



author Chen Zhongjin <chenzhongjin@huawei.com> 2022-10-26 10:03:21 +0800  
committer Greg Kroah-Hartman <gregkh@linuxfoundation.org> 2022-11-10 15:47:20 +0100  
commit [935b4beb724946a37ceb97191592d4879d3a3a3](#) (patch)  
tree [878d4de8ff47157f3f0aa56b2ea6497a16f3bb30](#)  
parent [aae35a0c8a775fa4afa6a4e7dab3f936f1f89bbb](#) (diff)  
download [linux-935b4beb724946a37ceb97191592d4879d3a3a3.tar.gz](#)

### diff options

context:  ▼  
space:  ▼  
mode:  ▼

## net: dsa: Fix possible memory leaks in dsa\_loop\_init()

[ Upstream commit 633efc8b3dc96f56f5a57f2a49764853a2fa3f50 ]

kmemleak reported memory leaks in dsa\_loop\_init():

kmemleak: 12 new suspected memory leaks

unreferenced object 0xffff8880138ce000 (size 2048):  
comm "modprobe", pid 390, jiffies 4295040478 (age 238.976s)  
backtrace:

```
[<0000000006a94f1d5>] kmalloc_trace+0x26/0x60  
[<000000000a9c44622>] phy_device_create+0x5d/0x970  
[<000000000d0ee2afc>] get_phy_device+0xf3/0x2b0  
[<000000000dca0c71f>] __fixed_phy_register.part.0+0x92/0x4e0  
[<0000000008a834798>] fixed_phy_register+0x84/0xb0  
[<00000000055223fcb>] dsa_loop_init+0xa9/0x116 [dsa_loop]  
...
```

There are two reasons for memleak in dsa\_loop\_init().

First, fixed\_phy\_register() create and register phy\_device:

```
fixed_phy_register()  
  get_phy_device()  
    phy_device_create() # freed by phy_device_free()  
    phy_device_register() # freed by phy_device_remove()
```

But fixed\_phy\_unregister() only calls phy\_device\_remove().  
So the memory allocated in phy\_device\_create() is leaked.

Second, when mdio\_driver\_register() fail in dsa\_loop\_init(),  
it just returns and there is no cleanup for phydevs.

Fix the problems by catching the error of mdio\_driver\_register()  
in dsa\_loop\_init(), then calling both fixed\_phy\_unregister() and  
phy\_device\_free() to release phydevs.

Also add a function for phydevs cleanup to avoid duplicate.

Fixes: 98cd1552ea27 ("net: dsa: Mock-up driver")  
Signed-off-by: Chen Zhongjin <chenzhongjin@huawei.com>  
Signed-off-by: David S. Miller <davem@davemloft.net>  
Signed-off-by: Sasha Levin <sashal@kernel.org>

## Diffstat

```
-rw-r--r-- drivers/net/dsa/dsa_loop.c 25
```

1 files changed, 18 insertions, 7 deletions

```
diff --git a/drivers/net/dsa/dsa_loop.c b/drivers/net/dsa/dsa_loop.c
```

```
index a5a83d86bb0f51..dbd21f95a7000b 100644
```

```
--- a/drivers/net/dsa/dsa_loop.c
```

```
+++ b/drivers/net/dsa/dsa_loop.c
```

```
@@ -330,6 +330,17 @@ static struct mdio_driver dsa_loop_drv = {
```

```
    #define NUM_FIXED_PHYS (DSA_LOOP_NUM_PORTS - 2)
```

```
+static void dsa_loop_phydevs_unregister(void)
```

```
+{  
+    unsigned int i;  
+  
+    for (i = 0; i < NUM_FIXED_PHYS; i++)  
+        if (!IS_ERR(phydevs[i])) {  
+            fixed_phy_unregister(phydevs[i]);  
+            phy_device_free(phydevs[i]);  
+        }  
+}
```

```
+}
```

```
+
```

```
static int __init dsa_loop_init(void)
```

```
{  
    struct fixed_phy_status status = {  
@@ -337,23 +348,23 @@ static int __init dsa_loop_init(void)
```

```
        .speed = SPEED_100,  
        .duplex = DUPLEX_FULL,
```

```
    };
```

```
-    unsigned int i;
```

```
+    unsigned int i, ret;
```

```
    for (i = 0; i < NUM_FIXED_PHYS; i++)
```

```
        phydevs[i] = fixed_phy_register(PHY_POLL, &status, -1, NULL);
```

```
-    return mdio_driver_register(&dsa_loop_drv);
```

```
+    ret = mdio_driver_register(&dsa_loop_drv);
```

```
+    if (ret)
```

```
+        dsa_loop_phydevs_unregister();
```

```
+
```

```
+    return ret;
```

```
}
```

```
module_init(dsa_loop_init);
```

```
static void __exit dsa_loop_exit(void)
```

```
{
```

```
-    unsigned int i;
```

```
-
```

```
    mdio_driver_unregister(&dsa_loop_drv);
```

```
-    for (i = 0; i < NUM_FIXED_PHYS; i++)
```

```
-        if (!IS_ERR(phydevs[i]))
```

```
-            fixed_phy_unregister(phydevs[i]);
```

```
+    dsa_loop_phydevs_unregister();
```

```
}
```

```
module_exit(dsa_loop_exit);
```