08:12.000000000 -0700
@@ -1029,6 +1029,12 @@ static struct task_struct *copy_process(
  if (p->binfmt && !try_module_get(p->binfmt->module))
   goto bad_fork_cleanup_put_domain;

+ if (pid != &init_struct_pid) {
+  pid = alloc_pid();
+  if (!pid)
+   goto bad_fork_put_binfmt_module;
+ }
+
  p->did_exec = 0;
  delayacct_tsk_init(p); /* Must remain after dup_task_struct() */
  copy_flags(clone_flags, p);
@@ -1316,6 +1322,9 @@ bad_fork_cleanup_container:
```

```
 #endif
  container_exit(p, container_callbacks_done);
  delayacct_tsk_free(p);
+ if (pid != &init_struct_pid)
+  free_pid(pid);
+bad_fork_put_binfmt_module:
  if (p->binfmt)
   module_put(p->binfmt->module);
 bad_fork_cleanup_put_domain:
@@ -1380,19 +1389,16 @@ 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.
@@ -1400,6 +1406,8 @@ long do_fork(unsigned long clone_flags,
  if (!IS_ERR(p)) {
   struct completion vfork;

+  nr = pid_nr(task_pid(p));
+
   if (clone_flags & CLONE_VFORK) {
    p->vfork_done = &vfork;
    init_completion(&vfork);
@@ -1433,7 +1441,6 @@ long do_fork(unsigned long clone_flags,
    }
   }
  } else {
-  free_pid(pid);
   nr = PTR_ERR(p);
  }
  return nr;
```

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