Subject: [PATCH -mm 2/2] user namespace : add unshare
Posted by Cedric Le Goater on Fri, 08 Jun 2007 15:14:12 GMT
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Changelog: Fix !CONFIG_USER_NS clone with CLONE_NEWUSER so it returns -EINVAL
 rather than 0, so that userspace knows they didn't get a new user
 namespace.

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---

 include/linux/sched.h | 1
 include/linux/user_namespace.h | 4 +++
 kernel/fork.c | 2 -
 kernel/nsproxy.c | 5 ++--
 kernel/user_namespace.c | 46 ++-
 5 files changed, 54 insertions(+), 4 deletions(-)

Index: 2.6.22-rc4-mm2/include/linux/sched.h
===
--- 2.6.22-rc4-mm2.orig/include/linux/sched.h
+++ 2.6.22-rc4-mm2/include/linux/sched.h
@@ -25,6 +25,7 @@
 #define CLONE_STOPPED 0x02000000 /* Start in stopped state */
 #define CLONE_NEWUTS 0x04000000 /* New utsname group? */
 #define CLONE_NEWIPC 0x08000000 /* New ipcs */
+#define CLONE_NEWUSER 0x10000000 /* New user namespace */

 /*
  * Scheduling policies
Index: 2.6.22-rc4-mm2/include/linux/user_namespace.h
===
--- 2.6.22-rc4-mm2.orig/include/linux/user_namespace.h
+++ 2.6.22-rc4-mm2/include/linux/user_namespace.h
@@ -4,6 +4,7 @@
 #include <linux/kref.h>
 #include <linux/nsproxy.h>
 #include <linux/sched.h>
+#include <linux/err.h>

```
 #define UIDHASH_BITS (CONFIG_BASE_SMALL ? 3 : 8)
 #define UIDHASH_SZ (1 << UIDHASH_BITS)
@@ -45,6 +46,9 @@ static inline struct user_namespace *get
 static inline struct user_namespace *copy_user_ns(int flags,
        struct user_namespace *old_ns)
 {
+ if (flags & CLONE_NEWUSER)
+  return ERR_PTR(-EINVAL);
+
  return NULL;
 }

Index: 2.6.22-rc4-mm2/kernel/fork.c
===================================================================
--- 2.6.22-rc4-mm2.orig/kernel/fork.c
+++ 2.6.22-rc4-mm2/kernel/fork.c
@@ -1616,7 +1616,7 @@ asmlinkage long sys_unshare(unsigned lon
  err = -EINVAL;
  if (unshare_flags & ~(CLONE_THREAD|CLONE_FS|CLONE_NEWNS|CLONE_SIGHAND|
     CLONE_VM|CLONE_FILES|CLONE_SYSVSEM|
-    CLONE_NEWUTS|CLONE_NEWIPC))
+    CLONE_NEWUTS|CLONE_NEWIPC|CLONE_NEWUSER))
   goto bad_unshare_out;

  if ((err = unshare_thread(unshare_flags)))
Index: 2.6.22-rc4-mm2/kernel/nsproxy.c
===================================================================
--- 2.6.22-rc4-mm2.orig/kernel/nsproxy.c
+++ 2.6.22-rc4-mm2/kernel/nsproxy.c
@@ -117,7 +117,7 @@ int copy_namespaces(int flags, struct ta

  get_nsproxy(old_ns);

- if (!(flags & (CLONE_NEWNS | CLONE_NEWUTS | CLONE_NEWIPC)))
+ if (!(flags & (CLONE_NEWNS | CLONE_NEWUTS | CLONE_NEWIPC | CLONE_NEWUSER)))
   return 0;

  if (!capable(CAP_SYS_ADMIN)) {
@@ -163,7 +163,8 @@ int unshare_nsproxy_namespaces(unsigned
  struct nsproxy *old_ns = current->nsproxy;
  int err = 0;

- if (!(unshare_flags & (CLONE_NEWNS | CLONE_NEWUTS | CLONE_NEWIPC)))
+ if (!(unshare_flags & (CLONE_NEWNS | CLONE_NEWUTS | CLONE_NEWIPC |
+         CLONE_NEWUSER)))
   return 0;

  if (!capable(CAP_SYS_ADMIN))
```

```
Index: 2.6.22-rc4-mm2/kernel/user_namespace.c
===================================================================
--- 2.6.22-rc4-mm2.orig/kernel/user_namespace.c
+++ 2.6.22-rc4-mm2/kernel/user_namespace.c
@@ -21,6 +21,45 @@ EXPORT_SYMBOL_GPL(init_user_ns);

 #ifdef CONFIG_USER_NS

+/*
+ * Clone a new ns copying an original user ns, setting refcount to 1
+ * @old_ns: namespace to clone
+ * Return NULL on error (failure to kmalloc), new ns otherwise
+ */
+static struct user_namespace *clone_user_ns(struct user_namespace *old_ns)
+{
+ struct user_namespace *ns;
+ struct user_struct *new_user;
+ int n;
+
+ ns = kmalloc(sizeof(struct user_namespace), GFP_KERNEL);
+ if (!ns)
+  return NULL;
+
+ kref_init(&ns->kref);
+
+ for (n = 0; n < UIDHASH_SZ; ++n)
+  INIT_LIST_HEAD(ns->uidhash_table + n);
+
+ /* Insert new root user.  */
+ ns->root_user = alloc_uid(ns, 0);
+ if (!ns->root_user) {
+  kfree(ns);
+  return NULL;
+ }
+
+ /* Reset current->user with a new one */
+ new_user = alloc_uid(ns, current->uid);
+ if (!new_user) {
+  free_uid(ns->root_user);
+  kfree(ns);
+  return NULL;
+ }
+
+ switch_uid(new_user);
+ return ns;
+}
+
 struct user_namespace * copy_user_ns(int flags, struct user_namespace *old_ns)
```

```
 {
  struct user_namespace *new_ns;
@@ -28,7 +67,12 @@ struct user_namespace * copy_user_ns(int
  BUG_ON(!old_ns);
  get_user_ns(old_ns);

- new_ns = old_ns;
+ if (!(flags & CLONE_NEWUSER))
+  return old_ns;
+
+ new_ns = clone_user_ns(old_ns);
+
+ put_user_ns(old_ns);
  return new_ns;
 }
```

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