

## 2.4.27 do\_IRQ: stack overflow issues/questions

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- *From:* Rudy Klinksiek <[rlinksiek@xxxxxxxxxxxxxx](mailto:rlinksiek@xxxxxxxxxxxxxx)>
  - *Date:* Wed, 14 Dec 2005 12:55:36 -0600
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Hi:

6 questions with traces and config info at the end. Explanation after the questions.

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For Box 1 & 2 "misc.c" has the "stacksize" #define bumped from 4096 to 8192.

Question 1: Does this actually change the stacksize for everyone or is this just a define for a "local" condition?

Question 2: Are these valid stack traces?? The reason for this question is that I don't see a clean "Hilvl()->Lolvl()->Notify\_users()->proc\_siglnl()->send\_sig\_info()" trace on the stack. There are only pieces. These routines are not inlined and are the interrupt->pgm\_notify call sequence.

Question 3: There seem to be a lot of routines related to the network traffic - tcp\_xxxx, ip\_xxxx, e1000\_xxxx, \_\_kfree\_skb. What's going on? Has some parameter been misconfigured?

Question 4: It would be possible to convert Lolvl\_intr\_handler() into a tasklet, a fairly painful ordeal since it will require a lot of internal restructuring. Does anyone know if that approach would help this situation or not?

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Question 5: As a curiosity, when I used SA\_INTERRUPT in the flags for request\_irq(), frequently the interrupt routine would be called but there would be no interrupt pending on the cards.  
Has anyone experienced this? I assume this should not be set, as the device drivers book recommends.

Question 6: Is there only 1 interrupt stack in total, or 1/cpu?

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Explanation::

I am working on a pci device driver. plx9080 pci interface, repetitive dmas of 32Kb into a set of kernel ring buffers ( user mmappable ) at continuous rates of 32Mb/sec. Time before problems develop vary from less than an hour to 1-2 days.

After several hangs and crashes( with the oopes not making any sense)kernel debugging was turned on: stack overflows, spinlock, frame pointer.

Result was that the stack overflow check was tripped on both systems.

Box 1: Debian 2.4.27 + bigpysmem patch -- dual Xenons 3.06G - hyperthreading enabled  
himem not enabled  
The two pci cards on this system are on different pci busses.

Box 2: same as Box 1 but different hw and 1 one of the Xenons is down.  
The two pci cards on this system are on the same pci bus.

Box 3: Debian 2.4.27 + bigpysmem patch -- PIII uniprocessor - himem not enabled  
No kernel debugging turned on ( yet )  
The two pci cards on the same bus  
Interrupt sharing is on.

General Operation:

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Crds are set to acquiring data, with the amount of data\_acquired/data\_ready\_interrupt determining the interrupt rate. Typically both cards interrupt with data ready at the same time. The sequence is then

```
Hilvl_intr_handler() - fields the data ready interrupt - starts dma
                      - fields the dma complete interrupt and calls
Lolvl_intr_handler() - which calls
  Notify_users() ... - which goes down a list of processes and foreach calls
  proc_signal() .. - which calls send_sig_info() to notify the process
                    of new data ready.
```

My initial concern on Box 1, because of hangs, was that my driver locking scheme was somehow incorrect, and deadlock was resulting. But after rereading the Documentatio/\*.txt on smp and locking and going over the driver several times, I am somewhat discounting this possibility. Also the latest run on this box had 200 stack overflows over 2.5 days, with none less than 800 bytes.

On Box 2 now I typically get into a "looping situation" in which the overflow stack size will be stable for a while, and then will drop to a lower level, but with extra frames on the stack. See the two stack traces below ...

Box 3 presents me with the least problems, although I have experienced 1 or 2 hangups over several weeks of testing.

This driver ( at least the essential structure - with no tasklet/bhs ) was originally written for a quad ppc board and handled 3 different types of pmc cards. Obviously here the cards are different, but the driver internals are essentially the same. I had no such stack overflow problems in the ppc case. However, the ppc platform distributed interrupts over the different cpus, if configd in.

For the X86, which is the version I'm working on the only way that I can see to do that is through /proc/irq/xxx/smp\_affinity. If the interrupts are not distributed to different cpus, they all seem to end up on cpu0, in which case there seems to be rapid system degradation - stack\_overflows, nmi\_watchdog oopes, etc. under moderate interrupt loading ( about 8 interrupts/millisecond )

Also a version of this driver works under Solaris 5.8 .

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Any comments, questions, ideas, things to try would be greatly appreciated.

Also things to avoid.

At the moment I am about out of ideas except for the tasklet approach ( hopefully avoidable ) and trying to wipeout as much of my stack usage as possible.

TIA  
klink

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Note that the "f89xxxxx" addresses translated [drq] below are my driver.

All for Box 1

Stack trace 1: a series of these at the 904 level and then at the 760 level

another run:

Stack trace 2: after a series of these and then ...  
Stack trace 4: again 4 extra frames on top of the stack ...

Config file

## 2.4.27 do\_IRQ: stack overflow issues/questions

-----  
Stack trace 1:

```
ksymoops < oops/oops.junk7_b
ksymoops 2.4.9 on i686 2.4.27-ticomgeo-v86sx. Options used
  -V (default)
  -k /proc/ksyms (default)
  -l /proc/modules (default)
  -o /lib/modules/2.4.27-ticomgeo-v86sx/ (default)
  -m /boot/System.map-2.4.27-ticomgeo-v86sx (default)
```

Warning: You did not tell me where to find symbol information. I will assume that the log matches the kernel and modules that are running right now and I'll use the default options above for symbol resolution. If the current kernel and/or modules do not match the log, you can get more accurate output by telling me the kernel version and where to find map, modules, ksyms etc. ksymoops -h explains the options.

```
f2a9a9a8 000002f8 00000000 00000000 00000200 00000000 00000004 00000000
00000000 f2a9a000 f2a9a000 00000001 00000000 f2a9aa30 c010c983 f7c36680
00000004 f2a9aa74 00000001 00000000 f2a9aa30 04000000 f2a90018 c0100018
Call Trace: [<c010c983>] [<c010969c>] [<c0107cd9>] [<c0109a44>]
[<c010c983>]
[<c0142584>] [<c0387427>] [<c0387483>] [<c038758b>] [<c038758b>]
[<c03dfb54>]
[<c03dfda5>] [<c03e0428>] [<c0387483>] [<c03e3277>] [<c03ec80f>]
[<c03ecf5e>]
[<c040f885>] [<c03cd02d>] [<c0396612>] [<c03cced0>] [<c03cca3f>]
[<c03cced0>]
[<c03cd249>] [<c03cd050>] [<c0396612>] [<c03cd050>] [<c03cce64>]
[<c03cd050>]
[<c03871ec>] [<c038c27f>] [<c0298355>] [<c0297c4a>] [<c038c535>]
[<c0127538>]
[<c0109af2>] [<c010c983>] [<f890ed04>] [<f89158fa>] [<c03d19e0>]
[<c03d01d5>]
[<c0296909>] [<c0296909>] [<c0296909>] [<c012db86>] [<c012dc4e>]
[<c012db86>]
[<f890eb87>] [<c012db86>] [<c012dc4e>] [<f890eb87>] [<c012da5a>]
[<c0387483>]
[<c038758b>] [<c03dfda5>] [<c0387483>] [<c038758b>] [<c03e3282>]
[<c03ec80f>]
[<c0387483>] [<c038758b>] [<c03dfda5>] [<c0387483>] [<c038758b>]
[<c0387483>]
[<c038758b>] [<c03dfd59>] [<c0387483>] [<c038758b>] [<c03e3282>]
[<c03ec80f>]
[<c03ecf5e>] [<c040f885>] [<c03cd02d>] [<c0396612>] [<c03cced0>]
[<c03cca3f>]
```

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```
[<c03cced0>] [<c03cd249>] [<c010fb98>] [<c0106ce1>] [<c0106e2c>]  
[<c01073b7>]  
[<c0107696>] [<c0297aae>] [<c011c248>] [<c01068d9>] [<c0163e6b>]  
[<c01078c7>]
```

Warning (Oops\_read): Code line not seen, dumping what data is available

```
Trace; c010c983 <call_do_IRQ+5/a>  
Trace; c010969c <handle_IRQ_event+4c/a0>  
Trace; c0107cd9 <show_stack+79/90>  
Trace; c0109a44 <do_IRQ+134/220>  
Trace; c010c983 <call_do_IRQ+5/a> <-----<<< Top of Stack for do_IRQ: stack overflow: 9  
Trace; c0142584 <kfree+54/b0>  
Trace; c0387427 <kfree_skbmem+17/80>  
Trace; c0387483 <kfree_skbmem+73/80>  
Trace; c038758b <__kfree_skb+fb/160>  
Trace; c038758b <__kfree_skb+fb/160>  
Trace; c03dfb54 <tcp_clean_rtx_queue+134/390>  
Trace; c03dfda5 <tcp_clean_rtx_queue+385/390>  
Trace; c03e0428 <tcp_ack+c8/5a0>  
Trace; c0387483 <kfree_skbmem+73/80>  
Trace; c03e3277 <tcp_rcv_established+547/9b0>  
Trace; c03ec80f <tcp_v4_do_rcv+12f/140>  
Trace; c03ecf5e <tcp_v4_rcv+73e/8e0>  
Trace; c040f885 <ipt_hook+35/40>  
Trace; c03cd02d <ip_local_deliver_finish+15d/180>  
Trace; c0396612 <nf_hook_slow+132/200>  
Trace; c03cced0 <ip_local_deliver_finish+0/180>  
Trace; c03cca3f <ip_local_deliver+1bf/1f0>  
Trace; c03cced0 <ip_local_deliver_finish+0/180>  
Trace; c03cd249 <ip_rcv_finish+1f9/266>  
Trace; c03cd050 <ip_rcv_finish+0/266>  
Trace; c0396612 <nf_hook_slow+132/200>  
Trace; c03cd050 <ip_rcv_finish+0/266>  
Trace; c03cce64 <ip_rcv+3f4/460>  
Trace; c03cd050 <ip_rcv_finish+0/266>  
Trace; c03871ec <alloc_skb+cc/1e0>  
Trace; c038c27f <netif_receive_skb+14f/220>  
Trace; c0298355 <e1000_clean_rx_irq+3f5/480>  
Trace; c0297c4a <e1000_clean+4a/c0>  
Trace; c038c535 <net_rx_action+b5/190>  
Trace; c0127538 <do_softirq+108/110>  
Trace; c0109af2 <do_IRQ+1e2/220>  
Trace; c010c983 <call_do_IRQ+5/a>  
Trace; f890ed04 <[drq]get_device_unit_data_structure+15/1f>  
Trace; f89158fa <[drq]drq_ioctl+2f/2ale>  
Trace; c03d19e0 <ip_finish_output2+0/180>  
Trace; c03d01d5 <ip_output+1f5/200>  
Trace; c0296909 <e1000_xmit_frame+539/660>  
Trace; c0296909 <e1000_xmit_frame+539/660>  
Trace; c0296909 <e1000_xmit_frame+539/660>  
Trace; c012db86 <send_signal+76/110>  
Trace; c012dc4e <deliver_signal+2e/110>  
Trace; c012db86 <send_signal+76/110>  
Trace; f890eb87 <[drq]proc_signal+30/38>  
Trace; c012db86 <send_signal+76/110>  
Trace; c012dc4e <deliver_signal+2e/110>  
Trace; f890eb87 <[drq]proc_signal+30/38>  
Trace; c012da5a <ignored_signal+3a/50>  
Trace; c0387483 <kfree_skbmem+73/80>
```

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```
Trace; c038758b <__kfree_skb+fb/160>
Trace; c03dfda5 <tcp_clean_rtx_queue+385/390>
Trace; c0387483 <kfree_skbmem+73/80>
Trace; c038758b <__kfree_skb+fb/160>
Trace; c03e3282 <tcp_rcv_established+552/9b0>
Trace; c03ec80f <tcp_v4_do_rcv+12f/140>
Trace; c0387483 <kfree_skbmem+73/80>
Trace; c038758b <__kfree_skb+fb/160>
Trace; c03dfda5 <tcp_clean_rtx_queue+385/390>
Trace; c0387483 <kfree_skbmem+73/80>
Trace; c038758b <__kfree_skb+fb/160>
Trace; c0387483 <kfree_skbmem+73/80>
Trace; c038758b <__kfree_skb+fb/160>
Trace; c03dfd59 <tcp_clean_rtx_queue+339/390>
Trace; c0387483 <kfree_skbmem+73/80>
Trace; c038758b <__kfree_skb+fb/160>
Trace; c03e3282 <tcp_rcv_established+552/9b0>
Trace; c03ec80f <tcp_v4_do_rcv+12f/140>
Trace; c03ecf5e <tcp_v4_rcv+73e/8e0>
Trace; c040f885 <ipt_hook+35/40>
Trace; c03cd02d <ip_local_deliver_finish+15d/180>
Trace; c0396612 <nf_hook_slow+132/200>
Trace; c03cced0 <ip_local_deliver_finish+0/180>
Trace; c03cca3f <ip_local_deliver+1bf/1f0>
Trace; c03cced0 <ip_local_deliver_finish+0/180>
Trace; c03cd249 <ip_rcv_finish+1f9/266>
Trace; c010fb98 <save_i387+1f8/250>
Trace; c0106ce1 <setup_sigcontext+e1/130>
Trace; c0106e2c <setup_frame+fc/220>
Trace; c01073b7 <handle_signal+187/1d0>
Trace; c0107696 <do_signal+296/371>
Trace; c0297aae <e1000_irq_enable+6e/80>
Trace; c011c248 <schedule+378/820>
Trace; c01068d9 <restore_sigcontext+119/130>
Trace; c0163e6b <sys_ioctl+12b/36d>
Trace; c01078c7 <system_call+33/38>
```

2 warnings issued. Results may not be reliable.

-----  
Stack trace 2:

```
ksymoops < oops/oops.junk8_b
ksymoops 2.4.9 on i686 2.4.27-ticomgeo-v86sx. Options used
  -V (default)
  -k /proc/ksyms (default)
  -l /proc/modules (default)
  -o /lib/modules/2.4.27-ticomgeo-v86sx/ (default)
  -m /boot/System.map-2.4.27-ticomgeo-v86sx (default)
```

Warning: You did not tell me where to find symbol information. I will assume that the log matches the kernel and modules that are running right now and I'll use the default options above for symbol resolution. If the current kernel and/or modules do not match the log, you can get



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```
Trace; c03d19e0 <ip_finish_output2+0/180>
Trace; c03d1ad9 <ip_finish_output2+f9/180>
Trace; c0396612 <nf_hook_slow+132/200>
Trace; c03d19e0 <ip_finish_output2+0/180>
Trace; c03d19e0 <ip_finish_output2+0/180>
Trace; c03d01d5 <ip_output+1f5/200>
Trace; c03d19e0 <ip_finish_output2+0/180>
Trace; c03d1c28 <ip_queue_xmit2+c8/231>
Trace; c0396612 <nf_hook_slow+132/200>
Trace; c03d1b60 <ip_queue_xmit2+0/231>
Trace; c03d067a <ip_queue_xmit+49a/560>
Trace; c03d1b60 <ip_queue_xmit2+0/231>
Trace; c03eb4b6 <tcp_v4_send_check+46/d0>
Trace; c03e4e7e <tcp_transmit_skb+42e/6c0>
Trace; c03e7795 <tcp_send_ack+85/d0>
Trace; c03d5620 <tcp_rfree+0/20>
Trace; c03d5620 <tcp_rfree+0/20>
Trace; c03e34d2 <tcp_rcv_established+7a2/9b0>
Trace; c03ec80f <tcp_v4_do_rcv+12f/140>
Trace; c03ecf5e <tcp_v4_rcv+73e/8e0>
Trace; c040f885 <ipt_hook+35/40>
Trace; c03cd02d <ip_local_deliver_finish+15d/180>
Trace; c0396612 <nf_hook_slow+132/200>
Trace; c03cced0 <ip_local_deliver_finish+0/180>
Trace; c03cca3f <ip_local_deliver+1bf/1f0>
Trace; c03cced0 <ip_local_deliver_finish+0/180>
Trace; c03cd249 <ip_rcv_finish+1f9/266>
Trace; c03cd050 <ip_rcv_finish+0/266>
Trace; c0396612 <nf_hook_slow+132/200>
Trace; c03cd050 <ip_rcv_finish+0/266>
Trace; c03cce64 <ip_rcv+3f4/460>
Trace; c03cd050 <ip_rcv_finish+0/266>
Trace; c038c27f <netif_receive_skb+14f/220>
Trace; c0298355 <e1000_clean_rx_irq+3f5/480>
Trace; c0297f4d <e1000_clean_tx_irq+28d/2a0>
Trace; c012c8ab <timer_bh+24b/4f0>
Trace; c0297c4a <e1000_clean+4a/c0>
Trace; c038c535 <net_rx_action+b5/190>
Trace; c0127538 <do_softirq+108/110>
Trace; c0109af2 <do_IRQ+1e2/220>
Trace; c010c983 <call_do_IRQ+5/a>
Trace; f8916508 <[drq]drq_ioctl+c3d/2ale>
Trace; c012dd26 <deliver_signal+106/110>
Trace; c012dd26 <deliver_signal+106/110>
Trace; c012dd26 <deliver_signal+106/110>
Trace; f890eb87 <[drq]proc_signal+30/38>
Trace; c012dd26 <deliver_signal+106/110>
Trace; f890eb87 <[drq]proc_signal+30/38>
Trace; c012dd26 <deliver_signal+106/110>
Trace; f8925d38 <[drq]lolvl_intr_tv+0/8>
Trace; c012dd26 <deliver_signal+106/110>
Trace; f890eb87 <[drq]proc_signal+30/38>
Trace; c012db86 <send_signal+76/110>
Trace; c012dc4e <deliver_signal+2e/110>
Trace; f891ac36 <[drq]embedded_lolvl_intr_handler+994/a4f>
Trace; f8925d38 <[drq]lolvl_intr_tv+0/8>
Trace; f890eb87 <[drq]proc_signal+30/38>
Trace; f891ac36 <[drq]embedded_lolvl_intr_handler+994/a4f>
Trace; f8925d38 <[drq]lolvl_intr_tv+0/8>
Trace; c012c526 <update_process_times+36/d0>
Trace; c011843c <smp_apic_timer_interrupt+13c/140>
Trace; c010d308 <call_apic_timer_interrupt+5/d>
```

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```
Trace; c0296909 <e1000_xmit_frame+539/660>
Trace; c012c526 <update_process_times+36/d0>
Trace; c0396fc8 <qdisc_restart+18/2f0>
Trace; c038baff <dev_queue_xmit+3df/510>
Trace; c03d19e0 <ip_finish_output2+0/180>
Trace; c03d1ad9 <ip_finish_output2+f9/180>
Trace; c0396612 <nf_hook_slow+132/200>
Trace; c03d19e0 <ip_finish_output2+0/180>
Trace; c03d19e0 <ip_finish_output2+0/180>
Trace; c03d01d5 <ip_output+1f5/200>
Trace; c03d19e0 <ip_finish_output2+0/180>
Trace; c03d1c28 <ip_queue_xmit2+c8/231>
Trace; c0396612 <nf_hook_slow+132/200>
Trace; c03d1b60 <ip_queue_xmit2+0/231>
Trace; c03d067a <ip_queue_xmit+49a/560>
Trace; c03d1b60 <ip_queue_xmit2+0/231>
Trace; c03eb4b6 <tcp_v4_send_check+46/d0>
Trace; c03e4e7e <tcp_transmit_skb+42e/6c0>
Trace; c010fa9e <save_i387+fe/250>
Trace; c010fb98 <save_i387+1f8/250>
Trace; c03e5c0d <tcp_write_xmit+1dd/2b0>
Trace; c03871ec <alloc_skb+cc/1e0>
Trace; c03d7e65 <tcp_sendmsg+6c5/13c0>
Trace; c0107696 <do_signal+296/371>
Trace; c03fcf31 <inet_sendmsg+41/50>
Trace; c03830f9 <sock_sendmsg+69/b0>
Trace; c011c248 <schedule+378/820>
Trace; c0163e6b <sys_ioctl+12b/36d>
Trace; c01078c7 <system_call+33/38>
```

2 warnings issued. Results may not be reliable.

-----  
Config file

```
#
# Automatically generated by make menuconfig: don't edit
#
CONFIG_X86=y
CONFIG_UID16=y
CONFIG_EXPERIMENTAL=y
CONFIG_MODULES=y
CONFIG_MODVERSIONS=y
CONFIG_KMOD=y
CONFIG_LOLAT=y
CONFIG_MPENTIUM4=y
CONFIG_X86_WP_WORKS_OK=y
CONFIG_X86_INVLPG=y
CONFIG_X86_CMPXCHG=y
CONFIG_X86_XADD=y
CONFIG_X86_BSWAP=y
```

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```
CONFIG_X86_POPAD_OK=y
CONFIG_RWSEM_XCHGADD_ALGORITHM=y
CONFIG_X86_L1_CACHE_SHIFT=7
CONFIG_X86_HAS_TSC=y
CONFIG_X86_GOOD_APIC=y
CONFIG_X86_PGE=y
CONFIG_X86_USE_PPRO_CHECKSUM=y
CONFIG_X86_F00F_WORKS_OK=y
CONFIG_X86_MCE=y
CONFIG_MICROCODE=y
CONFIG_X86_MSR=y
CONFIG_X86_CPUID=y
CONFIG_NOHIGHMEM=y
CONFIG_MTRR=y
CONFIG_BIGPHYS_AREA=y
CONFIG_SMP=y
CONFIG_PREEMPT=y
CONFIG_NR_CPUS=32
CONFIG_X86_TSC=y
CONFIG_HAVE_DEC_LOCK=y
CONFIG_NET=y
CONFIG_X86_IO_APIC=y
CONFIG_X86_LOCAL_APIC=y
CONFIG_PCI=y
CONFIG_PCI_GOANY=y
CONFIG_PCI_BIOS=y
CONFIG_PCI_DIRECT=y
CONFIG_ISA=y
CONFIG_PCI_NAMES=y
CONFIG_HOTPLUG=y
CONFIG_SYSVIPC=y
CONFIG_BSD_PROCESS_ACCT=y
CONFIG_SYSCTL=y
CONFIG_KCORE_ELF=y
CONFIG_BINFORMAT_AOUT=y
CONFIG_BINFORMAT_ELF=y
CONFIG_BINFORMAT_MISC=y
CONFIG_PM=y
CONFIG_ACPI=y
CONFIG_ACPI_BOOT=y
CONFIG_ACPI_BUS=y
CONFIG_ACPI_INTERPRETER=y
CONFIG_ACPI_EC=y
CONFIG_ACPI_POWER=y
CONFIG_ACPI_PCI=y
CONFIG_ACPI_MMCONFIG=y
CONFIG_ACPI_SLEEP=y
CONFIG_ACPI_SYSTEM=y
CONFIG_ACPI_AC=y
CONFIG_ACPI_BATTERY=y
CONFIG_ACPI_BUTTON=y
CONFIG_ACPI_FAN=y
CONFIG_ACPI_PROCESSOR=y
CONFIG_ACPI_THERMAL=y
CONFIG_PARPORT=m
CONFIG_PARPORT_PC=m
CONFIG_PARPORT_PC_CML1=m
CONFIG_PARPORT_PC_FIFO=y
CONFIG_BLK_DEV_FD=y
CONFIG_BLK_DEV_LOOP=y
CONFIG_PACKET=y
CONFIG_PACKET_MMAP=y
```

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```
CONFIG_NETFILTER=y
CONFIG_FILTER=y
CONFIG_UNIX=y
CONFIG_INET=y
CONFIG_IP_MULTICAST=y
CONFIG_SYN_COOKIES=y
CONFIG_IP_NF_CONNTRACK=y
CONFIG_IP_NF_FTP=y
CONFIG_IP_NF_AMANDA=y
CONFIG_IP_NF_TFTP=y
CONFIG_IP_NF_IRC=y
CONFIG_IP_NF_QUEUE=y
CONFIG_IP_NF_IPTABLES=y
CONFIG_IP_NF_MATCH_LIMIT=y
CONFIG_IP_NF_MATCH_MAC=y
CONFIG_IP_NF_MATCH_PKTTYPE=y
CONFIG_IP_NF_MATCH_MARK=y
CONFIG_IP_NF_MATCH_MULTIPORT=y
CONFIG_IP_NF_MATCH_TOS=y
CONFIG_IP_NF_MATCH_RECENT=y
CONFIG_IP_NF_MATCH_ECN=y
CONFIG_IP_NF_MATCH_DSCP=y
CONFIG_IP_NF_MATCH_AH_ESP=y
CONFIG_IP_NF_MATCH_LENGTH=y
CONFIG_IP_NF_MATCH_TTL=y
CONFIG_IP_NF_MATCH_TCPMSS=y
CONFIG_IP_NF_MATCH_HELPER=y
CONFIG_IP_NF_MATCH_STATE=y
CONFIG_IP_NF_MATCH_CONNTRACK=y
CONFIG_IP_NF_MATCH_UNCLEAN=y
CONFIG_IP_NF_MATCH_OWNER=y
CONFIG_IP_NF_FILTER=y
CONFIG_IP_NF_TARGET_REJECT=y
CONFIG_IP_NF_TARGET_MIRROR=y
CONFIG_IP_NF_NAT=y
CONFIG_IP_NF_NAT_NEEDED=y
CONFIG_IP_NF_TARGET_MASQUERADE=y
CONFIG_IP_NF_TARGET_REDIRECT=y
CONFIG_IP_NF_NAT_AMANDA=y
CONFIG_IP_NF_NAT_SNMP_BASIC=y
CONFIG_IP_NF_NAT_IRC=y
CONFIG_IP_NF_NAT_FTP=y
CONFIG_IP_NF_NAT_TFTP=y
CONFIG_IP_NF_MANGLE=y
CONFIG_IP_NF_TARGET_TOS=y
CONFIG_IP_NF_TARGET_ECN=y
CONFIG_IP_NF_TARGET_DSCP=y
CONFIG_IP_NF_TARGET_MARK=y
CONFIG_IP_NF_TARGET_LOG=y
CONFIG_IP_NF_TARGET_ULOG=y
CONFIG_IP_NF_TARGET_TCPMSS=y
CONFIG_IP_NF_ARPTABLES=y
CONFIG_IP_NF_ARPFILTER=y
CONFIG_IP_NF_ARP_MANGLE=y
CONFIG_IPV6=y
CONFIG_IP6_NF_QUEUE=y
CONFIG_IP6_NF_IPTABLES=y
CONFIG_IP6_NF_MATCH_LIMIT=y
CONFIG_IP6_NF_MATCH_MAC=y
CONFIG_IP6_NF_MATCH_RT=y
CONFIG_IP6_NF_MATCH_OPTS=y
CONFIG_IP6_NF_MATCH_FRAG=y
```

## 2.4.27 do\_IRQ: stack overflow issues/questions

```
CONFIG_IP6_NF_MATCH_HL=y
CONFIG_IP6_NF_MATCH_MULTIPORT=y
CONFIG_IP6_NF_MATCH_OWNER=y
CONFIG_IP6_NF_MATCH_MARK=y
CONFIG_IP6_NF_MATCH_IPV6HEADER=y
CONFIG_IP6_NF_MATCH_AHESP=y
CONFIG_IP6_NF_MATCH_LENGTH=y
CONFIG_IP6_NF_MATCH_EUI64=y
CONFIG_IP6_NF_FILTER=y
CONFIG_IP6_NF_TARGET_LOG=y
CONFIG_IP6_NF_MANGLE=y
CONFIG_IP6_NF_TARGET_MARK=y
CONFIG_IP_SCTP=y
CONFIG_SCTP_HMAC_MD5=y
CONFIG_VLAN_8021Q=y
CONFIG_BRIDGE=y
CONFIG_IDE=y
CONFIG_BLK_DEV_IDE=y
CONFIG_BLK_DEV_IDEDISK=y
CONFIG_IDEDISK_MULTI_MODE=y
CONFIG_BLK_DEV_IDECD=y
CONFIG_BLK_DEV_IDEPCI=y
CONFIG_IDEPCI_SHARE_IRQ=y
CONFIG_BLK_DEV_IDEDMA_PCI=y
CONFIG_IDEDMA_PCI_AUTO=y
CONFIG_BLK_DEV_IDEDMA=y
CONFIG_BLK_DEV_PIIX=y
CONFIG_IDEDMA_AUTO=y
CONFIG_SCSI=y
CONFIG_BLK_DEV_SD=y
CONFIG_SD_EXTRA_DEVS=40
CONFIG_CHR_DEV_ST=y
CONFIG_BLK_DEV_SR=y
CONFIG_BLK_DEV_SR_VENDOR=y
CONFIG_SR_EXTRA_DEVS=2
CONFIG_CHR_DEV_SG=y
CONFIG_SCSI_DEBUG_QUEUES=y
CONFIG_SCSI_MULTI_LUN=y
CONFIG_SCSI_CONSTANTS=y
CONFIG_SCSI_AIC79XX=y
CONFIG_AIC79XX_CMDS_PER_DEVICE=32
CONFIG_AIC79XX_RESET_DELAY_MS=15000
CONFIG_AIC79XX_DEBUG_MASK=0
CONFIG_SCSI_BUSLOGIC=y
CONFIG_SCSI_SYM53C8XX=y
CONFIG_SCSI_NCR53C8XX_DEFAULT_TAGS=4
CONFIG_SCSI_NCR53C8XX_MAX_TAGS=32
CONFIG_SCSI_NCR53C8XX_SYNC=20
CONFIG_NETDEVICES=y
CONFIG_BONDING=y
CONFIG_NET_ETHERNET=y
CONFIG_NET_PCI=y
CONFIG_PCNET32=y
CONFIG_E100=y
CONFIG_E1000=y
CONFIG_E1000_NAPI=y
CONFIG_NET_BROADCOM=y
CONFIG_PPP=y
CONFIG_PPP_MULTILINK=y
CONFIG_PPP_FILTER=y
CONFIG_PPP_ASYNC=y
CONFIG_PPP_SYNC_TTY=y
```

## 2.4.27 do\_IRQ: stack overflow issues/questions

```
CONFIG_PPP_DEFLATE=y
CONFIG_PPP_BSDCOMP=y
CONFIG_INPUT=y
CONFIG_INPUT_KEYBDEV=y
CONFIG_INPUT_MOUSEDEV=y
CONFIG_INPUT_MOUSEDEV_SCREEN_X=1024
CONFIG_INPUT_MOUSEDEV_SCREEN_Y=768
CONFIG_INPUT_EVDEV=y
CONFIG_INPUT_UINPUT=y
CONFIG_VT=y
CONFIG_VT_CONSOLE=y
CONFIG_SERIAL=y
CONFIG_SERIAL_CONSOLE=y
CONFIG_UNIX98_PTYS=y
CONFIG_UNIX98_PTY_COUNT=256
CONFIG_PRINTER=m
CONFIG_LP_CONSOLE=y
CONFIG_PPDEV=m
CONFIG_I2C=m
CONFIG_I2C_ALGOBIT=m
CONFIG_I2C_PHILIPSPAR=m
CONFIG_I2C_ELV=m
CONFIG_I2C_VELLEMANN=m
CONFIG_SCx200_ACB=m
CONFIG_I2C_ALGOPCF=m
CONFIG_I2C_ELEKTOR=m
CONFIG_I2C_CHARDEV=m
CONFIG_I2C_PROC=m
CONFIG_MOUSE=y
CONFIG_PSMOUSE=y
CONFIG_INTEL_RNG=y
CONFIG_HW_RANDOM=y
CONFIG_AUTOFS4_FS=y
CONFIG_EXT3_FS=y
CONFIG_JBD=y
CONFIG_FAT_FS=y
CONFIG_MSDOS_FS=y
CONFIG_VFAT_FS=y
CONFIG_TMPFS=y
CONFIG_RAMFS=y
CONFIG_ISO9660_FS=y
CONFIG_JOLIET=y
CONFIG_PROC_FS=y
CONFIG_DEVFS_FS=y
CONFIG_DEVPTS_FS=y
CONFIG_EXT2_FS=y
CONFIG_XFS_FS=y
CONFIG_NFS_FS=y
CONFIG_NFS_V3=y
CONFIG_NFS_DIRECTIO=y
CONFIG_SUNRPC=y
CONFIG_LOCKD=y
CONFIG_LOCKD_V4=y
CONFIG_MSDOS_PARTITION=y
CONFIG_NLS=y
CONFIG_NLS_DEFAULT="iso8859-1"
CONFIG_NLS_CODEPAGE_437=y
CONFIG_NLS_ISO8859_1=y
CONFIG_NLS_ISO8859_15=y
CONFIG_NLS_UTF8=y
CONFIG_VGA_CONSOLE=y
CONFIG_SOUND=y
```

## 2.4.27 do\_IRQ: stack overflow issues/questions

```
CONFIG_USB=y
CONFIG_USB_EHCI_HCD=y
CONFIG_USB_UHCI_ALT=y
CONFIG_USB_HID=y
CONFIG_USB_HIDINPUT=y
CONFIG_USB_HIDDEV=y
CONFIG_USB_PEGASUS=m
CONFIG_USB_RTL8150=m
CONFIG_USB_KAWETH=m
CONFIG_USB_CATC=m
CONFIG_USB_CDCETHER=m
CONFIG_USB_USBNET=m
CONFIG_USB_SERIAL=m
CONFIG_USB_SERIAL_GENERIC=y
CONFIG_USB_SERIAL_BELKIN=m
CONFIG_USB_SERIAL_WHITEHEAT=m
CONFIG_USB_SERIAL_DIGI_ACCELEPORT=m
CONFIG_USB_SERIAL_EMPEG=m
CONFIG_USB_SERIAL_FTDI_SIO=m
CONFIG_USB_SERIAL_VISOR=m
CONFIG_USB_SERIAL_IPAQ=m
CONFIG_USB_SERIAL_IR=m
CONFIG_USB_SERIAL_EDGEPORT=m
CONFIG_USB_SERIAL_EDGEPORT_TI=m
CONFIG_USB_SERIAL_KEYSPAN_PDA=m
CONFIG_USB_SERIAL_KEYSPAN=m
CONFIG_USB_SERIAL_KEYSPAN_USA28=y
CONFIG_USB_SERIAL_KEYSPAN_USA28X=y
CONFIG_USB_SERIAL_KEYSPAN_USA28XA=y
CONFIG_USB_SERIAL_KEYSPAN_USA28XB=y
CONFIG_USB_SERIAL_KEYSPAN_USA19=y
CONFIG_USB_SERIAL_KEYSPAN_USA18X=y
CONFIG_USB_SERIAL_KEYSPAN_USA19W=y
CONFIG_USB_SERIAL_KEYSPAN_USA19QW=y
CONFIG_USB_SERIAL_KEYSPAN_USA19QI=y
CONFIG_USB_SERIAL_KEYSPAN_MPR=y
CONFIG_USB_SERIAL_KEYSPAN_USA49W=y
CONFIG_USB_SERIAL_KEYSPAN_USA49WLC=y
CONFIG_USB_SERIAL_MCT_U232=m
CONFIG_USB_SERIAL_KLSI=m
CONFIG_USB_SERIAL_KOBIL_SCT=m
CONFIG_USB_SERIAL_PL2303=m
CONFIG_USB_SERIAL_CYBERJACK=m
CONFIG_USB_SERIAL_XIRCOM=m
CONFIG_USB_SERIAL_OMNINET=m
CONFIG_DEBUG_KERNEL=y
CONFIG_DEBUG_STACKOVERFLOW=y
CONFIG_DEBUG_IOVIRT=y
CONFIG_MAGIC_SYSRQ=y
CONFIG_DEBUG_SPINLOCK=y
CONFIG_FRAME_POINTER=y
CONFIG_LOG_BUF_SHIFT=0
CONFIG_CRC32=y
CONFIG_ZLIB_INFLATE=y
CONFIG_ZLIB_DEFLATE=y
```

## 2.4.27 do\_IRQ: stack overflow issues/questions

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