Subject: [PATCH v6 07/10] ipc: add new SEM_SET command for sys_semctl() call
Posted by Stanislav Kinsbursky on Mon, 15 Oct 2012 16:00:12 GMT
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New SEM_SET command will be interpreted exactly as IPC_SET, but also will
update key, cuid and cgid values. IOW, it allows to change existent key value.
The fact, that key is not used is checked before update. Otherwise -EEXIST is
returned.

Signed-off-by: Stanislav Kinsbursky <skinsbursky@parallels.com>
---
 include/uapi/linux/sem.h | 1 +
 ipc/compat.c | 1 +
 ipc/sem.c | 10 ++++++++--
 security/selinux/hooks.c | 1 +
 security/smack/smack_lsm.c | 1 +
 5 files changed, 12 insertions(+), 2 deletions(-)

diff --git a/include/uapi/linux/sem.h b/include/uapi/linux/sem.h
index 541fce0..b6ae374 100644
--- a/include/uapi/linux/sem.h
+++ b/include/uapi/linux/sem.h
@@ -18,6 +18,7 @@
 /* ipcs ctl cmds */
 #define SEM_STAT 18
 #define SEM_INFO 19
+#define SEM_SET 20

 /* Obsolete, used only for backwards compatibility and libc5 compiles */
 struct semid_ds {
diff --git a/ipc/compat.c b/ipc/compat.c
index 9c70f9a..84d8efd 100644
--- a/ipc/compat.c
+++ b/ipc/compat.c
@@ -290,6 +290,7 @@ static long do_compat_semctl(int first, int second, int third, u32 pad)
   break;

  case IPC_SET:
+ case SEM_SET:
   if (version == IPC_64) {
    err = get_compat_semid64_ds(&s64, compat_ptr(pad));
   } else {
diff --git a/ipc/sem.c b/ipc/sem.c
index 10e9085..3eac885 100644
--- a/ipc/sem.c
+++ b/ipc/sem.c
@@ -1085,12 +1085,13 @@ static int semctl_down(struct ipc_namespace *ns, int semid,
  struct semid64_ds semid64;

```
  struct kern_ipc_perm *ipcp;

- if(cmd == IPC_SET) {
+ if (cmd == IPC_SET || cmd == SEM_SET) {
    if (copy_semid_from_user(&semid64, arg.buf, version))
     return -EFAULT;
  }

- ipcp = ipcctl_pre_down(ns, &sem_ids(ns), semid, cmd,
+ ipcp = ipcctl_pre_down(ns, &sem_ids(ns), semid,
+           (cmd != SEM_SET) ? cmd : IPC_SET,
            &semid64.sem_perm, 0);
  if (IS_ERR(ipcp))
    return PTR_ERR(ipcp);
@@ -1105,6 +1106,10 @@ static int semctl_down(struct ipc_namespace *ns, int semid,
  case IPC_RMID:
    freeary(ns, ipcp);
    goto out_up;
+ case SEM_SET:
+   err = ipc_update_key(&sem_ids(ns), &semid64.sem_perm, ipcp);
+   if (err)
+    break;
  case IPC_SET:
    err = ipc_update_perm(&semid64.sem_perm, ipcp);
    if (err)
@@ -1152,6 +1157,7 @@ SYSCALL_DEFINE(semctl)(int semid, int semnum, int cmd, union
semun arg)
    return err;
  case IPC_RMID:
  case IPC_SET:
+ case SEM_SET:
    err = semctl_down(ns, semid, cmd, version, arg);
    return err;
  default:
diff --git a/security/selinux/hooks.c b/security/selinux/hooks.c
index 78b77ac..02b037d 100644
--- a/security/selinux/hooks.c
+++ b/security/selinux/hooks.c
@@ -5133,6 +5133,7 @@ static int selinux_sem_semctl(struct sem_array *sma, int cmd)
    perms = SEM__DESTROY;
    break;
  case IPC_SET:
+ case SEM_SET:
    perms = SEM__SETATTR;
    break;
  case IPC_STAT:
diff --git a/security/smack/smack_lsm.c b/security/smack/smack_lsm.c
index d51a8da..b4135ed 100644
```

```
--- a/security/smack/smack_lsm.c
+++ b/security/smack/smack_lsm.c
@@ -2253,6 +2253,7 @@ static int smack_sem_semctl(struct sem_array *sma, int cmd)
  case SETALL:
  case IPC_RMID:
  case IPC_SET:
+ case SEM_SET:
   may = MAY_READWRITE;
   break;
  case IPC_INFO:
```