Subject: [PATCH 2/8] Scaling msgmni to the number of ipc namespaces
Posted by Nadia Derbey on Mon, 11 Feb 2008 14:16:48 GMT
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[PATCH 02/08]

Since all the namespaces see the same amount of memory (the total one)
this patch introduces a new variable that counts the ipc namespaces and
divides msg_ctlmni by this counter.

Signed-off-by: Nadia Derbey <Nadia.Derbey@bull.net>

---
 include/linux/ipc_namespace.h | 1 +
 ipc/msg.c | 10 +++++++---
 ipc/namespace.c | 3 +++
 ipc/util.c | 3 +++
 4 files changed, 14 insertions(+), 3 deletions(-)

Index: linux-2.6.24-mm1/include/linux/ipc_namespace.h
===
--- linux-2.6.24-mm1.orig/include/linux/ipc_namespace.h 2008-02-07 15:00:43.000000000 +0100
+++ linux-2.6.24-mm1/include/linux/ipc_namespace.h 2008-02-07 15:26:53.000000000 +0100
@@ -33,6 +33,7 @@ struct ipc_namespace {
 };

 extern struct ipc_namespace init_ipc_ns;
+extern atomic_t nr_ipc_ns;

 #ifdef CONFIG_SYSVIPC
 #define INIT_IPC_NS(ns) .ns = &init_ipc_ns,
Index: linux-2.6.24-mm1/ipc/util.c
===
--- linux-2.6.24-mm1.orig/ipc/util.c 2008-02-07 13:41:07.000000000 +0100
+++ linux-2.6.24-mm1/ipc/util.c 2008-02-07 15:36:22.000000000 +0100
@@ -52,6 +52,9 @@ struct ipc_namespace init_ipc_ns = {
  },
 };

+atomic_t nr_ipc_ns = ATOMIC_INIT(1);
+
+
 /**
  * ipc_init - initialise IPC subsystem
  *
Index: linux-2.6.24-mm1/ipc/namespace.c
===
--- linux-2.6.24-mm1.orig/ipc/namespace.c 2008-02-07 13:41:07.000000000 +0100

```
+++ linux-2.6.24-mm1/ipc/namespace.c 2008-02-07 15:40:19.000000000 +0100
@@ -20,6 +20,8 @@ static struct ipc_namespace *clone_ipc_n
  if (ns == NULL)
   return ERR_PTR(-ENOMEM);

+ atomic_inc(&nr_ipc_ns);
+
  sem_init_ns(ns);
  msg_init_ns(ns);
  shm_init_ns(ns);
@@ -83,4 +85,5 @@ void free_ipc_ns(struct kref *kref)
  msg_exit_ns(ns);
  shm_exit_ns(ns);
  kfree(ns);
+ atomic_dec(&nr_ipc_ns);
 }
Index: linux-2.6.24-mm1/ipc/msg.c
===================================================================
--- linux-2.6.24-mm1.orig/ipc/msg.c 2008-02-07 15:24:19.000000000 +0100
+++ linux-2.6.24-mm1/ipc/msg.c 2008-02-07 15:43:51.000000000 +0100
@@ -82,24 +82,28 @@ static int sysvipc_msg_proc_show(struct
 /*
  * Scale msgmni with the available lowmem size: the memory dedicated to msg
  * queues should occupy at most 1/MSG_MEM_SCALE of lowmem.
- * This should be done staying within the (MSGMNI , IPCMNI) range.
+ * Also take into account the number of nsproxies created so far.
+ * This should be done staying within the (MSGMNI , IPCMNI/nr_ipc_ns) range.
  */
 static void recompute_msgmni(struct ipc_namespace *ns)
 {
  struct sysinfo i;
  unsigned long allowed;
+ int nb_ns;

  si_meminfo(&i);
  allowed = (((i.totalram - i.totalhigh) / MSG_MEM_SCALE) * i.mem_unit)
   / MSGMNB;
+ nb_ns = atomic_read(&nr_ipc_ns);
+ allowed /= nb_ns;

  if (allowed < MSGMNI) {
   ns->msg_ctlmni = MSGMNI;
   goto out_callback;
  }

- if (allowed > IPCMNI) {
-  ns->msg_ctlmni = IPCMNI;
+ if (allowed > IPCMNI / nb_ns) {
```

```
+  ns->msg_ctlmni = IPCMNI / nb_ns;
   goto out_callback;
  }
```

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