
Subject: [RFC][PATCH 1/4] Pagecache controller setup

Posted by [Vaidyanathan Srinivas](#) on Wed, 20 Jun 2007 11:35:40 GMT

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Pagecache controller setup

This patch basically adds user interface files in container fs similar to the rss control files.

pagecache_usage, pagecache_limit and pagecache_failcnt are added to each container. All units are 'pages' as in rss controller.

pagecache usage is all file backed pages used by the container which includes swapcache as well.

Separate res_counter for pagecache has been added.

Signed-off-by: Vaidyanathan Srinivasan <svaidy@linux.vnet.ibm.com>

mm/rss_container.c | 43 +++++
1 file changed, 43 insertions(+)

--- linux-2.6.22-rc2-mm1.orig/mm/rss_container.c

+++ linux-2.6.22-rc2-mm1/mm/rss_container.c

@@ -24,6 +24,8 @@ struct rss_container {

 * the counter to account for RSS

 */

 struct res_counter res;

+ /* the counter to account for pagecache pages */

+ struct res_counter pagecache_res;

/*

 * the lists of pages within the container.

 * actually these lists store the page containers (see below), not

@@ -347,6 +349,7 @@ static int rss_create(struct container_s

 return -ENOMEM;

 res_counter_init(&rss->res);

+ res_counter_init(&rss->pagecache_res);

 INIT_LIST_HEAD(&rss->inactive_list);

 INIT_LIST_HEAD(&rss->active_list);

 rss_container_attach(rss, cont);

@@ -359,6 +362,21 @@ static void rss_destroy(struct container

 kfree(rss_from_cont(cont));

}

+static ssize_t pagecache_read(struct container *cont, struct cftype *cft,

+ struct file *file, char __user *userbuf,

```

+ size_t nbytes, loff_t *ppos)
+{
+ return res_counter_read(&rss_from_cont(cont)->pagecache_res,
+ cft->private, userbuf, nbytes, ppos);
+}
+
+static ssize_t pagecache_write(struct container *cont, struct cftype *cft,
+ struct file *file, const char __user *userbuf,
+ size_t nbytes, loff_t *ppos)
+{
+ return res_counter_write(&rss_from_cont(cont)->pagecache_res,
+ cft->private, userbuf, nbytes, ppos);
+}

static ssize_t rss_read(struct container *cont, struct cftype *cft,
    struct file *file, char __user *userbuf,
@@ -418,6 +436,25 @@ static struct cftype rss_reclaimed = {
    .read = rss_read_reclaimed,
};

+static struct cftype pagecache_usage = {
+ .name = "pagecache_usage",
+ .private = RES_USAGE,
+ .read = pagecache_read,
+};
+
+static struct cftype pagecache_limit = {
+ .name = "pagecache_limit",
+ .private = RES_LIMIT,
+ .read = pagecache_read,
+ .write = pagecache_write,
+};
+
+static struct cftype pagecache_failcnt = {
+ .name = "pagecache_failcnt",
+ .private = RES_FAILCNT,
+ .read = pagecache_read,
+};
+
static int rss_populate(struct container_subsys *ss,
    struct container *cont)
{
@@ -431,6 +468,12 @@ static int rss_populate(struct container
    return rc;
    if ((rc = container_add_file(cont, &rss_reclaimed)) < 0)
        return rc;
+ if ((rc = container_add_file(cont, &pagecache_usage)) < 0)
+ return rc;
+ return rc;

```

```
+ if ((rc = container_add_file(cont, &pagecache_failcnt)) < 0)
+ return rc;
+ if ((rc = container_add_file(cont, &pagecache_limit)) < 0)
+ return rc;

return 0;
}
```
