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Subject: [RFC][patch 12/12][CFQ-cgroup] entry/remove active cfq\_data

Posted by [Satoshi UCHIDA](#) on Thu, 03 Apr 2008 07:18:10 GMT

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This patch controls whether cfq\_data is active or not.

When cfq\_data is not active and active cfq\_queue is inserted into cfq\_data, cfq\_data is activated.

When cfq\_data is active and active cfq\_queue is not exist, cfq\_data is deactivated.

The new cfq optional operations:

The "cfq\_add\_cfqq\_opt\_fn" defines a function that runs an additional process when active queue is inserted into cfq\_data.

The "cfq\_del\_cfqq\_opt\_fn" defines a function that runs an additional process when active queue is removed in cfq\_data.

Signed-off-by: Satoshi UCHIDA <[uchida@ap.jp.nec.com](mailto:uchida@ap.jp.nec.com)>

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```
block/cfq-cgroup.c      | 28 ++++++
block/cfq-iosched.c    |  6 +++++
include/linux/cfq-iosched.h |  4 ++++
3 files changed, 38 insertions(+), 0 deletions(-)
```

```
diff --git a/block/cfq-cgroup.c b/block/cfq-cgroup.c
```

```
index 27a9a7a..f868f4f 100644
```

```
--- a/block/cfq-cgroup.c
```

```
+++ b/block/cfq-cgroup.c
```

```
@@ -741,6 +741,32 @@ static int cfq_cgroup_active_data_check(struct cfq_data *cfqd)
    return (cfqd->cfqmd->active_data == cfqd);
}
```

```
+static void cfq_cgroup_add_cfqd_rr(struct cfq_data *cfqd)
```

```
+{
```

```
+ if (!cfq_cfqd_on_rr(cfqd)) {
```

```
+ cfq_mark_cfqd_on_rr(cfqd);
```

```
+ cfqd->cfqmd->busy_data++;
```

```
+
```

```
+ cfq_cgroup_service_tree_add(cfqd, 0);
```

```
+ }
```

```
+}
```

```
+
```

```
+
```

```
+static void cfq_cgroup_del_cfqd_rr(struct cfq_data *cfqd)
```

```
+{
```

```
+ if (RB_EMPTY_ROOT(&cfqd->service_tree.rb)) {
```

```
+ struct cfq_meta_data *cfqdd = cfqd->cfqmd;
```

```

+ BUG_ON(!cfq_cfqd_on_rr(cfqd));
+ cfq_clear_cfqd_on_rr(cfqd);
+ if (!RB_EMPTY_NODE(&cfqd->rb_node)) {
+   cfq_rb_erase(&cfqd->rb_node,
+     &cfqdd->service_tree);
+ }
+ BUG_ON(!cfqdd->busy_data);
+ cfqdd->busy_data--;
+ }
+ }
+
+ struct cfq_ops opt = {
+   .cfq_init_queue_fn = __cfq_cgroup_init_queue,
+   .cfq_exit_queue_fn = __cfq_cgroup_exit_data,
@@ -749,4 +775,6 @@ struct cfq_ops opt = {
+   .cfq_completed_request_after_fn = cfq_cgroup_completed_request_after,
+   .cfq_empty_fn = cfq_cgroup_queue_empty,
+   .cfq_active_check_fn = cfq_cgroup_active_data_check,
+ .cfq_add_cfqq_opt_fn = cfq_cgroup_add_cfqd_rr,
+ .cfq_del_cfqq_opt_fn = cfq_cgroup_del_cfqd_rr,
+ };
diff --git a/block/cfq-iosched.c b/block/cfq-iosched.c
index 505e425..8f5227f 100644
--- a/block/cfq-iosched.c
+++ b/block/cfq-iosched.c
@@ -492,6 +492,9 @@ static void cfq_add_cfqq_rr(struct cfq_data *cfqd, struct cfq_queue *cfqq)
   cfqd->busy_queues++;

   cfq_resort_rr_list(cfqd, cfqq);
+
+ if (opt.cfq_add_cfqq_opt_fn)
+   opt.cfq_add_cfqq_opt_fn(cfqd);
+ }

/*
@@ -508,6 +511,9 @@ static void cfq_del_cfqq_rr(struct cfq_data *cfqd, struct cfq_queue *cfqq)

   BUG_ON(!cfqd->busy_queues);
   cfqd->busy_queues--;
+
+ if (opt.cfq_del_cfqq_opt_fn)
+   opt.cfq_del_cfqq_opt_fn(cfqd);
+ }

/*
diff --git a/include/linux/cfq-iosched.h b/include/linux/cfq-iosched.h
index 63d2545..ed35050 100644
--- a/include/linux/cfq-iosched.h

```

```
+++ b/include/linux/cfq-iosched.h
@@ -161,6 +161,8 @@ typedef int (cfq_dispatch_requests_fn)(struct cfq_data *, int);
typedef int (cfq_completed_request_after_fn)(struct cfq_data *);
typedef int (cfq_active_check_fn)(struct cfq_data *);
typedef int (cfq_empty_fn)(struct cfq_data *);
+typedef void (cfq_add_cfqq_opt_fn)(struct cfq_data *);
+typedef void (cfq_del_cfqq_opt_fn)(struct cfq_data *);

struct cfq_ops
{
@@ -171,6 +173,8 @@ struct cfq_ops
    cfq_completed_request_after_fn *cfq_completed_request_after_fn;
    cfq_active_check_fn *cfq_active_check_fn;
    cfq_empty_fn *cfq_empty_fn;
+ cfq_add_cfqq_opt_fn *cfq_add_cfqq_opt_fn;
+ cfq_del_cfqq_opt_fn *cfq_del_cfqq_opt_fn;
};

extern struct cfq_ops opt;
--
1.5.4.1
```

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