
Subject: [PATCH 1/2] Use list_head in binfmt handling
Posted by [Alexey Dobriyan](#) on Mon, 16 Jul 2007 13:26:33 GMT
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Switch single-linked binfmt formats list to usual list_head's.
This leads to one-liners in register_binfmt() and unregister_binfmt().
The downside is one pointer more in struct linux_binfmt. This is not a problem, since the set of registered binfmts on typical box is very small (ELF + something distro enabled for you).

Test-booted, played with executable .txt files, modprobe/rmmod binfmt_misc.

Signed-off-by: Alexey Dobriyan <adobriyan@sw.ru>

```
fs/exec.c          | 34 ++++++-----  
include/linux/binfmts.h | 3 +--  
2 files changed, 7 insertions(+), 30 deletions(-)
```

--- a/fs/exec.c

+++ b/fs/exec.c

@@ -66,27 +66,15 @@ int suid_dumpable = 0;

EXPORT_SYMBOL(suid_dumpable);

/* The maximal length of core_pattern is also specified in sysctl.c */

-static struct linux_binfmt *formats;

+static LIST_HEAD(formats);

static DEFINE_RWLOCK(binfmt_lock);

int register_binfmt(struct linux_binfmt * fmt)

{

- struct linux_binfmt ** tmp = &formats;

-

if (!fmt)

return -EINVAL;

- if (fmt->next)

- return -EBUSY;

write_lock(&binfmt_lock);

- while (*tmp) {

- if (fmt == *tmp) {

- write_unlock(&binfmt_lock);

- return -EBUSY;

- }

- tmp = &(*tmp)->next;

- }

- fmt->next = formats;

- formats = fmt;

+ list_add(&fmt->lh, &formats);

```

    write_unlock(&binfmt_lock);
    return 0;
}
@@ -95,20 +83,10 @@ EXPORT_SYMBOL(register_binfmt);

int unregister_binfmt(struct linux_binfmt * fmt)
{
- struct linux_binfmt ** tmp = &formats;
-
    write_lock(&binfmt_lock);
- while (*tmp) {
-     if (fmt == *tmp) {
-         *tmp = fmt->next;
-         fmt->next = NULL;
-         write_unlock(&binfmt_lock);
-         return 0;
-     }
-     tmp = &(*tmp)->next;
- }
+ list_del(&fmt->lh);
    write_unlock(&binfmt_lock);
- return -EINVAL;
+ return 0;
}

EXPORT_SYMBOL(unregister_binfmt);
@@ -155,7 +133,7 @@ asmlinkage long sys_uselib(const char __user * library)
    struct linux_binfmt * fmt;

    read_lock(&binfmt_lock);
- for (fmt = formats ; fmt ; fmt = fmt->next) {
+ list_for_each_entry(fmt, &formats, lh) {
    if (!fmt->load_shlib)
        continue;
    if (!try_module_get(fmt->module))
@@ -1097,7 +1075,7 @@ int search_binary_handler(struct linux_binprm *bprm, struct pt_regs
*regs)
    retval = -ENOENT;
    for (try=0; try<2; try++) {
        read_lock(&binfmt_lock);
- for (fmt = formats ; fmt ; fmt = fmt->next) {
+ list_for_each_entry(fmt, &formats, lh) {
        int (*fn)(struct linux_binprm *, struct pt_regs *) = fmt->load_binary;
        if (!fn)
            continue;
--- a/include/linux/binfmts.h
+++ b/include/linux/binfmts.h
@@ -55,7 +55,7 @@ struct linux_binprm{

```

```
* linux accepts.  
*/  
struct linux_binfmt {  
- struct linux_binfmt * next;  
+ struct list_head lh;  
  struct module *module;  
  int (*load_binary)(struct linux_binprm *, struct pt_regs * regs);  
  int (*load_shlib)(struct file *);  
}
```
