
Subject: [PATCH 2/2] expose fine-grained per-cpu data for cpuacct stats

Posted by [Glauber Costa](#) on Wed, 20 Jun 2012 11:38:16 GMT

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The cpuacct cgroup already exposes user and system numbers in a per-cgroup fashion. But they are a summation along the whole group, not a per-cpu figure. Also, they are coarse-grained version of the stats usually shown at places like /proc/stat.

I want to have enough cgroup data to emulate the /proc/stat interface. To achieve that, I am creating a new file "stat_percpu" that displays the fine-grained per-cpu data. The original data is left alone.

The format of this file is as follows:

1line header
cpux val1 val2 ... valn.

It is the same format used for the cpu part /proc/stat, except for the header, that may allow us to add fields in the future if they prove themselves needed.

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CC: Paul Turner <pjt@google.com>

kernel/sched/core.c | 37 ++++++
1 file changed, 37 insertions(+)

```
diff --git a/kernel/sched/core.c b/kernel/sched/core.c
index 4ce68f6..5c19754 100644
--- a/kernel/sched/core.c
+++ b/kernel/sched/core.c
@@ -8155,6 +8155,39 @@ static int cpuacct_stats_show(struct cgroup *cgrp, struct cftype *cft,
    return 0;
}

+static inline void do_fill_seq(struct seq_file *m, struct cpuacct *ca,
+      int cpu, int index)
+{
+    struct kernel_cpustat *kcpustat = per_cpu_ptr(ca->cpustat, cpu);
+    u64 val;
+
+    val = cputime64_to_clock_t(kcpustat->cpustat[index]);
+    seq_put_decimal_ull(m, ' ', val);
+}
+
+static int cpuacct_stats_percpu_show(struct cgroup *cgrp, struct cftype *cft,
+      struct seq_file *m)
```

```

+{
+ struct cpuacct *ca = cgroup_ca(cgrp);
+ int cpu;
+
+ seq_printf(m, "user nice system irq softirq guest guest_nice\n");
+
+ for_each_online_cpu(cpu) {
+ seq_printf(m, "cpu%d", cpu);
+ do_fill_seq(m, ca, cpu, CPUTIME_USER);
+ do_fill_seq(m, ca, cpu, CPUTIME_NICE);
+ do_fill_seq(m, ca, cpu, CPUTIME_SYSTEM);
+ do_fill_seq(m, ca, cpu, CPUTIME_IRQ);
+ do_fill_seq(m, ca, cpu, CPUTIME_SOFTIRQ);
+ do_fill_seq(m, ca, cpu, CPUTIME_GUEST);
+ do_fill_seq(m, ca, cpu, CPUTIME_GUEST_NICE);
+ seq_putc(m, '\n');
+ }
+
+ return 0;
+}
+
static struct cftype files[] = {
{
.name = "usage",
@@ -8169,6 +8202,10 @@ static struct cftype files[] = {
.name = "stat",
.read_map = cpuacct_stats_show,
},
+
{
.name = "stat_percpu",
.read_seq_string = cpuacct_stats_percpu_show,
},
{ } /* terminate */
};

--
```

1.7.10.2
