
Subject: + statically-initialize-struct-pid-for-swapper.patch added to -mm tree
Posted by [Andrew Morton](#) on Wed, 24 Jan 2007 09:00:39 GMT

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The patch titled

Statically initialize struct pid for swapper
has been added to the -mm tree. Its filename is
statically-initialize-struct-pid-for-swapper.patch

*** Remember to use Documentation/SubmitChecklist when testing your code ***

See <http://www.zip.com.au/~akpm/linux/patches/stuff/added-to-mm.txt> to find
out what to do about this

Subject: Statically initialize struct pid for swapper
From: Sukadev Bhattiprolu <sukadev@us.ibm.com>

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(+)
```

```
diff -puN include/linux/init_task.h~statically-initialize-struct-pid-for-swapper include/linux/init_task.h
--- a/include/linux/init_task.h~statically-initialize-struct-pid-for-swapper
+++ a/include/linux/init_task.h
@@ -90,6 +90,28 @@ extern struct nsproxy init_nsproxy;
```

```
extern struct group_info init_groups;
```

```
+#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)
@@ -141,6 +163,11 @@ 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 \
}
diff -puN include/linux/pid.h~statically-initialize-struct-pid-for-swapper include/linux/pid.h
--- a/include/linux/pid.h~statically-initialize-struct-pid-for-swapper
+++ a/include/linux/pid.h
@@ -51,6 +51,8 @@ struct pid
 struct rcu_head rcu;
};

+extern struct pid init_struct_pid;
+
 struct pid_link
 {
 struct hlist_node node;
diff -puN kernel/pid.c~statically-initialize-struct-pid-for-swapper kernel/pid.c
--- a/kernel/pid.c~statically-initialize-struct-pid-for-swapper
+++ a/kernel/pid.c

```

```
@@ -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_cache;
+struct pid init_struct_pid = INIT_STRUCT_PID;

int pid_max = PID_MAX_DEFAULT;
```

—
Patches currently in -mm which might be from sukadev@us.ibm.com are

```
rename-attach_pid-to-find_attach_pid.patch
attach_pid-with-struct-pid-parameter.patch
remove-find_attach_pid.patch
statically-initialize-struct-pid-for-swapper.patch
```

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