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Subject: [patch -mm 15/17] pid namespace: add unshare  
Posted by [Cedric Le Goater](#) on Tue, 05 Dec 2006 10:28:07 GMT  
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From: Cedric Le Goater <[clg@fr.ibm.com](mailto:clg@fr.ibm.com)>

Signed-off-by: Cedric Le Goater <[clg@fr.ibm.com](mailto:clg@fr.ibm.com)>

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```
include/linux/pid_namespace.h |  2 +  
kernel/nsproxy.c           | 25 ++++++-----  
kernel/pid.c               | 44 ++++++-----  
3 files changed, 68 insertions(+), 3 deletions(-)
```

Index: 2.6.19-rc6-mm2/include/linux/pid\_namespace.h

=====

```
--- 2.6.19-rc6-mm2.orig/include/linux/pid_namespace.h  
+++ 2.6.19-rc6-mm2/include/linux/pid_namespace.h  
@@ -29,6 +29,8 @@ static inline void get_pid_ns(struct pid  
    kref_get(&ns->kref);  
}  
  
+extern int unshare_pid_ns(unsigned long unshare_ns_flags,  
+  struct pid_namespace **new_pid);  
extern int copy_pid_ns(int flags, struct task_struct *tsk);  
extern void free_pid_ns(struct kref *kref);
```

Index: 2.6.19-rc6-mm2/kernel/pid.c

=====

```
--- 2.6.19-rc6-mm2.orig/kernel/pid.c  
+++ 2.6.19-rc6-mm2/kernel/pid.c  
@@ -361,6 +361,50 @@ struct pid *find_ge_pid(int nr)  
}  
EXPORT_SYMBOL_GPL(find_get_pid);  
  
+static struct pid_namespace *clone_pid_ns(struct pid_namespace *old_ns)  
+{  
+ struct pid_namespace *ns;  
+ int i;  
+  
+ ns = kmalloc(sizeof(struct pid_namespace), GFP_KERNEL);  
+ if (!ns)  
+ return ns;  
+  
+ kref_init(&ns->kref);  
+  
+ atomic_set(&ns->pidmap[0].nr_free, BITS_PER_PAGE - 1);  
+ ns->pidmap[0].page = kzalloc(PAGE_SIZE, GFP_KERNEL);  
+ if (!ns->pidmap[0].page) {
```

```

+ kfree(ns);
+ return NULL;
+
+ set_bit(0, ns->pidmap[0].page);
+
+ for (i = 1; i < PIDMAP_ENTRIES; i++) {
+ atomic_set(&ns->pidmap[i].nr_free, BITS_PER_PAGE);
+ ns->pidmap[i].page = NULL;
+
+ ns->last_pid = 0;
+ ns->child_reaper = current;
+ return ns;
+}
+
+int unshare_pid_ns(unsigned long unshare_ns_flags,
+ struct pid_namespace **new_pid)
+{
+ if (unshare_ns_flags & NS_PID) {
+ if (!capable(CAP_SYS_ADMIN))
+ return -EPERM;
+
+ *new_pid = clone_pid_ns(current->nsproxy->pid_ns);
+ if (!*new_pid)
+ return -ENOMEM;
+ }
+
+ return 0;
+}
+
int copy_pid_ns(int flags, struct task_struct *tsk)
{
    struct pid_namespace *old_ns = tsk->nsproxy->pid_ns;
Index: 2.6.19-rc6-mm2/kernel/nsproxy.c
=====
--- 2.6.19-rc6-mm2.orig/kernel/nsproxy.c
+++ 2.6.19-rc6-mm2/kernel/nsproxy.c
@@ @ -324,6 +324,11 @@ static int switch_ns(int id, unsigned lo
    put_ipc_ns(new_ns->ipc_ns);
    new_ns->ipc_ns = get_ipc_ns(ns->ipc_ns);
}
+ if (flags & NS_PID) {
+ get_pid_ns(ns->pid_ns);
+ put_pid_ns(new_ns->pid_ns);
+ new_ns->pid_ns = ns->pid_ns;
+
out_ns:
    put_nsproxy(ns);

```

```

}

@@ -440,6 +445,7 @@ @@ asmlinkage long sys_unshare_ns(unsigned
    struct mnt_namespace *mnt, *new_mnt = NULL;
    struct uts_namespace *uts, *new_uts = NULL;
    struct ipc_namespace *ipc, *new_ipc = NULL;
+   struct pid_namespace *pid, *new_pid = NULL;
    unsigned long unshare_flags = 0;

    /* Return -EINVAL for all unsupported flags */
@@ -467,16 +473,19 @@ @@ asmlinkage long sys_unshare_ns(unsigned
    if ((err = unshare_ipcs(unshare_flags, &new_ipc)))
        goto bad_unshare_ns_cleanup_uts;

-   if (new_mnt || new_uts || new_ipc) {
+   if ((err = unshare_pid_ns(unshare_ns_flags, &new_pid)))
+       goto bad_unshare_ns_cleanup_ipc;
+
+   if (new_mnt || new_uts || new_ipc || new_pid) {
        old_nsproxy = current->nsproxy;
        new_nsproxy = dup_namespaces(old_nsproxy);
        if (!new_nsproxy) {
            err = -ENOMEM;
-           goto bad_unshare_ns_cleanup_ipc;
+           goto bad_unshare_ns_cleanup_pid;
        }
    }

-   if (new_fs || new_mnt || new_uts || new_ipc) {
+   if (new_fs || new_mnt || new_uts || new_ipc || new_pid) {

        task_lock(current);

@@ -509,12 +518,22 @@ @@ asmlinkage long sys_unshare_ns(unsigned
        new_ipc = ipc;
    }

+   if (new_pid) {
+       pid = current->nsproxy->pid_ns;
+       current->nsproxy->pid_ns = new_pid;
+       new_pid = pid;
+   }
+
+   task_unlock(current);
}

if (new_nsproxy)
    put_nsproxy(new_nsproxy);

```

```
+bad_unshare_ns_cleanup_pid:  
+ if (new_pid)  
+ put_pid_ns(new_pid);  
+  
bad_unshare_ns_cleanup_ipc:  
if (new_ipc)  
put_ipc_ns(new_ipc);
```

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<https://lists.osdl.org/mailman/listinfo/containers>

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