Subject: ext2/ext3 errors behaviour fixes
Posted by vaverin on Wed, 04 Oct 2006 07:50:00 GMT
View Forum Message <> Reply to Message

Hello all,

Current error behaviour for ext2 and ext3 filesystems does not fully correspond
to the documentation and should be fixed.

According to man 8 mount, ext2 and ext3 file systems allow to set one of 3
different on-errors behaviours:

---- start of quote man 8 mount ----
errors=continue / errors=remount-ro / errors=panic
    Define the behaviour when an error is encountered. (Either ignore errors and
just mark the file system erroneous and continue, or remount the file system
read-only, or panic and halt the system.) The default is set in the filesystem
superblock, and can be changed using tune2fs(8).
---- end of quote ----

However EXT3_ERRORS_CONTINUE is not read from the superblock, and thus
ERRORS_CONT is not saved on the sbi->s_mount_opt. It leads to the incorrect
handle of errors on ext3.

Then we've checked corresponding code in ext2 and discovered that it is
buggy as well:
- EXT2_ERRORS_CONTINUE is not read from the superblock (the same);
- parse_option() does not clean the alternative values and thus
  something like (ERRORS_CONT|ERRORS_RO) can be set;
- if options are omitted, parse_option() does not set any of these options.

Therefore it is possible to set any combination of these options on the ext2:
- none of them may be set:
 EXT2_ERRORS_CONTINUE on superblock / empty mount options;
- any of them may be set using mount options;
- 2 any options may be set: by using EXT2_ERRORS_RO/EXT2_ERRORS_PANIC on the
superblock and other value in mount options;
- and finally all three options may be set by adding third option in remount.

Currently ext2 uses these values only in ext2_error() and it is not leading to
any noticeable troubles. However somebody may be discouraged when he will try to
workaround EXT2_ERRORS_PANIC on the superblock by using errors=continue in mount
options.

The following patches fix this.

Thank you,
 Vasily Averin