

[PATCH][2.6] first/next_cpu returns values > NR_CPUS

Source: <http://linux.derkeiler.com/Mailing-Lists/Kernel/2004-07/6449.html>

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Date: 07/31/04

Date: Sat, 31 Jul 2004 16:52:18 -0400 (EDT)
To: Linux Kernel <linux-kernel@vger.kernel.org>

The following caused some fireworks whilst merging i386 cpu hotplug.

any_online_cpu(0x2) returns 32 on i386 if we're forced to continue past the only set bit due to the additional find_first_bit in the find_next_bit i386 implementation. Not wanting to change current behaviour in the bitops primitives and since the NR_CPUS thing is a cpumask issue, i've opted to fix next_cpu() and first_cpu() instead.

Signed-off-by: Zwane Mwaikambo <zwane@fsmlabs.com>

Index: linux-2.6.8-rc2-mm1-lch/include/linux/cpumask.h

=====
RCS file: /home/cvsroot/linux-2.6.8-rc2-mm1/include/linux/cpumask.h,v

retrieving revision 1.1.1.1

diff -u -p -B -r1.1.1.1 cpumask.h

--- linux-2.6.8-rc2-mm1-lch/include/linux/cpumask.h 28 Jul 2004 14:35:22 -0000 1.1.1.1

+++ linux-2.6.8-rc2-mm1-lch/include/linux/cpumask.h 31 Jul 2004 17:57:12 -0000

@@ -207,13 +207,19 @@ static inline void __cpus_shift_left(cpu

#define first_cpu(src) __first_cpu(&(src), NR_CPUS)

static inline int __first_cpu(const cpumask_t *srcp, int nbits)

```
{
- return find_first_bit(srcp->bits, nbits);
+ int cpu = find_first_bit(srcp->bits, nbits);
+ if (cpu > NR_CPUS)
+ cpu = NR_CPUS;
+ return cpu;
}
```

#define next_cpu(n, src) __next_cpu((n), &(src), NR_CPUS)

static inline int __next_cpu(int n, const cpumask_t *srcp, int nbits)

```
{
- return find_next_bit(srcp->bits, nbits, n+1);
+ int cpu = find_next_bit(srcp->bits, nbits, n+1);
+ if (cpu > NR_CPUS)
+ cpu = NR_CPUS;
}
```

Linux-Kernel: [PATCH][2.6] first/next_cpu returns values > NR_CPUS

```
+ return cpu;  
}
```

```
#define cpumask_of_cpu(cpu) \  
_
```

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