
Subject: Re: [PATCH] Report that kernel is tainted if there were an OOPS before (v2)

Posted by [Pavel Emelianov](#) on Fri, 01 Jun 2007 07:33:16 GMT

[View Forum Message](#) <> [Reply to Message](#)

Jan Engelhardt wrote:

> This seems to have died and remain unmerged as of yet... resubmit?

Yes. I remember this. I will rework the patch in a few days.

Thanks,
Pavel

>

> On Apr 17 2007 12:58, Pavel Emelianov wrote:

>

>> Date: Tue, 17 Apr 2007 12:58:47 +0400

>> From: Pavel Emelianov <xemul@sw.ru>

>> To: Andrew Morton <akpm@osdl.org>,

>> Linux Kernel Mailing List <linux-kernel@vger.kernel.org>,

>> linux-arch@vger.kernel.org

>> Cc: randy.dunlap@oracle.com, devel@openvz.org

>> Subject: [PATCH] Report that kernel is tainted if there were an OOPS before (v2)

>>

>> If the kernel OOPS-ed or BUG-ed then it probably should
>> considered as tainted. Use die_counter introduced by many
>> architectures to determine whether or not the kernel died.

>>

>> This saves a lot of time explaining oddities in the
>> calltrace seen via SysRq-P.

>>

>> Signed-off-by: Pavel Emelianov <xemul@openvz.org>

>> Signed-off-by: Kirill Korotaev <dev@openvz.org>

>> Cc: Randy Dunlap <randy.dunlap@oracle.com>

>>

>> ---

>>

>> diff --git a/Documentation/oops-tracing.txt b/Documentation/oops-tracing.txt

>> index ea55ea8..dddbfe0 100644

>> --- a/Documentation/oops-tracing.txt

>> +++ b/Documentation/oops-tracing.txt

>> @@ -240,6 +240,10 @@ characters, each representing a particul

>> 7: 'U' if a user or user application specifically requested that the

>> Tainted flag be set, ' ' otherwise.

>>

>> + 8: 'D' if a kernel has died recently, i.e. there was an OOPS or BUG

>> + before, ' ' otherwise. This is useful when seeing the calltrace

```

>> +    from SysRq-P output.
>> +
>> The primary reason for the 'Tainted: ' string is to tell kernel
>> debuggers if this is a clean kernel or if anything unusual has
>> occurred. Tainting is permanent: even if an offending module is
>> diff --git a/arch/arm/kernel/traps.c b/arch/arm/kernel/traps.c
>> index b3ffba1..764526c 100644
>> --- a/arch/arm/kernel/traps.c
>> +++ b/arch/arm/kernel/traps.c
>> @@ -207,7 +207,6 @@ void show_stack(struct task_struct *tsk,
>> static void __die(const char *str, int err, struct thread_info *thread, struct pt_regs *regs)
>> {
>>     struct task_struct *tsk = thread->task;
>>     - static int die_counter;
>>
>>     printk("Internal error: %s: %x [%#d]\n", str, err, ++die_counter);
>>     print_modules();
>> diff --git a/arch/avr32/kernel/traps.c b/arch/avr32/kernel/traps.c
>> index c8b7153..0829ebc 100644
>> --- a/arch/avr32/kernel/traps.c
>> +++ b/arch/avr32/kernel/traps.c
>> @@ -156,8 +156,6 @@ static DEFINE_SPINLOCK(die_lock);
>>
>> void NORET_TYPE die(const char *str, struct pt_regs *regs, long err)
>> {
>>     - static int die_counter;
>>     -
>>     console_verbose();
>>     spin_lock_irq(&die_lock);
>>     bust_spinlocks(1);
>> diff --git a/arch/i386/kernel/traps.c b/arch/i386/kernel/traps.c
>> index 35d1c38..8531901 100644
>> --- a/arch/i386/kernel/traps.c
>> +++ b/arch/i386/kernel/traps.c
>> @@ -438,7 +438,6 @@ void die(const char * str, struct pt_reg
>>     .lock_owner = -1,
>>     .lock_owner_depth = 0
>> };
>>     - static int die_counter;
>>     unsigned long flags;
>>
>>     oops_enter();
>> diff --git a/arch/ia64/kernel/traps.c b/arch/ia64/kernel/traps.c
>> index 5bfb8be..7a1e8d8 100644
>> --- a/arch/ia64/kernel/traps.c
>> +++ b/arch/ia64/kernel/traps.c
>> @@ -47,7 +47,6 @@ die (const char *str, struct pt_regs *re
>>     .lock_owner = -1,

```

```

>> .lock_owner_depth = 0
>> };
>> - static int die_counter;
>> int cpu = get_cpu();
>>
>> if (die.lock_owner != cpu) {
>> diff --git a/arch/mips/kernel/traps.c b/arch/mips/kernel/traps.c
>> index 27c53f1..2c65120 100644
>> --- a/arch/mips/kernel/traps.c
>> +++ b/arch/mips/kernel/traps.c
>> @@ -312,7 +312,6 @@ static DEFINE_SPINLOCK(die_lock);
>>
>> NORET_TYPE void ATTRIB_NORET die(const char * str, struct pt_regs * regs)
>> {
>> - static int die_counter;
>> #ifdef CONFIG_MIPS_MT_SMT
>> unsigned long dvpret = dvpe();
>> #endif /* CONFIG_MIPS_MT_SMT */
>> diff --git a/arch/powerpc/kernel/traps.c b/arch/powerpc/kernel/traps.c
>> index bf6445a..13bc4c7 100644
>> --- a/arch/powerpc/kernel/traps.c
>> +++ b/arch/powerpc/kernel/traps.c
>> @@ -105,7 +105,6 @@ int die(const char *str, struct pt_regs
>> .lock_owner = -1,
>> .lock_owner_depth = 0
>> };
>> - static int die_counter;
>> unsigned long flags;
>>
>> if (debugger(regs))
>> diff --git a/arch/ppc/kernel/traps.c b/arch/ppc/kernel/traps.c
>> index 810f7aa..3a058fb 100644
>> --- a/arch/ppc/kernel/traps.c
>> +++ b/arch/ppc/kernel/traps.c
>> @@ -76,7 +76,6 @@ DEFINE_SPINLOCK(die_lock);
>>
>> int die(const char * str, struct pt_regs * fp, long err)
>> {
>> - static int die_counter;
>> int nl = 0;
>> console_verbose();
>> spin_lock_irq(&die_lock);
>> diff --git a/arch/s390/kernel/traps.c b/arch/s390/kernel/traps.c
>> index 90ca82b..659f41c 100644
>> --- a/arch/s390/kernel/traps.c
>> +++ b/arch/s390/kernel/traps.c
>> @@ -251,8 +251,6 @@ static DEFINE_SPINLOCK(die_lock);
>>

```

```

>> void die(const char * str, struct pt_regs * regs, long err)
>> {
>> - static int die_counter;
>> -
>> debug_stop_all();
>> console_verbose();
>> spin_lock_irq(&die_lock);
>> diff --git a/arch/sh/kernel/traps.c b/arch/sh/kernel/traps.c
>> index e9f168f..38ae9de 100644
>> --- a/arch/sh/kernel/traps.c
>> +++ b/arch/sh/kernel/traps.c
>> @@ -78,8 +78,6 @@ DEFINE_SPINLOCK(die_lock);
>>
>> void die(const char * str, struct pt_regs * regs, long err)
>> {
>> - static int die_counter;
>> -
>> console_verbose();
>> spin_lock_irq(&die_lock);
>> bust_spinlocks(1);
>> diff --git a/arch/sparc/kernel/traps.c b/arch/sparc/kernel/traps.c
>> index dc9ffea..b9b4ddd 100644
>> --- a/arch/sparc/kernel/traps.c
>> +++ b/arch/sparc/kernel/traps.c
>> @@ -89,7 +89,6 @@ void instruction_dump (unsigned long *pc
>>
>> void die_if_kernel(char *str, struct pt_regs *regs)
>> {
>> - static int die_counter;
>> int count = 0;
>>
>> /* Amuse the user. */
>> diff --git a/arch/sparc64/kernel/traps.c b/arch/sparc64/kernel/traps.c
>> index dc652f2..556189b 100644
>> --- a/arch/sparc64/kernel/traps.c
>> +++ b/arch/sparc64/kernel/traps.c
>> @@ -2208,7 +2208,6 @@ static inline struct reg_window *kernel_
>>
>> void die_if_kernel(char *str, struct pt_regs *regs)
>> {
>> - static int die_counter;
>> extern void smp_report_regs(void);
>> int count = 0;
>>
>> diff --git a/arch/x86_64/kernel/traps.c b/arch/x86_64/kernel/traps.c
>> index e5403dc..93c4215 100644
>> --- a/arch/x86_64/kernel/traps.c
>> +++ b/arch/x86_64/kernel/traps.c

```

```

>> @@ -570,7 +570,6 @@ void __kprobes oops_end(unsigned long fl
>>
>> void __kprobes __die(const char * str, struct pt_regs * regs, long err)
>> {
>> - static int die_counter;
>> printk(KERN_EMERG "%s: %04lx [%u] ", str, err & 0xffff, ++die_counter);
>> #ifdef CONFIG_PREEMPT
>> printk("PREEMPT ");
>> diff --git a/arch/xtensa/kernel/traps.c b/arch/xtensa/kernel/traps.c
>> index 693ab26..97cc4e2 100644
>> --- a/arch/xtensa/kernel/traps.c
>> +++ b/arch/xtensa/kernel/traps.c
>> @@ -465,7 +465,6 @@ DEFINE_SPINLOCK(die_lock);
>>
>> void die(const char * str, struct pt_regs * regs, long err)
>> {
>> - static int die_counter;
>> int nl = 0;
>>
>> console_verbose();
>> diff --git a/include/linux/kernel.h b/include/linux/kernel.h
>> index b8f8252..54c4fc4 100644
>> --- a/include/linux/kernel.h
>> +++ b/include/linux/kernel.h
>> @@ -202,6 +202,7 @@ extern enum system_states {
>> #define TAINT_USER (1<<6)
>>
>> extern void dump_stack(void);
>> +extern int die_counter;
>>
>> #ifdef DEBUG
>> /* If you are writing a driver, please use dev_dbg instead */
>> diff --git a/kernel/panic.c b/kernel/panic.c
>> index 623d182..e75eea4 100644
>> --- a/kernel/panic.c
>> +++ b/kernel/panic.c
>> @@ -150,23 +150,27 @@ EXPORT_SYMBOL(panic);
>> * 'R' - User forced a module unload.
>> * 'M' - Machine had a machine check experience.
>> * 'B' - System has hit bad_page.
>> + * 'D' - An OOPS or BUG has happened.
>> * 'U' - Userspace-defined naughtiness.
>> *
>> * The string is overwritten by the next call to print_taint().
>> */
>> +
>> +int die_counter;
>>

```

```

>> const char *print_tainted(void)
>> {
>> static char buf[20];
>> - if (tainted) {
>> - sprintf(buf, sizeof(buf), "Tainted: %c%c%c%c%c%c%c%c",
>> + if (tainted || die_counter) {
>> + sprintf(buf, sizeof(buf), "Tainted: %c%c%c%c%c%c%c%c",
>>   tainted & Taint_PROPRIETARY_MODULE ? 'P' : 'G',
>>   tainted & Taint_FORCED_MODULE ? 'F' : '',
>>   tainted & Taint_UNSAFE_SMP ? 'S' : '',
>>   tainted & Taint_FORCED_RMMOD ? 'R' : '',
>>   tainted & Taint_MACHINE_CHECK ? 'M' : '',
>>   tainted & Taint_BAD_PAGE ? 'B' : '',
>> -   tainted & Taint_USER ? 'U' : '');
>> +   tainted & Taint_USER ? 'U' : '',
>> +   die_counter ? 'D' : '');
>> }
>> else
>>   sprintf(buf, sizeof(buf), "Not tainted");
>> -
>> To unsubscribe from this list: send the line "unsubscribe linux-kernel" in
>> the body of a message to majordomo@vger.kernel.org
>> More majordomo info at http://vger.kernel.org/majordomo-info.html
>> Please read the FAQ at http://www.tux.org/lkml/
>>
> -
> To unsubscribe from this list: send the line "unsubscribe linux-kernel" in
> the body of a message to majordomo@vger.kernel.org
> More majordomo info at http://vger.kernel.org/majordomo-info.html
> Please read the FAQ at http://www.tux.org/lkml/
>

```
