Subject: [RFC][patch 3/11][CFQ-cgroup] Introduce cgroup subsystem
Posted by Satoshi UCHIDA on Tue, 01 Apr 2008 09:32:29 GMT
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This patch introduces a simple cgroup subsystem.
New cgroup subsystem is called cfq_cgroup.

Signed-off-by: Satoshi UCHIDA <uchida@ap.jp.nec.com>

```
diff --git a/block/Makefile b/block/Makefile
index 5a43c7d..ea07b46 100644
--- a/block/Makefile
+++ b/block/Makefile
@@ -11,6 +11,7 @@ obj-$(CONFIG_IOSCHED_NOOP) += noop-iosched.o
 obj-$(CONFIG_IOSCHED_AS) += as-iosched.o
 obj-$(CONFIG_IOSCHED_DEADLINE) += deadline-iosched.o
 obj-$(CONFIG_IOSCHED_CFQ) += cfq-iosched.o
+obj-$(CONFIG_CGROUP_CFQ) += cfq-cgroup.o

 obj-$(CONFIG_BLK_DEV_IO_TRACE) += blktrace.o
 obj-$(CONFIG_BLOCK_COMPAT) += compat_ioctl.o
diff --git a/block/cfq-cgroup.c b/block/cfq-cgroup.c
new file mode 100644
index 0000000..cea2b92
--- /dev/null
+++ b/block/cfq-cgroup.c
@@ -0,0 +1,57 @@
+/*
+ *  CFQ CGROUP disk scheduler.
+ *
+ *     This program is a wrapper program that is
+ *     extend CFQ disk scheduler for handling
+ *     cgroup subsystem.
+ *
+ *     This program is based on original CFQ code.
+ *
+ *  Copyright (C) 2008 Satoshi UCHIDA <s-uchida@ap.jp.nec.com>
+ *   and NEC Corp.
+ */
+
+#include <linux/blkdev.h>
+#include <linux/cgroup.h>
+#include <linux/cfq-iosched.h>
+
+struct cfq_cgroup {
+ struct cgroup_subsys_state css;
+};
+
```

```
+
+static inline struct cfq_cgroup *cgroup_to_cfq_cgroup(struct cgroup *cont)
+{
+ return container_of(cgroup_subsys_state(cont, cfq_cgroup_subsys_id),
+       struct cfq_cgroup, css);
+}
+
+static struct cgroup_subsys_state *
+cfq_cgroup_create(struct cgroup_subsys *ss, struct cgroup *cont)
+{
+ struct cfq_cgroup *cfqc;
+
+ if (!capable(CAP_SYS_ADMIN))
+  return ERR_PTR(-EPERM);
+
+ if (!cgroup_is_descendant(cont))
+  return ERR_PTR(-EPERM);
+
+ cfqc = kzalloc(sizeof(struct cfq_cgroup), GFP_KERNEL);
+ if (unlikely(!cfqc))
+  return ERR_PTR(-ENOMEM);
+
+ return &cfqc->css;
+}
+
+static void cfq_cgroup_destroy(struct cgroup_subsys *ss, struct cgroup *cont)
+{
+ kfree(cgroup_to_cfq_cgroup(cont));
+}
+
+struct cgroup_subsys cfq_cgroup_subsys = {
+ .name = "cfq_cgroup",
+ .create = cfq_cgroup_create,
+ .destroy = cfq_cgroup_destroy,
+ .subsys_id = cfq_cgroup_subsys_id,
+};
diff --git a/include/linux/cgroup_subsys.h b/include/linux/cgroup_subsys.h
index 1ddebfc..5d2e991 100644
--- a/include/linux/cgroup_subsys.h
+++ b/include/linux/cgroup_subsys.h
@@ -42,3 +42,9 @@ SUBSYS(mem_cgroup)
 #endif

 /* */
+
+#ifdef CONFIG_CGROUP_CFQ
+SUBSYS(cfq_cgroup)
+#endif
```

+
+/* */

_____

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