

Linux-Kernel: [patch] linux-2.6.14-rt21 PPC32 signal delivery in realtime preemption.

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Patch description:

With CONFIG_PREEMPT_RT=y and CONFIG_DEBUG_PREEMPT=y lots of sleeping-in-invalid-context BUG messages are displayed for PPC32 architecture.

Kernel log:

Freeing unused kernel memory: 108k init

BUG: sleeping function called from invalid context init(1) at kernel/rt.c:1446

in_atomic():1 [00000001], irqs_disabled():0

Call trace:

```
[c0012010] __might_sleep+0xf0/0xfc
[c0031fd8] __spin_lock+0x38/0x70
[c004ab68] lru_cache_add_active+0x20/0xa0
[c0071c24] install_arg_page+0xf0/0x24c
[c0071ee8] setup_arg_pages+0x168/0x1d4
[c0095674] load_elf_binary+0x44c/0x11d8
[c0072ff4] search_binary_handler+0xfc/0x338
[c00733c0] do_execve+0x190/0x274
[c0005b30] sys_execve+0x80/0xe0
[c0002474] ret_from_syscall+0x0/0x70
[c00050b8] execve+0x8/0x30
[c00016a8] init+0x1b0/0x248
[c0005090] original_kernel_thread+0x48/0x64
```

This happens because interrupts are not enabled in the realtime preemption mode by the time kernel delivers signals to processes. This patch enables interrupts so that realtime mutexes can be acquired in the "right" context. The original code has been found in CONFIG_PREEMPT_RT support for i386 architecture.

Thanks.

Signed-off-by: Valentine Barshak <vbarshak@ru.mvista.com>

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- text/x-patch attachment: [ppc_prempt_rt_signal.patch](#)