
Subject: [PATCH v7 07/10] ipc: add new SEM_SET command for sys_semctl() call
Posted by [Stanislav Kinsbursky](#) on Thu, 18 Oct 2012 10:23:11 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                | 11 ++++++++--
security/selinux/hooks.c | 1 +
security/smack/smack_lsm.c | 1 +
5 files changed, 13 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 @ @

/* ipcctl 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_semctl64_ds(&s64, compat_ptr(pad));
} else {

diff --git a/ipc/sem.c b/ipc/sem.c

index 10e9085..13b480a 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_semids_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 +1106,11 @@ 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;
+ /* fall through */
case IPC_SET:
    err = ipc_update_perm(&semid64.sem_perm, ipcp);
    if (err)
@@ -1152,6 +1158,7 @@ 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:
```
