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Subject: [PATCH v5 07/10] ipc: add new SEM\_SET command for sys\_semctl() call  
Posted by [Stanislav Kinsbursky](#) on Wed, 19 Sep 2012 16:06:05 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](mailto:skinsbursky@parallels.com)>

```
---  
include/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/linux/sem.h b/include/linux/sem.h
```

```
index 10d6b22..c74b9b5 100644
```

```
--- a/include/linux/sem.h
```

```
+++ b/include/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_sem64_ds(&s64, compat_ptr(pad));
```

```
    } else {
```

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

```
index e89b90c..b4f80082 100644
```

```
--- a/ipc/sem.c
```

```
+++ b/ipc/sem.c
```

```
@@ -1085,12 +1085,13 @@ static int semctl_down(struct ipc_namespace *ns, int semid,  
    struct sem64_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 +1106,10 @@ 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:
        ipc_update_perm(&semid64.sem_perm, ipcp);
        sma->sem_ctime = get_seconds();
@@ -1150,6 +1155,7 @@ 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 8269286..a23a7d6 100644
--- a/security/selinux/hooks.c
+++ b/security/selinux/hooks.c
@@ -5164,6 +5164,7 @@ 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 193e147..fea40cf 100644

```

```
--- a/security/smack/smack_lsm.c
+++ b/security/smack/smack_lsm.c
@@ -2274,6 +2274,7 @@ 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:
```

---