Subject: [PATCH 1/5] Use existing macros for distinguishing mandatory locks
Posted by Pavel Emelianov on Wed, 12 Sep 2007 11:17:58 GMT
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The combination of S_ISGID bit set and S_IXGRP bit unset is
used to mark the inode as "mandatory lockable" and there's a
macro for this check called MANDATORY_LOCK(inode). However,
fs/locks.c and some filesystems still perform the explicit
i_mode checking.

Switch the fs/locks.c to macro making the code shorter and
more readable.

The __MANDATORY_LOCK() macro is to be used in places where
the IS_MANDLOCK() for superblock is already known to be true.

Signed-off-by: Pavel Emelyanov <xemul@openvz.org>

---

 fs/locks.c | 14 ++++----------
 include/linux/fs.h | 4 ++--
 2 files changed, 6 insertions(+), 12 deletions(-)

diff --git a/include/linux/fs.h b/include/linux/fs.h
index 291d40b..035ffda 100644
--- a/include/linux/fs.h
+++ b/include/linux/fs.h
@@ -1488,8 +1488,8 @@ extern int locks_mandatory_area(int, str
  * Candidates for mandatory locking have the setgid bit set
  * but no group execute bit - an otherwise meaningless combination.
  */
-#define MANDATORY_LOCK(inode) \
- (IS_MANDLOCK(inode) && ((inode)->i_mode & (S_ISGID | S_IXGRP)) == S_ISGID)
+#define __MANDATORY_LOCK(ino) (((ino)->i_mode & (S_ISGID | S_IXGRP)) == S_ISGID)
+#define MANDATORY_LOCK(inode) (IS_MANDLOCK(inode) &&
__MANDATORY_LOCK(inode))

 static inline int locks_verify_locked(struct inode *inode)
 {
diff --git a/fs/locks.c b/fs/locks.c
index 0db1a14..f90fe6d 100644
--- a/fs/locks.c
+++ b/fs/locks.c
@@ -1112,7 +1112,7 @@ int locks_mandatory_area(int read_write,
     * If we've been sleeping someone might have
     * changed the permissions behind our back.
     */

```
-   if ((inode->i_mode & (S_ISGID | S_IXGRP)) == S_ISGID)
+   if (__MANDATORY_LOCK(inode))
     continue;
   }

@@ -1751,9 +1751,7 @@ int fcntl_setlk(unsigned int fd, struct
  /* Don't allow mandatory locks on files that may be memory mapped
   * and shared.
   */
- if (IS_MANDLOCK(inode) &&
-     (inode->i_mode & (S_ISGID | S_IXGRP)) == S_ISGID &&
-     mapping_writably_mapped(filp->f_mapping)) {
+ if (MANDATORY_LOCK(inode) && mapping_writably_mapped(filp->f_mapping)) {
   error = -EAGAIN;
   goto out;
  }
@@ -1877,9 +1875,7 @@ int fcntl_setlk64(unsigned int fd, struc
  /* Don't allow mandatory locks on files that may be memory mapped
   * and shared.
   */
- if (IS_MANDLOCK(inode) &&
-     (inode->i_mode & (S_ISGID | S_IXGRP)) == S_ISGID &&
-     mapping_writably_mapped(filp->f_mapping)) {
+ if (MANDATORY_LOCK(inode) && mapping_writably_mapped(filp->f_mapping)) {
   error = -EAGAIN;
   goto out;
  }
@@ -2073,9 +2069,7 @@ static void lock_get_status(char* out, s
   out += sprintf(out, "%6s %s ",
         (fl->fl_flags & FL_ACCESS) ? "ACCESS" : "POSIX ",
         (inode == NULL) ? "*NOINODE*" :
-        (IS_MANDLOCK(inode) &&
-         (inode->i_mode & (S_IXGRP | S_ISGID)) == S_ISGID) ?
-        "MANDATORY" : "ADVISORY ");
+         MANDATORY_LOCK(inode) ? "MANDATORY" : "ADVISORY ");
  } else if (IS_FLOCK(fl)) {
   if (fl->fl_type & LOCK_MAND) {
    out += sprintf(out, "FLOCK  MSNFS     ");
```

Subject: Re: [PATCH 1/5] Use existing macros for distinguishing mandatory locks
Posted by akpm on Fri, 14 Sep 2007 23:42:15 GMT
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On Wed, 12 Sep 2007 15:17:58 +0400
Pavel Emelyanov <xemul@openvz.org> wrote:

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> i_mode checking.
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> more readable.
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> the IS_MANDLOCK() for superblock is already known to be true.
>

If we're going to churn this code then it would be better to switch from
ugly-upper-case-macro to nice-lower-case-C-function while we're doing it,
please.

>
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> +#define MANDATORY_LOCK(inode) (IS_MANDLOCK(inode) &&
__MANDATORY_LOCK(inode))

Especially as the macro is a buggy one which references its argument more
than once.
