
Subject: [PATCH] cfq: wrong sync writes detection
Posted by [Vasily Tarasov](#) on Mon, 11 Dec 2006 15:45:19 GMT
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CFQ I/O scheduler does the following actions to
find out whether the request is sync:

`rw = rq_data_dir(rq); => possible values for rw are 0 or 1`

```
static inline pid_t cfq_queue_pid(struct task_struct *task, int rw)
{
    if (rw == READ || rw == WRITE_SYNC) => second condition is always false
        return task->pid;

    return CFQ_KEY_ASYNC;
}
```

The following patch fixes the bug by adding sync parameter,
wich is obtained through `bio_sync` macros.

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```
--- ./block/cfq-iosched.c.syncwrite 2006-09-20 07:42:06.000000000 +0400
+++ ./block/cfq-iosched.c 2006-12-11 07:23:03.000000000 +0300
@@ -324,9 +324,9 @@ static int cfq_queue_empty(request_queue
    return !cfqd->busy_queues;
}
```

```
-static inline pid_t cfq_queue_pid(struct task_struct *task, int rw)
+static inline pid_t cfq_queue_pid(struct task_struct *task, int rw, int sync)
{
- if (rw == READ || rw == WRITE_SYNC)
+ if (rw == READ || sync)
    return task->pid;
```

```
    return CFQ_KEY_ASYNC;
@@ -621,7 +621,7 @@ static struct request *
cfq_find_rq_fmerge(struct cfq_data *cfqd, struct bio *bio)
{
    struct task_struct *tsk = current;
- pid_t key = cfq_queue_pid(tsk, bio_data_dir(bio));
+ pid_t key = cfq_queue_pid(tsk, bio_data_dir(bio), bio_sync(bio));
    struct cfq_queue *cfqq;
    struct rb_node *n;
    sector_t sector;
@@ -1958,7 +1958,8 @@ static int cfq_may_queue(request_queue_t
```

```

* so just lookup a possibly existing queue, or return 'may queue'
* if that fails
*/
- cfqq = cfq_find_cfq_hash(cfqd, cfq_queue_pid(tsk, rw), tsk->ioprio);
+ cfqq = cfq_find_cfq_hash(cfqd, cfq_queue_pid(tsk, rw,
+   bio_sync(bio)), tsk->ioprio);
if (cfqq) {
    cfq_init_prio_data(cfqq);
    cfq_prio_boost(cfqq);
@@ -2020,7 +2021,7 @@ cfq_set_request(request_queue_t *q, struct
    struct task_struct *tsk = current;
    struct cfq_io_context *cic;
    const int rw = rq_data_dir(rq);
- pid_t key = cfq_queue_pid(tsk, rw);
+ pid_t key = cfq_queue_pid(tsk, rw, bio_sync(bio));
    struct cfq_queue *cfqq;
    struct cfq_rq *crq;
    unsigned long flags;

```
