

Re: [BUG] 2.6.21: Kernel won't boot with either/both of CONFIG_NO_HZ, CONFIG_HIGH_RES_TIMERS

Source: <http://linux.derkeiler.com/Mailing-Lists/Kernel/2007-04/msg12230.html>

- *From:* Mark Lord <lkml@xxxxxx>
 - *Date:* Mon, 30 Apr 2007 16:37:55 -0400
-

Mark Lord wrote:

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I have a new notebook (Dell Inspiron 9400) with Core2-Duo T7400 @ 2.1Ghz.
When either/both of CONFIG_NO_HZ, CONFIG_HIGH_RES_TIMERS is used,
the 2.6.21 kernel hangs on startup just after printing one/both of these:

..

That's a hard hang, by the way. No magic sysrq key or anything.

I've now built a kernel with the same config, plus all of the kernel debug options, and this one boots. I think this means the lockups may be due to a very tight race condition somewhere, and adding all of the debug goodies was enough to slow it down and avoid the clash (?)

One thing I notice from the syslog, is that with this kernel there is only the one "switched to high resolution mode on cpu 0" message, rather than one per-CPU as on the failed kernel.

Here's the diff for the debug config that works:

```
--- dot_config.nfg 2007-04-30 16:33:31.000000000 -0400
+++ dot_config.boots 2007-04-30 16:22:48.000000000 -0400
@@ -1,7 +1,7 @@
#
# Automatically generated make config: don't edit
# Linux kernel version: 2.6.21
-# Mon Apr 30 15:42:53 2007
+# Mon Apr 30 16:22:48 2007
#
CONFIG_X86_32=y
```

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```
CONFIG_GENERIC_TIME=y
@@ -56,7 +56,7 @@
CONFIG_UID16=y
CONFIG_SYSCTL_SYSCALL=y
CONFIG_KALLSYMS=y
-# CONFIG_KALLSYMS_ALL is not set
+CONFIG_KALLSYMS_ALL=y
# CONFIG_KALLSYMS_EXTRA_PASS is not set
CONFIG_HOTPLUG=y
CONFIG_PRINTK=y
@@ -2418,39 +2418,45 @@
# CONFIG_DEBUG_FS is not set
# CONFIG_HEADERS_CHECK is not set
CONFIG_DEBUG_KERNEL=y
-# CONFIG_DEBUG_SHIRQ is not set
+CONFIG_DEBUG_SHIRQ=y
CONFIG_LOG_BUF_SHIFT=16
-# CONFIG_DETECT_SOFTLOCKUP is not set
+CONFIG_DETECT_SOFTLOCKUP=y
# CONFIG_SCHEDSTATS is not set
# CONFIG_TIMER_STATS is not set
-# CONFIG_DEBUG_SLAB is not set
-# CONFIG_DEBUG_PREEMPT is not set
-# CONFIG_DEBUG_RT_MUTEXES is not set
+CONFIG_DEBUG_SLAB=y
+CONFIG_DEBUG_SLAB_LEAK=y
+CONFIG_DEBUG_PREEMPT=y
+CONFIG_DEBUG_RT_MUTEXES=y
+CONFIG_DEBUG_PI_LIST=y
# CONFIG_RT_MUTEX_TESTER is not set
-# CONFIG_DEBUG_SPINLOCK is not set
-# CONFIG_DEBUG_MUTEXES is not set
-# CONFIG_DEBUG_LOCK_ALLOC is not set
-# CONFIG_PROVE_LOCKING is not set
-# CONFIG_DEBUG_SPINLOCK_SLEEP is not set
-# CONFIG_DEBUG_LOCKING_API_SELFTESTS is not set
-# CONFIG_DEBUG_KOBJECT is not set
-# CONFIG_DEBUG_HIGHMEM is not set
+CONFIG_DEBUG_SPINLOCK=y
+CONFIG_DEBUG_MUTEXES=y
+CONFIG_DEBUG_LOCK_ALLOC=y
+CONFIG_PROVE_LOCKING=y
+CONFIG_LOCKDEP=y
+# CONFIG_DEBUG_LOCKDEP is not set
+CONFIG_TRACE_IRQFLAGS=y
+CONFIG_DEBUG_SPINLOCK_SLEEP=y
+CONFIG_DEBUG_LOCKING_API_SELFTESTS=y
+CONFIG_STACKTRACE=y
+CONFIG_DEBUG_KOBJECT=y
+CONFIG_DEBUG_HIGHMEM=y
CONFIG_DEBUG_BUGVERBOSE=y
```

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```
# CONFIG_DEBUG_INFO is not set
-# CONFIG_DEBUG_VM is not set
-# CONFIG_DEBUG_LIST is not set
-# CONFIG_FRAME_POINTER is not set
+CONFIG_DEBUG_VM=y
+CONFIG_DEBUG_LIST=y
+CONFIG_FRAME_POINTER=y
CONFIG_FORCED_INLINING=y
# CONFIG_RCU_TORTURE_TEST is not set
# CONFIG_FAULT_INJECTION is not set
-# CONFIG_EARLY_PRINTK is not set
-# CONFIG_DEBUG_STACKOVERFLOW is not set
+CONFIG_EARLY_PRINTK=y
+CONFIG_DEBUG_STACKOVERFLOW=y
# CONFIG_DEBUG_STACK_USAGE is not set

#
# Page alloc debug is incompatible with Software Suspend on i386
#
-# CONFIG_DEBUG_RODATA is not set
+CONFIG_DEBUG_RODATA=y
# CONFIG_4KSTACKS is not set
CONFIG_X86_FIND_SMP_CONFIG=y
CONFIG_X86_MPPARSE=y
-
```

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