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Subject: [PATCH 03/11] fuse: rework fuse\_retrieve()  
Posted by [Maxim Patlasov](#) on Wed, 19 Sep 2012 16:32:03 GMT  
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The patch reworks fuse\_retrieve() to allocate only so many page pointers as needed. The core part of the patch is the following calculation:

```
num_pages = (num + offset + PAGE_SIZE - 1) >> PAGE_SHIFT;
```

(thanks Miklos for formula). All other changes are mostly shuffling lines.

Signed-off-by: Maxim Patlasov <[mpatlasov@parallels.com](mailto:mpatlasov@parallels.com)>

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```
fs/fuse/dev.c | 25 ++++++-----  
1 files changed, 15 insertions(+), 10 deletions(-)
```

```
diff --git a/fs/fuse/dev.c b/fs/fuse/dev.c  
index 3ad5570..b241a7d 100644
```

```
--- a/fs/fuse/dev.c
```

```
+++ b/fs/fuse/dev.c
```

```
@@ -1563,13 +1563,24 @@ static int fuse_retrieve(struct fuse_conn *fc, struct inode *inode,  
    unsigned int num;  
    unsigned int offset;  
    size_t total_len = 0;  
+ int num_pages;  
  
- req = fuse_get_req(fc, FUSE_MAX_PAGES_PER_REQ);  
+ offset = outarg->offset & ~PAGE_CACHE_MASK;  
+ file_size = i_size_read(inode);  
+  
+ num = outarg->size;  
+ if (outarg->offset > file_size)  
+   num = 0;  
+ else if (outarg->offset + num > file_size)  
+   num = file_size - outarg->offset;  
+  
+ num_pages = (num + offset + PAGE_SIZE - 1) >> PAGE_SHIFT;  
+ num_pages = min(num_pages, FUSE_MAX_PAGES_PER_REQ);  
+  
+ req = fuse_get_req(fc, num_pages);  
+ if (IS_ERR(req))  
+   return PTR_ERR(req);  
  
- offset = outarg->offset & ~PAGE_CACHE_MASK;  
-  
req->in.h.opcode = FUSE_NOTIFY_REPLY;  
req->in.h.nodeid = outarg->nodeid;  
req->in.numargs = 2;
```

```
@@ -1578,14 +1589,8 @@ static int fuse_retrieve(struct fuse_conn *fc, struct inode *inode,
    req->end = fuse_retrieve_end;

    index = outarg->offset >> PAGE_CACHE_SHIFT;
- file_size = i_size_read(inode);
- num = outarg->size;
- if (outarg->offset > file_size)
-     num = 0;
- else if (outarg->offset + num > file_size)
-     num = file_size - outarg->offset;

- while (num && req->num_pages < FUSE_MAX_PAGES_PER_REQ) {
+ while (num && req->num_pages < num_pages) {
    struct page *page;
    unsigned int this_num;
```

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