Subject: [RFC] Remove kern_mount() in init_devpts_fs()
Posted by Sukadev Bhattiprolu on Tue, 26 Feb 2008 00:46:40 GMT
View Forum Message <> Reply to Message

Is the kern_mount() of devpts really needed or can we simply register
the filesystem type and wait for an user-space mount before being able
to create PTYs ?

This is just an RFC patch that removes the kern_mount() and the 'devpts_mnt'
and 'devpts_root' global variables and uses a 'devpts_sb' to store the single
super block associated with devpts.

Removing the kern_mount() and relying on user-space mount could simplify
cloning of PTS namespaces.

```
---
 fs/devpts/inode.c |   49 ++++++++++++++++++++++++++++++--------------------
 1 file changed, 29 insertions(+), 20 deletions(-)

Index: linux-2.6.24/fs/devpts/inode.c
===================================================================
--- linux-2.6.24.orig/fs/devpts/inode.c 2008-02-22 14:23:53.000000000 -0800
+++ linux-2.6.24/fs/devpts/inode.c 2008-02-25 16:00:17.000000000 -0800
@@ -23,9 +23,6 @@

 #define DEVPTS_SUPER_MAGIC 0x1cd1

-static struct vfsmount *devpts_mnt;
-static struct dentry *devpts_root;
-
 static struct {
  int setuid;
  int setgid;
@@ -97,6 +94,7 @@ static const struct super_operations dev
  .remount_fs = devpts_remount,
 };

+static struct super_block *devpts_sb;
 static int
 devpts_fill_super(struct super_block *s, void *data, int silent)
 {
@@ -120,9 +118,11 @@ devpts_fill_super(struct super_block *s,
  inode->i_fop = &simple_dir_operations;
  inode->i_nlink = 2;

- devpts_root = s->s_root = d_alloc_root(inode);
- if (s->s_root)
```

```
+ s->s_root = d_alloc_root(inode);
+ if (s->s_root) {
+  devpts_sb = s;
   return 0;
+ }

  printk("devpts: get root dentry failed\n");
  iput(inode);
@@ -136,11 +136,17 @@ static int devpts_get_sb(struct file_sys
  return get_sb_single(fs_type, flags, data, devpts_fill_super, mnt);
 }

+static void devpts_kill_sb(struct super_block *sb)
+{
+ devpts_sb = NULL;
+ kill_anon_super(sb);
+}
+
 static struct file_system_type devpts_fs_type = {
  .owner  = THIS_MODULE,
  .name  = "devpts",
  .get_sb  = devpts_get_sb,
- .kill_sb = kill_anon_super,
+ .kill_sb = devpts_kill_sb,
 };

 /*
@@ -151,7 +157,12 @@ static struct file_system_type devpts_fs
 static struct dentry *get_node(int num)
 {
  char s[12];
- struct dentry *root = devpts_root;
+ struct dentry *root;
+
+ if (!devpts_sb)
+  return NULL;
+
+ root = devpts_sb->s_root;
  mutex_lock(&root->d_inode->i_mutex);
  return lookup_one_len(s, root, sprintf(s, "%d", num));
 }
@@ -162,7 +173,12 @@ int devpts_pty_new(struct tty_struct *tt
  struct tty_driver *driver = tty->driver;
  dev_t device = MKDEV(driver->major, driver->minor_start+number);
  struct dentry *dentry;
- struct inode *inode = new_inode(devpts_mnt->mnt_sb);
+ struct inode *inode;
+
```

```
+ if (!devpts_sb)
+  return -ENOSYS;
+
+ inode = new_inode(devpts_sb);

  /* We're supposed to be given the slave end of a pty */
  BUG_ON(driver->type != TTY_DRIVER_TYPE_PTY);
@@ -181,10 +197,10 @@ int devpts_pty_new(struct tty_struct *tt
  dentry = get_node(number);
  if (!IS_ERR(dentry) && !dentry->d_inode) {
   d_instantiate(dentry, inode);
-  fsnotify_create(devpts_root->d_inode, dentry);
+  fsnotify_create(devpts_sb->s_root->d_inode, dentry);
  }

- mutex_unlock(&devpts_root->d_inode->i_mutex);
+ mutex_unlock(&devpts_sb->s_root->d_inode->i_mutex);

  return 0;
 }
@@ -201,7 +217,7 @@ struct tty_struct *devpts_get_tty(int nu
   dput(dentry);
  }

- mutex_unlock(&devpts_root->d_inode->i_mutex);
+ mutex_unlock(&devpts_sb->s_root->d_inode->i_mutex);

  return tty;
 }
@@ -219,24 +235,17 @@ void devpts_pty_kill(int number)
   }
   dput(dentry);
  }
- mutex_unlock(&devpts_root->d_inode->i_mutex);
+ mutex_unlock(&devpts_sb->s_root->d_inode->i_mutex);
 }

 static int __init init_devpts_fs(void)
 {
- int err = register_filesystem(&devpts_fs_type);
- if (!err) {
-  devpts_mnt = kern_mount(&devpts_fs_type);
-  if (IS_ERR(devpts_mnt))
-   err = PTR_ERR(devpts_mnt);
- }
- return err;
+ return register_filesystem(&devpts_fs_type);
 }
```

```
 static void __exit exit_devpts_fs(void)
 {
  unregister_filesystem(&devpts_fs_type);
- mntput(devpts_mnt);
 }

 module_init(init_devpts_fs)
```

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