Subject: ext2/ext3 errors behaviour fixes
Posted by vaverin on Wed, 04 Oct 2006 07:50:00 GMT
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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

SWsoft Virtuozzo/OpenVZ Linux kernel team

Subject: Re: ext2/ext3 errors behaviour fixes
Posted by Andreas Dilger on Wed, 04 Oct 2006 15:02:36 GMT
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On Oct 04, 2006 11:50 +0400, Vasily Averin wrote:
> 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.
>
> The following patches fix this.

{patch is missing}

Cheers, Andreas
--
Andreas Dilger
Principal Software Engineer
Cluster File Systems, Inc.

Subject: Re: ext2/ext3 errors behaviour fixes
Posted by Andreas Dilger on Wed, 04 Oct 2006 15:07:47 GMT
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On Oct 04, 2006 09:02 -0600, Andreas Dilger wrote:
> On Oct 04, 2006 11:50 +0400, Vasily Averin wrote:
> > 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.
> >
> > The following patches fix this.
>
> {patch is missing}

Sorry, nm.

Cheers, Andreas
--
Andreas Dilger
Principal Software Engineer
Cluster File Systems, Inc.