

## Re: Semaphore assembly-code bug

**Source:** <http://linux.derkeiler.com/Mailing-Lists/Kernel/2004-10/10178.html>

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**From:** Linus Torvalds ([torvalds\\_at\\_osdl.org](mailto:torvalds_at_osdl.org))

**Date:** 10/31/04

Date: Sat, 30 Oct 2004 18:43:21 -0700 (PDT)

To: Andi Kleen <[ak@suse.de](mailto:ak@suse.de)>

On Sun, 31 Oct 2004, Andi Kleen wrote:

>

> *Using the long stack setup code was found to be a significant*

> *win when enough registers were saved (several percent in real benchmarks)*

> *on K8 gcc.*

For `_what_`?

Real applications, or SpecInt?

The fact is, SpecInt is not very interesting, because it has almost `_zero_` icache footprint, and it has generally big repeat-rates, and to make matters worse, you are allowed (and everybody does) warm up the caches by running before you actually do the benchmark run.

`_None_` of these are realistic for real life workloads.

> *It speed up all function calls considerably because it*

> *eliminates several stalls for each function entry/exit.*

.. it shaves off a few cycles in the cached case, yes.

> *The pop's will all depend on each other because of their implicated*

> *reference to esp.*

Which is only true on moderately stupid CPU's. Two pop's don't `_really_` depend on each other in any real sense, and there are CPU's that will happily dual-issue them, or at least not stall in between (ie the pop's will happily keep the memory unit 100% busy).

Linus

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