
Subject: [patch 40/68] statically initialize struct pid for swapper
Posted by [akpm](#) on Fri, 11 May 2007 05:23:00 GMT
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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.

Signed-off-by: Sukadev Bhattiprolu <sukadev@us.ibm.com>

Cc: Cedric Le Goater <clg@fr.ibm.com>

Cc: Dave Hansen <haveblue@us.ibm.com>

Cc: Serge Hallyn <serue@us.ibm.com>

Cc: Eric Biederman <ebiederm@xmission.com>

Cc: Herbert Poetzl <herbert@13thfloor.at>

Cc: <containers@lists.osdl.org>

Acked-by: Eric W. Biederman <ebiederm@xmission.com>

Signed-off-by: Andrew Morton <akpm@linux-foundation.org>

```
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
@@ -88,6 +88,28 @@ 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)
@@ -139,6 +161,11 @@ extern struct group_info init_groups;
+ .cpu_timers = INIT_CPU_TIMERS(tsk.cpu_timers), \
+ .fs_excl = ATOMIC_INIT(0),    \
+ .pi_lock = __SPIN_LOCK_UNLOCKED(tsk.pi_lock), \
+ .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_cachep;
+ struct pid init_struct_pid = INIT_STRUCT_PID;

```

```
int pid_max = PID_MAX_DEFAULT;
```

—

Containers mailing list

Containers@lists.linux-foundation.org

<https://lists.linux-foundation.org/mailman/listinfo/containers>
