Subject: [PATCH 6/6] IPC namespace - sysctls
Posted by Kirill Korotaev on Fri, 09 Jun 2006 15:11:07 GMT
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Sysctl tweaks for IPC namespace

Signed-Off-By: Pavel Emelianiov <xemul@openvz.org>
Signed-Off-By: Kirill Korotaev <dev@openvz.org>

```
--- ./kernel/sysctl.c.ipcns 2006-06-06 14:47:59.000000000 +0400
+++ ./kernel/sysctl.c 2006-06-08 15:29:58.000000000 +0400
@@ -104,13 +104,8 @@ extern char modprobe_path[];
 extern int sg_big_buff;
 #endif
 #ifdef CONFIG_SYSVIPC
-extern size_t shm_ctlmax;
-extern size_t shm_ctlall;
-extern int shm_ctlmni;
-extern int msg_ctlmax;
-extern int msg_ctlmnb;
-extern int msg_ctlmni;
-extern int sem_ctls[];
+static int proc_do_ipc_string(ctl_table *table, int write, struct file *filp,
+  void __user *buffer, size_t *lenp, loff_t *ppos);
 #endif

 #ifdef __sparc__
@@ -510,58 +505,58 @@ static ctl_table kern_table[] = {
  {
   .ctl_name = KERN_SHMMAX,
   .procname = "shmmax",
-  .data  = &shm_ctlmax,
+  .data  = NULL,
   .maxlen  = sizeof (size_t),
   .mode  = 0644,
-  .proc_handler = &proc_doulongvec_minmax,
+  .proc_handler = &proc_do_ipc_string,
  },
  {
   .ctl_name = KERN_SHMALL,
   .procname = "shmall",
-  .data  = &shm_ctlall,
+  .data  = NULL,
   .maxlen  = sizeof (size_t),
   .mode  = 0644,
-  .proc_handler = &proc_doulongvec_minmax,
+  .proc_handler = &proc_do_ipc_string,
  },
```

```
  {
   .ctl_name = KERN_SHMMNI,
   .procname = "shmmni",
-  .data  = &shm_ctlmni,
+  .data  = NULL,
   .maxlen  = sizeof (int),
   .mode  = 0644,
-  .proc_handler = &proc_dointvec,
+  .proc_handler = &proc_do_ipc_string,
  },
  {
   .ctl_name = KERN_MSGMAX,
   .procname = "msgmax",
-  .data  = &msg_ctlmax,
+  .data  = NULL,
   .maxlen  = sizeof (int),
   .mode  = 0644,
-  .proc_handler = &proc_dointvec,
+  .proc_handler = &proc_do_ipc_string,
  },
  {
   .ctl_name = KERN_MSGMNI,
   .procname = "msgmni",
-  .data  = &msg_ctlmni,
+  .data  = NULL,
   .maxlen  = sizeof (int),
   .mode  = 0644,
-  .proc_handler = &proc_dointvec,
+  .proc_handler = &proc_do_ipc_string,
  },
  {
   .ctl_name = KERN_MSGMNB,
   .procname =  "msgmnb",
-  .data  = &msg_ctlmnb,
+  .data  = NULL,
   .maxlen  = sizeof (int),
   .mode  = 0644,
-  .proc_handler = &proc_dointvec,
+  .proc_handler = &proc_do_ipc_string,
  },
  {
   .ctl_name = KERN_SEM,
   .procname = "sem",
-  .data  = &sem_ctls,
+  .data  = NULL,
   .maxlen  = 4*sizeof (int),
   .mode  = 0644,
-  .proc_handler = &proc_dointvec,
```

```
+  .proc_handler = &proc_do_ipc_string,
  },
 #endif
 #ifdef CONFIG_MAGIC_SYSRQ
@@ -1866,8 +1861,9 @@ static int do_proc_dointvec_conv(int *ne
  return 0;
 }

-static int do_proc_dointvec(ctl_table *table, int write, struct file *filp,
-    void __user *buffer, size_t *lenp, loff_t *ppos,
+static int __do_proc_dointvec(void *tbl_data, ctl_table *table,
+    int write, struct file *filp, void __user *buffer,
+    size_t *lenp, loff_t *ppos,
     int (*conv)(int *negp, unsigned long *lvalp, int *valp,
         int write, void *data),
     void *data)
@@ -1880,13 +1876,13 @@ static int do_proc_dointvec(ctl_table *t
  char buf[TMPBUFLEN], *p;
  char __user *s = buffer;

- if (!table->data || !table->maxlen || !*lenp ||
+ if (!tbl_data || !table->maxlen || !*lenp ||
      (*ppos && !write)) {
   *lenp = 0;
   return 0;
  }

- i = (int *) table->data;
+ i = (int *) tbl_data;
  vleft = table->maxlen / sizeof(*i);
  left = *lenp;

@@ -1975,6 +1971,16 @@ static int do_proc_dointvec(ctl_table *t
 #undef TMPBUFLEN
 }

+static int do_proc_dointvec(ctl_table *table, int write, struct file *filp,
+    void __user *buffer, size_t *lenp, loff_t *ppos,
+    int (*conv)(int *negp, unsigned long *lvalp, int *valp,
+        int write, void *data),
+    void *data)
+{
+ return __do_proc_dointvec(table->data, table, write, filp,
+   buffer, lenp, ppos, conv, data);
+}
+
 /**
  * proc_dointvec - read a vector of integers
```

```
  * @table: the sysctl table
@@ -2108,7 +2114,7 @@ int proc_dointvec_minmax(ctl_table *tabl
     do_proc_dointvec_minmax_conv, &param);
 }

-static int do_proc_doulongvec_minmax(ctl_table *table, int write,
+static int __do_proc_doulongvec_minmax(void *data, ctl_table *table, int write,
          struct file *filp,
          void __user *buffer,
          size_t *lenp, loff_t *ppos,
@@ -2122,13 +2128,13 @@ static int do_proc_doulongvec_minmax(ctl
  char buf[TMPBUFLEN], *p;
  char __user *s = buffer;

- if (!table->data || !table->maxlen || !*lenp ||
+ if (!data || !table->maxlen || !*lenp ||
      (*ppos && !write)) {
   *lenp = 0;
   return 0;
  }

- i = (unsigned long *) table->data;
+ i = (unsigned long *) data;
  min = (unsigned long *) table->extra1;
  max = (unsigned long *) table->extra2;
  vleft = table->maxlen / sizeof(unsigned long);
@@ -2213,6 +2219,17 @@ static int do_proc_doulongvec_minmax(ctl
 #undef TMPBUFLEN
 }

+static int do_proc_doulongvec_minmax(ctl_table *table, int write,
+         struct file *filp,
+         void __user *buffer,
+         size_t *lenp, loff_t *ppos,
+         unsigned long convmul,
+         unsigned long convdiv)
+{
+ return __do_proc_doulongvec_minmax(table->data, table, write,
+   filp, buffer, lenp, ppos, convmul, convdiv);
+}
+
 /**
  * proc_doulongvec_minmax - read a vector of long integers with min/max values
  * @table: the sysctl table
@@ -2401,6 +2418,49 @@ int proc_dointvec_ms_jiffies(ctl_table *
     do_proc_dointvec_ms_jiffies_conv, NULL);
 }
```

```
+#ifdef CONFIG_SYSVIPC
+static int proc_do_ipc_string(ctl_table *table, int write, struct file *filp,
+  void __user *buffer, size_t *lenp, loff_t *ppos)
+{
+ void *data;
+ struct ipc_namespace *ns;
+
+ ns = current->nsproxy->ipc_ns;
+
+ switch (table->ctl_name) {
+ case KERN_SHMMAX:
+  data = &ns->shm_ctlmax;
+  goto proc_minmax;
+ case KERN_SHMALL:
+  data = &ns->shm_ctlall;
+  goto proc_minmax;
+ case KERN_SHMMNI:
+  data = &ns->shm_ctlmni;
+  break;
+ case KERN_MSGMAX:
+  data = &ns->msg_ctlmax;
+  break;
+ case KERN_MSGMNI:
+  data = &ns->msg_ctlmni;
+  break;
+ case KERN_MSGMNB:
+  data = &ns->msg_ctlmnb;
+  break;
+ case KERN_SEM:
+  data = &ns->sem_ctls;
+  break;
+ default:
+  return -EINVAL;
+ }
+
+ return __do_proc_dointvec(data, table, write, filp, buffer,
+   lenp, ppos, NULL, NULL);
+proc_minmax:
+ return __do_proc_doulongvec_minmax(data, table, write, filp, buffer,
+   lenp, ppos, 1l, 1l);
+}
+#endif
+
 #else /* CONFIG_PROC_FS */

 int proc_dostring(ctl_table *table, int write, struct file *filp,
```