
Subject: Re: [-mm PATCH] Memory controller improve user interface

Posted by [Paul Menage](#) on Wed, 29 Aug 2007 15:28:56 GMT

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On 8/29/07, Balbir Singh <balbir@linux.vnet.ibm.com> wrote:

>
> Change the interface to use kilobytes instead of pages. Page sizes can vary
> across platforms and configurations. A new strategy routine has been added
> to the resource counters infrastructure to format the data as desired.
>
> Suggested by David Rientjes, Andrew Morton and Herbert Poetzl
>
> Signed-off-by: Balbir Singh <balbir@linux.vnet.ibm.com>
> ---
>
> Documentation/controllers/memory.txt | 7 +---
> include/linux/res_counter.h | 6 +--
> kernel/res_counter.c | 24 ++++++-----
> mm/memcontrol.c | 47 ++++++-----
> 4 files changed, 64 insertions(+), 20 deletions(-)
>
> diff -puN mm/memcontrol.c~mem-control-make-ui-use-kilobytes mm/memcontrol.c
> --- linux-2.6.23-rc3/mm/memcontrol.c~mem-control-make-ui-use-kilobytes 2007-08-28
13:20:44.000000000 +0530
> +++ linux-2.6.23-rc3-balbir/mm/memcontrol.c 2007-08-29 14:36:07.000000000 +0530
> @@ -32,6 +32,7 @@
>
> struct container_subsys mem_container_subsys;
> static const int MEM_CONTAINER_RECLAIM_RETRIES = 5;
> +static const int MEM_CONTAINER_CHARGE_KB = (PAGE_SIZE >> 10);
>
> /*
> * The memory controller data structure. The memory controller controls both
> @@ -312,7 +313,7 @@ int mem_container_charge(struct page *pa
> * If we created the page_container, we should free it on exceeding
> * the container limit.
> */
> - while (res_counter_charge(&mem->res, 1)) {
> + while (res_counter_charge(&mem->res, MEM_CONTAINER_CHARGE_KB)) {
> if (try_to_free_mem_container_pages(mem))
> continue;
>
> @@ -352,7 +353,7 @@ int mem_container_charge(struct page *pa
> kfree(pc);
> pc = race_pc;
> atomic_inc(&pc->ref_cnt);
> - res_counter_uncharge(&mem->res, 1);
> + res_counter_uncharge(&mem->res, MEM_CONTAINER_CHARGE_KB);

```

>         css_put(&mem->css);
>         goto done;
>     }
> @@ -417,7 +418,7 @@ void mem_container_uncharge(struct page_
>         css_put(&mem->css);
>         page_assign_page_container(page, NULL);
>         unlock_page_container(page);
> -        res_counter_uncharge(&mem->res, 1);
> +        res_counter_uncharge(&mem->res, MEM_CONTAINER_CHARGE_KB);
>
>         spin_lock_irqsave(&mem->lru_lock, flags);
>         list_del_init(&pc->lru);
> @@ -426,12 +427,37 @@ void mem_container_uncharge(struct page_
>     }
> }
>
>-static ssize_t mem_container_read(struct container *cont, struct cftype *cft,
>-        struct file *file, char __user *userbuf, size_t nbytes,
>-        loff_t *ppos)
>+int mem_container_read_strategy(unsigned long val, char *buf)
>+{
>+    return sprintf(buf, "%lu (kB)\n", val);
>+}
>+
>+int mem_container_write_strategy(char *buf, unsigned long *tmp)
>+{
>+    *tmp = memparse(buf, &buf);
>+    if (*buf != '\0')
>+        return -EINVAL;
>+
>+    *tmp = *tmp >> 10;           /* convert to kilobytes */
>+    return 0;
>+}

```

This seems a bit inconsistent - if you write a value to a limit file, then the value that you read back is reduced by a factor of 1024? Having the "(kB)" suffix isn't really a big help to automated middleware.

I'd still be in favour of just reading/writing 64-bit values representing bytes - simple, and unambiguous for programmatic use, and not really any less user-friendly than kilobytes for manual use (since the numbers involved are going to be unwieldy for manual use whether they're in bytes or kB).

Paul

Containers mailing list

Subject: Re: [-mm PATCH] Memory controller improve user interface
Posted by [Balbir Singh](#) on Wed, 29 Aug 2007 16:07:38 GMT

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Paul Menage wrote:

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Why is that? Is it because you could write 4M and see it show up as 4096 kilobytes? We'll that can be fixed with another variant of the memparse() utility.

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> whether they're in bytes or kB).
>

64 bit might be an overkill for 32 bit machines. 32 bit machines with PAE cannot use 32 bit values, they need 64 bits. I think KiloBytes is an acceptable metric these days, everybody understands them.

> Paul

> _____
> Containers mailing list
> Containers@lists.linux-foundation.org
> <https://lists.linux-foundation.org/mailman/listinfo/containers>

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Warm Regards,
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Linux Technology Center
IBM, ISTL

Containers mailing list
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<https://lists.linux-foundation.org/mailman/listinfo/containers>
