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author Roman Gushchin <roman.gushchin@linux.dev> 2023-03-08 14:26:02 -0800
committer Greg Kroah-Hartman <gregkh@linuxfoundation.org> 2023-03-22 13:31:32 +0100
commit [86afb633beaa02ee95b5126a14c9f22cfade4fd9](#) (patch)
tree [fe2d7f939f71b8fb8df8d32d8d73afaa3ed5ccba](#)
parent [250a11f9c43b3b7acc3622c0ec82a884bc6dffc9](#) (diff)
download [linux-86afb633beaa02ee95b5126a14c9f22cfade4fd9.tar.gz](#)

diff options

context: 3 ▼
space: include ▼
mode: unified ▼

firmware: xilinx: don't make a sleepable memory allocation from an atomic context

commit 38ed310c22e7a0fc978b1f8292136a4a4a8b3051 upstream.

The following issue was discovered using lockdep:

```
[ 6.691371] BUG: sleeping function called from invalid context at include/linux/sched/mm.h:209
[ 6.694602] in_atomic(): 1, irqs_disabled(): 128, non_block: 0, pid: 1, name: swapper/0
[ 6.702431] 2 locks held by swapper/0/1:
[ 6.706300] #0: ffffffff8800f6f188 (&dev->mutex){...}-[3:3], at: __device_driver_lock+0x4c/0x90
[ 6.714900] #1: ffffffff009a2abb8 (enable_lock){...}-[2:2], at: clk_enable_lock+0x4c/0x140
[ 6.723156] irq event stamp: 304030
[ 6.726596] hardirqs last enabled at (304029): [<ffffffc008d17ee0>] _raw_spin_unlock_irqrestore+0xc0/0xd0
[ 6.736142] hardirqs last disabled at (304030): [<ffffffc00876bc5c>] clk_enable_lock+0xfc/0x140
[ 6.744742] softirqs last enabled at (303958): [<ffffffc0080904f0>] _stext+0x4f0/0x894
[ 6.752655] softirqs last disabled at (303951): [<ffffffc0080e53b8>] irq_exit+0x238/0x280
[ 6.760744] CPU: 1 PID: 1 Comm: swapper/0 Tainted: G      U      5.15.36 #2
[ 6.768048] Hardware name: xlnx,zynqmp (DT)
[ 6.772179] Call trace:
[ 6.774584] dump_backtrace+0x0/0x300
[ 6.778197] show_stack+0x18/0x30
[ 6.781465] dump_stack_lvl+0xb8/0xec
[ 6.785077] dump_stack+0x1c/0x38
[ 6.788345] __might_sleep+0x1a8/0x2a0
[ 6.792129] __might_sleep+0x6c/0xd0
[ 6.795655] kmem_cache_alloc_trace+0x270/0x3d0
[ 6.800127] do_feature_check_call+0x100/0x220
[ 6.804513] zynqmp_pm_invoke_fn+0x8c/0xb0
[ 6.808555] zynqmp_pm_clock_getstate+0x90/0xe0
[ 6.813027] zynqmp_pll_is_enabled+0x8c/0x120
[ 6.817327] zynqmp_pll_enable+0x38/0xc0
[ 6.821197] clk_core_enable+0x144/0x400
[ 6.825067] clk_core_enable+0xd4/0x400
[ 6.828851] clk_core_enable+0xd4/0x400
[ 6.832635] clk_core_enable+0xd4/0x400
[ 6.836419] clk_core_enable+0xd4/0x400
[ 6.840203] clk_core_enable+0xd4/0x400
[ 6.843987] clk_core_enable+0xd4/0x400
[ 6.847771] clk_core_enable+0xd4/0x400
[ 6.851555] clk_core_enable_lock+0x24/0x50
[ 6.855683] clk_enable+0x24/0x40
[ 6.858952] fclk_probe+0x84/0xf0
[ 6.862220] platform_probe+0x8c/0x110
[ 6.865918] really_probe+0x110/0x5f0
[ 6.869530] __driver_probe_device+0xcc/0x210
[ 6.873830] driver_probe_device+0x64/0x140
[ 6.877958] __driver_attach+0x114/0x1f0
[ 6.881828] bus_for_each_dev+0xe8/0x160
[ 6.885698] driver_attach+0x34/0x50
[ 6.889224] bus_add_driver+0x228/0x300
[ 6.893008] driver_register+0xc0/0x1e0
[ 6.896792] __platform_driver_register+0x44/0x60
```

```
[ 6.901436] fclk_driver_init+0x1c/0x28
[ 6.905220] do_one_initcall+0x104/0x590
[ 6.909091] kernel_init_freeable+0x254/0x2bc
[ 6.913390] kernel_init+0x24/0x130
[ 6.916831] ret_from_fork+0x10/0x20
```

Fix it by passing the GFP_ATOMIC gfp flag for the corresponding memory allocation.

Fixes: acfdd18591ea ("firmware: xilinx: Use hash-table for api feature check")
Cc: stable <stable@kernel.org>
Signed-off-by: Roman Gushchin <roman.gushchin@linux.dev>
Cc: Amit Sunil Dhamne <amit.sunil.dhamne@xilinx.com>
Cc: Michal Simek <michal.simek@xilinx.com>
Cc: linux-arm-kernel@lists.infradead.org
Cc: linux-kernel@vger.kernel.org
Link: <https://lore.kernel.org/r/20230308222602.123866-1-roman.gushchin@linux.dev>
Signed-off-by: Greg Kroah-Hartman <gregkh@linuxfoundation.org>

Diffstat

-rw-r--r-- drivers/firmware/xilinx/zynqmp.c 2

1 files changed, 1 insertions, 1 deletions

```
diff --git a/drivers/firmware/xilinx/zynqmp.c b/drivers/firmware/xilinx/zynqmp.c
index a3cadbaf3cba77..0dac35406a38d8 100644
--- a/drivers/firmware/xilinx/zynqmp.c
+++ b/drivers/firmware/xilinx/zynqmp.c
@@ -171,7 +171,7 @@ static int zynqmp_pm_feature(u32 api_id)
     }

     /* Add new entry if not present */
-    feature_data = kmalloc(sizeof(*feature_data), GFP_KERNEL);
+    feature_data = kmalloc(sizeof(*feature_data), GFP_ATOMIC);
     if (!feature_data)
         return -ENOMEM;
```