Subject: [RFC][PATCH 2/3] Replace pid_t in autofs4 with struct pid reference
Posted by Sukadev Bhattiprolu on Thu, 25 Jan 2007 03:54:30 GMT
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ChangeLog:
- Fix Eric Biederman's comments - Use find_get_pid() to hold a
  reference to oz_pgrp and release while unmounting; separate out
  changes to autofs and autofs4.
- Also rollback my earlier change to autofs_wait_queue (pid and tgid
  in the wait queue are just used to write to a userspace daemon's
  pipe).

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

Subject: Replace pid_t in autofs4 with struct pid reference.

Make autofs4 container-friendly by caching struct pid reference rather
than pid_t.

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---
 fs/autofs4/autofs_i.h | 6 +++---
 fs/autofs4/inode.c | 29 ++++++++++++++++++++---------
 fs/autofs4/root.c | 3 ++-
 fs/autofs4/waitq.c | 4 ++--
 4 files changed, 27 insertions(+), 15 deletions(-)

Index: lx26-20-rc4-mm1/fs/autofs4/autofs_i.h
===
--- lx26-20-rc4-mm1.orig/fs/autofs4/autofs_i.h 2007-01-24 18:39:28.172066416 -0800
+++ lx26-20-rc4-mm1/fs/autofs4/autofs_i.h 2007-01-24 18:41:56.260553544 -0800
@@ -35,7 +35,7 @@
 /* #define DEBUG */

 #ifdef DEBUG
-#define DPRINTK(fmt,args...) do { printk(KERN_DEBUG "pid %d: %s: " fmt "\n" , current->pid ,
__FUNCTION__ , ##args); } while(0)
+#define DPRINTK(fmt,args...) do { printk(KERN_DEBUG "pid %d: %s: " fmt "\n" ,
pid_nr(task_pid(current)), __FUNCTION__ , ##args); } while(0)
 #else
 #define DPRINTK(fmt,args...) do {} while(0)
 #endif

```
@@ -96,7 +96,7 @@ struct autofs_sb_info {
  u32 magic;
  int pipefd;
  struct file *pipe;
- pid_t oz_pgrp;
+ struct pid *oz_pgrp;
  int catatonic;
  int version;
  int sub_version;
@@ -127,7 +127,7 @@ static inline struct autofs_info *autofs
    filesystem without "magic".) */

 static inline int autofs4_oz_mode(struct autofs_sb_info *sbi) {
- return sbi->catatonic || process_group(current) == sbi->oz_pgrp;
+ return sbi->catatonic || task_pgrp(current) == sbi->oz_pgrp;
 }

 /* Does a dentry have some pending activity? */
Index: lx26-20-rc4-mm1/fs/autofs4/inode.c
===================================================================
--- lx26-20-rc4-mm1.orig/fs/autofs4/inode.c 2007-01-24 18:39:28.173066264 -0800
+++ lx26-20-rc4-mm1/fs/autofs4/inode.c 2007-01-24 18:44:56.311181688 -0800
@@ -163,6 +163,8 @@ void autofs4_kill_sb(struct super_block
  if ( !sbi->catatonic )
   autofs4_catatonic_mode(sbi); /* Free wait queues, close pipe */

+ put_pid(sbi->oz_pgrp);
+
  /* Clean up and release dangling references */
  autofs4_force_release(sbi);

@@ -181,7 +183,7 @@ static int autofs4_show_options(struct s
   return 0;

  seq_printf(m, ",fd=%d", sbi->pipefd);
- seq_printf(m, ",pgrp=%d", sbi->oz_pgrp);
+ seq_printf(m, ",pgrp=%d", pid_nr(sbi->oz_pgrp));
  seq_printf(m, ",timeout=%lu", sbi->exp_timeout/HZ);
  seq_printf(m, ",minproto=%d", sbi->min_proto);
  seq_printf(m, ",maxproto=%d", sbi->max_proto);
@@ -218,16 +220,17 @@ static match_table_t tokens = {
 };

 static int parse_options(char *options, int *pipefd, uid_t *uid, gid_t *gid,
-    pid_t *pgrp, unsigned int *type,
+    struct pid **pgrp, unsigned int *type,
     int *minproto, int *maxproto)
 {
```

```
  char *p;
  substring_t args[MAX_OPT_ARGS];
  int option;
+ pid_t pgid;

  *uid = current->uid;
  *gid = current->gid;
- *pgrp = process_group(current);
+ pgid = process_group(current);

  *minproto = AUTOFS_MIN_PROTO_VERSION;
  *maxproto = AUTOFS_MAX_PROTO_VERSION;
@@ -261,7 +264,7 @@ static int parse_options(char *options,
   case Opt_pgrp:
    if (match_int(args, &option))
     return 1;
-   *pgrp = option;
+   pgid = option;
    break;
   case Opt_minproto:
    if (match_int(args, &option))
@@ -286,7 +289,13 @@ static int parse_options(char *options,
    return 1;
   }
  }
- return (*pipefd < 0);
+
+ if (*pipefd < 0)
+  return 1;
+
+ *pgrp = find_get_pid(pgid);
+
+ return (*pgrp == NULL);
 }

 static struct autofs_info *autofs4_mkroot(struct autofs_sb_info *sbi)
@@ -326,7 +335,7 @@ int autofs4_fill_super(struct super_bloc
  sbi->pipe = NULL;
  sbi->catatonic = 1;
  sbi->exp_timeout = 0;
- sbi->oz_pgrp = process_group(current);
+ sbi->oz_pgrp = NULL;
  sbi->sb = s;
  sbi->version = 0;
  sbi->sub_version = 0;
@@ -381,7 +390,7 @@ int autofs4_fill_super(struct super_bloc
         "daemon (%d, %d) kernel (%d, %d)\n",
    sbi->min_proto, sbi->max_proto,
```

```
    AUTOFS_MIN_PROTO_VERSION, AUTOFS_MAX_PROTO_VERSION);
-  goto fail_dput;
+  goto fail_put_pid;
  }

  /* Establish highest kernel protocol version */
@@ -391,12 +400,12 @@ int autofs4_fill_super(struct super_bloc
   sbi->version = sbi->max_proto;
  sbi->sub_version = AUTOFS_PROTO_SUBVERSION;

- DPRINTK("pipe fd = %d, pgrp = %u", pipefd, sbi->oz_pgrp);
+ DPRINTK("pipe fd = %d, pgrp = %u", pipefd, pid_nr(sbi->oz_pgrp));
  pipe = fget(pipefd);

  if ( !pipe ) {
   printk("autofs: could not open pipe file descriptor\n");
-  goto fail_dput;
+  goto fail_put_pid;
  }
  if ( !pipe->f_op || !pipe->f_op->write )
   goto fail_fput;
@@ -417,6 +426,8 @@ fail_fput:
  printk("autofs: pipe file descriptor does not contain proper ops\n");
  fput(pipe);
  /* fall through */
+fail_put_pid:
+ put_pid(sbi->oz_pgrp);
 fail_dput:
  dput(root);
  goto fail_free;
Index: lx26-20-rc4-mm1/fs/autofs4/root.c
===================================================================
--- lx26-20-rc4-mm1.orig/fs/autofs4/root.c 2007-01-24 18:39:28.173066264 -0800
+++ lx26-20-rc4-mm1/fs/autofs4/root.c 2007-01-24 18:44:56.310181840 -0800
@@ -495,7 +495,8 @@ static struct dentry *autofs4_lookup(str
  oz_mode = autofs4_oz_mode(sbi);

  DPRINTK("pid = %u, pgrp = %u, catatonic = %d, oz_mode = %d",
-   current->pid, process_group(current), sbi->catatonic, oz_mode);
+   pid_nr(task_pid(current)), process_group(current),
+   sbi->catatonic, oz_mode);

  /*
   * Mark the dentry incomplete, but add it. This is needed so
Index: lx26-20-rc4-mm1/fs/autofs4/waitq.c
===================================================================
--- lx26-20-rc4-mm1.orig/fs/autofs4/waitq.c 2007-01-24 18:39:28.173066264 -0800
+++ lx26-20-rc4-mm1/fs/autofs4/waitq.c 2007-01-24 18:41:56.262553240 -0800
```

```
@@ -292,8 +292,8 @@ int autofs4_wait(struct autofs_sb_info *
   wq->ino = autofs4_get_ino(sbi);
   wq->uid = current->uid;
   wq->gid = current->gid;
-  wq->pid = current->pid;
-  wq->tgid = current->tgid;
+  wq->pid = pid_nr(task_pid(current));
+  wq->tgid = pid_nr(task_tgid(current));
   wq->status = -EINTR; /* Status return if interrupted */
   atomic_set(&wq->wait_ctr, 2);
   mutex_unlock(&sbi->wq_mutex);
```

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