Subject: [PATCH 1/5] statically initialize struct pid for swappe
Posted by Sukadev Bhattiprolu on Thu, 01 Mar 2007 03:56:03 GMT
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From: Sukadev Bhattiprolu <sukadev@us.ibm.com>
Subject: [PATCH 1/5] statically initialize struct pid for swapper

Statically initialize a struct pid for the swapper process (pid_t == 0) and
attach it to init_task. This is needed so task_pid(), task_pgrp() and
task_session() interfaces work on the swapper process also.

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include/linux/init_task.h | 27 ++++++++++++++++++++++++++
include/linux/pid.h | 2 ++
kernel/pid.c | 2 ++
3 files changed, 31 insertions(+)

Index: lx26-20-mm2c/include/linux/init_task.h
===
--- lx26-20-mm2c.orig/include/linux/init_task.h 2007-02-28 15:47:44.000000000 -0800
+++ lx26-20-mm2c/include/linux/init_task.h 2007-02-28 15:48:07.000000000 -0800
@@ -96,6 +96,28 @@ extern struct group_info init_groups;
#define INIT_PREEMPT_RCU
#endif

+#define INIT_STRUCT_PID { \
+ .count = ATOMIC_INIT(1), \
+ .nr = 0, \
+ /* Don't put this struct pid in pid_hash */ \
+ .pid_chain = { .next = NULL, .pprev = NULL }, \
+ .tasks = { \
+ { .first = &init_task.pids[PIDTYPE_PID].node }, \
+ { .first = &init_task.pids[PIDTYPE_PGID].node }, \
+ { .first = &init_task.pids[PIDTYPE_SID].node }, \
+ }, \
+ .rcu = RCU_HEAD_INIT, \
+}
+
+#define INIT_PID_LINK(type) \

```
+{       \
+ .node = {      \
+  .next = NULL,     \
+  .pprev = &init_struct_pid.tasks[type].first, \
+ },       \
+ .pid = &init_struct_pid,    \
+}
+
 /*
  *  INIT_TASK is used to set up the first task table, touch at
  * your own risk!. Base=0, limit=0x1fffff (=2MB)
@@ -145,6 +167,11 @@ extern struct group_info init_groups;
  .cpu_timers = INIT_CPU_TIMERS(tsk.cpu_timers),  \
  .fs_excl = ATOMIC_INIT(0),    \
  .pi_lock = SPIN_LOCK_UNLOCKED,    \
+ .pids = {       \
+  [PIDTYPE_PID]  = INIT_PID_LINK(PIDTYPE_PID),  \
+  [PIDTYPE_PGID] = INIT_PID_LINK(PIDTYPE_PGID),  \
+  [PIDTYPE_SID]  = INIT_PID_LINK(PIDTYPE_SID),  \
+ },       \
  INIT_TRACE_IRQFLAGS      \
  INIT_LOCKDEP       \
 }
Index: lx26-20-mm2c/include/linux/pid.h
===================================================================
--- lx26-20-mm2c.orig/include/linux/pid.h 2007-02-28 15:48:07.000000000 -0800
+++ lx26-20-mm2c/include/linux/pid.h 2007-02-28 15:48:07.000000000 -0800
@@ -51,6 +51,8 @@ struct pid
  struct rcu_head rcu;
 };

+extern struct pid init_struct_pid;
+
 struct pid_link
 {
  struct hlist_node node;
Index: lx26-20-mm2c/kernel/pid.c
===================================================================
--- lx26-20-mm2c.orig/kernel/pid.c 2007-02-28 15:48:07.000000000 -0800
+++ lx26-20-mm2c/kernel/pid.c 2007-02-28 15:48:07.000000000 -0800
@@ -27,11 +27,13 @@
 #include <linux/bootmem.h>
 #include <linux/hash.h>
 #include <linux/pid_namespace.h>
+#include <linux/init_task.h>

 #define pid_hashfn(nr) hash_long((unsigned long)nr, pidhash_shift)
 static struct hlist_head *pid_hash;
```

```
 static int pidhash_shift;
 static struct kmem_cache *pid_cachep;
+struct pid init_struct_pid = INIT_STRUCT_PID;

 int pid_max = PID_MAX_DEFAULT;
```

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