author	Chen Zhongjin <chenzhongjin@huawei.com>	2022-10-27 20:13:53 +0800
committer	Greg Kroah-Hartman <gregkh@linuxfoundation.org>	2022-11-10 18:17:30 +0100
commit	fe51636fffc8108c7c4da6aa393010e786530ad9 (patch)	
tree	3fdde71b000855d00dd9333d8b6193cc2ae960ca	
parent	3d6e1df42610d7c339d8bed4011311f975b5d019 (diff)	
download	linux-fe51636fffc8108c7c4da6aa393010e786530ad9.tar.gz	

i2c: piix4: Fix adapter not be removed in piix4_remove()

```
[ Upstream commit 569bea74c94d37785682b11bab76f557520477cd ]

In piix4_probe(), the piix4 adapter will be registered in:

   piix4_probe()
     piix4_add_adapters_sb800() / piix4_add_adapter()
       i2c_add_adapter()

Based on the probed device type, piix4_add_adapters_sb800() or single
piix4_add_adapter() will be called.
For the former case, piix4_adapter_count is set as the number of adapters,
while for antoher case it is not set and kept default *zero*.

When piix4 is removed, piix4_remove() removes the adapters added in
piix4_probe(), basing on the piix4_adapter_count value.
Because the count is zero for the single adapter case, the adapter won't
be removed and makes the sources allocated for adapter leaked, such as
the i2c client and device.

These sources can still be accessed by i2c or bus and cause problems.
An easily reproduced case is that if a new adapter is registered, i2c
will get the leaked adapter and try to call smbus_algorithm, which was
already freed:

Triggered by: rmmod i2c_piix4 && modprobe max31730

 BUG: unable to handle page fault for address: ffffffffc053d860
 #PF: supervisor read access in kernel mode
 #PF: error_code(0x0000) - not-present page
 Oops: 0000 [#1] PREEMPT SMP KASAN
 CPU: 0 PID: 3752 Comm: modprobe Tainted: G
 Hardware name: QEMU Standard PC (i440FX + PIIX, 1996)
 RIP: 0010:i2c_default_probe (drivers/i2c/i2c-core-base.c:2259) i2c_core
 RSP: 0018:ffff888107477710 EFLAGS: 00000246
 ...
 <TASK>
  i2c_detect (drivers/i2c/i2c-core-base.c:2302) i2c_core
  __process_new_driver (drivers/i2c/i2c-core-base.c:1336) i2c_core
  bus_for_each_dev (drivers/base/bus.c:301)
  i2c_for_each_dev (drivers/i2c/i2c-core-base.c:1823) i2c_core
  i2c_register_driver (drivers/i2c/i2c-core-base.c:1861) i2c_core
  do_one_initcall (init/main.c:1296)
```

```
  do_init_module (kernel/module/main.c:2455)
  ...
 </TASK>
 ---[ end trace 0000000000000000 ]---
```

Fix this problem by correctly set piix4_adapter_count as 1 for the
single adapter so it can be normally removed.

Fixes: 528d53a1592b ("i2c: piix4: Fix probing of reserved ports on AMD Family 16h Model 30h")
Signed-off-by: Chen Zhongjin <chenzhongjin@huawei.com>
Reviewed-by: Jean Delvare <jdelvare@suse.de>
Signed-off-by: Wolfram Sang <wsa@kernel.org>
Signed-off-by: Sasha Levin <sashal@kernel.org>

Diffstat

-rw-r--r--	drivers/i2c/busses/i2c-piix4.c	1

1 files changed, 1 insertions, 0 deletions

```
diff --git a/drivers/i2c/busses/i2c-piix4.c b/drivers/i2c/busses/i2c-piix4.c
index 39cb1b7bb8656c..809fbd014cd683 100644
--- a/drivers/i2c/busses/i2c-piix4.c
+++ b/drivers/i2c/busses/i2c-piix4.c
@@ -1080,6 +1080,7 @@ static int piix4_probe(struct pci_dev *dev, const struct pci_device_id *id)
                                             "", &piix4_main_adapters[0]);
                if (retval < 0)
                        return retval;
+               piix4_adapter_count = 1;
        }

        /* Check for auxiliary SMBus on some AMD chipsets */
```