
Subject: [BUGFIX][RFC][PATCH][only -mm] FIX memory leak in memory cgroup vs. page migration [2/1] additional

Posted by [KAMEZAWA Hiroyuki](#) on Tue, 02 Oct 2007 10:12:17 GMT

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The patch I sent needs following fix, sorry.

Anyway, I'll repost good-version with reflected comments again.

Thanks,

-Kame

=

fix-page-migration-under-memory-controller patch needs this fix..sorry.

- We should uncharge page by mem_cgroup_end_migration() only if page is not charged by mem_cgroup_prepare_migration().
- move mem_cgroup_prepare_migration() after goto:

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Index: linux-2.6.23-rc8-mm2/mm/memcontrol.c

=====

--- linux-2.6.23-rc8-mm2.orig/mm/memcontrol.c

+++ linux-2.6.23-rc8-mm2/mm/memcontrol.c

@@ -445,7 +445,7 @@ retry:

```
}  
}
```

-void mem_cgroup_prepare_migration(struct page *page)

+int mem_cgroup_prepare_migration(struct page *page)

```
{  
    struct page_cgroup *pc;  
    lock_page_cgroup(page);  
@@ -453,7 +453,7 @@ void mem_cgroup_prepare_migration(struct  
    if (pc)  
        atomic_inc(&pc->ref_cnt);  
    unlock_page_cgroup(page);  
- return;  
+ return (pc != NULL);  
}
```

void mem_cgroup_end_migration(struct page *page)

Index: linux-2.6.23-rc8-mm2/include/linux/memcontrol.h

=====

--- linux-2.6.23-rc8-mm2.orig/include/linux/memcontrol.h

+++ linux-2.6.23-rc8-mm2/include/linux/memcontrol.h

@@ -47,7 +47,7 @@ extern void mem_cgroup_out_of_memory(str
extern int mem_cgroup_cache_charge(struct page *page, struct mm_struct *mm,
 gfp_t gfp_mask);

```

/* For handling page migration in proper way */
-extern void mem_cgroup_prepare_migration(struct page *page);
+extern int mem_cgroup_prepare_migration(struct page *page);
extern void mem_cgroup_end_migration(struct page *page);
extern void mem_cgroup_page_migration(struct page *newpage, struct page *page);

@@ -114,9 +114,9 @@ static inline struct mem_cgroup *mm_cgrou
}

/* For page migration */
-static inline void mem_cgroup_prepare_migration(struct page *page)
+static inline int mem_cgroup_prepare_migration(struct page *page)
{
- return;
+ return 0;
}

static inline void mem_cgroup_end_migration(struct mem_cgroup *cgroup)
Index: linux-2.6.23-rc8-mm2/mm/migrate.c
=====
--- linux-2.6.23-rc8-mm2.orig/mm/migrate.c
+++ linux-2.6.23-rc8-mm2/mm/migrate.c
@@ -620,6 +620,7 @@ static int unmap_and_move(new_page_t get
int *result = NULL;
struct page *newpage = get_new_page(page, private, &result);
int rcu_locked = 0;
+ int charge = 0;

if (!newpage)
return -ENOMEM;
@@ -652,8 +653,6 @@ static int unmap_and_move(new_page_t get
rcu_read_lock();
rcu_locked = 1;
}
- mem_cgroup_prepare_migration(page);
-
/*
* This is a corner case handling.
* When a new swap-cache is read into, it is linked to LRU
@@ -663,6 +662,8 @@ static int unmap_and_move(new_page_t get
*/
if (!page->mapping)
goto rcu_unlock;
+
+ charge = mem_cgroup_prepare_migration(page);
/* Establish migration ptes or remove ptes */
try_to_unmap(page, 1);

```

@@ -671,8 +672,9 @@ static int unmap_and_move(new_page_t get

```
if (rc) {
    remove_migration_ptes(page, page);
- mem_cgroup_end_migration(page);
- } else
+ if (charge)
+ mem_cgroup_end_migration(page);
+ } else if (charge)
    mem_cgroup_end_migration(newpage);
```

rcu_unlock:

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