Subject: [PATCH] p4-clockmod: switch to rdmsr_on_cpu/wrmsr_on_cpu
Posted by Alexey Dobriyan on Mon, 19 Mar 2007 16:10:09 GMT
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Dances with cpumasks go away.

Signed-off-by: Alexey Dobriyan <adobriyan@sw.ru>

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 arch/i386/kernel/cpu/cpufreq/p4-clockmod.c |   31 +++++------------------------
 1 file changed, 6 insertions(+), 25 deletions(-)

--- a/arch/i386/kernel/cpu/cpufreq/p4-clockmod.c
+++ b/arch/i386/kernel/cpu/cpufreq/p4-clockmod.c
@@ -27,7 +27,6 @@ #include <linux/smp.h>
 #include <linux/cpufreq.h>
 #include <linux/slab.h>
 #include <linux/cpumask.h>
-#include <linux/sched.h> /* current / set_cpus_allowed() */

 #include <asm/processor.h>
 #include <asm/msr.h>
@@ -62,7 +61,7 @@ static int cpufreq_p4_setdc(unsigned int
  if (!cpu_online(cpu) || (newstate > DC_DISABLE) || (newstate == DC_RESV))
   return -EINVAL;

- rdmsr(MSR_IA32_THERM_STATUS, l, h);
+ rdmsr_on_cpu(cpu, MSR_IA32_THERM_STATUS, &l, &h);

  if (l & 0x01)
   dprintk("CPU#%d currently thermal throttled\n", cpu);
@@ -70,10 +69,10 @@ static int cpufreq_p4_setdc(unsigned int
  if (has_N44_O17_errata[cpu] && (newstate == DC_25PT || newstate == DC_DFLT))
   newstate = DC_38PT;

- rdmsr(MSR_IA32_THERM_CONTROL, l, h);
+ rdmsr_on_cpu(cpu, MSR_IA32_THERM_CONTROL, &l, &h);
  if (newstate == DC_DISABLE) {
   dprintk("CPU#%d disabling modulation\n", cpu);
-  wrmsr(MSR_IA32_THERM_CONTROL, l & ~(1<<4), h);
+  wrmsr_on_cpu(cpu, MSR_IA32_THERM_CONTROL, l & ~(1<<4), h);
  } else {
   dprintk("CPU#%d setting duty cycle to %d%%\n",
    cpu, ((125 * newstate) / 10));
@@ -84,7 +83,7 @@ static int cpufreq_p4_setdc(unsigned int
    */
   l = (l & ~14);
   l = l | (1<<4) | ((newstate & 0x7)<<1);
```

```
-  wrmsr(MSR_IA32_THERM_CONTROL, l, h);
+  wrmsr_on_cpu(cpu, MSR_IA32_THERM_CONTROL, l, h);
  }

  return 0;
@@ -111,7 +110,6 @@ static int cpufreq_p4_target(struct cpuf
 {
  unsigned int    newstate = DC_RESV;
  struct cpufreq_freqs freqs;
- cpumask_t cpus_allowed;
  int i;

  if (cpufreq_frequency_table_target(policy, &p4clockmod_table[0], target_freq, relation,
&newstate))
@@ -132,17 +130,8 @@ static int cpufreq_p4_target(struct cpuf
  /* run on each logical CPU, see section 13.15.3 of IA32 Intel Architecture Software
   * Developer's Manual, Volume 3
   */
- cpus_allowed = current->cpus_allowed;
-
- for_each_cpu_mask(i, policy->cpus) {
-  cpumask_t this_cpu = cpumask_of_cpu(i);
-
-  set_cpus_allowed(current, this_cpu);
-  BUG_ON(smp_processor_id() != i);
-
+ for_each_cpu_mask(i, policy->cpus)
   cpufreq_p4_setdc(i, p4clockmod_table[newstate].index);
- }
- set_cpus_allowed(current, cpus_allowed);

  /* notifiers */
  for_each_cpu_mask(i, policy->cpus) {
@@ -256,17 +245,9 @@ static int cpufreq_p4_cpu_exit(struct cp

 static unsigned int cpufreq_p4_get(unsigned int cpu)
 {
- cpumask_t cpus_allowed;
  u32 l, h;

- cpus_allowed = current->cpus_allowed;
-
- set_cpus_allowed(current, cpumask_of_cpu(cpu));
- BUG_ON(smp_processor_id() != cpu);
-
- rdmsr(MSR_IA32_THERM_CONTROL, l, h);
-
- set_cpus_allowed(current, cpus_allowed);
```

```
+ rdmsr_on_cpu(cpu, MSR_IA32_THERM_CONTROL, &l, &h);

  if (l & 0x10) {
   l = l >> 1;
```