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committer David S. Miller <davem@davemloft.net> 2022-11-02 11:57:30 +0000
commit e97c089d7a49f67027395ddf70bf327eeac2611e (patch)
tree 4ddf5f5a5072b07715f6d3786bc2c09337eacf67
parent ecaf75ffd5f5db320d8b1da0198eef5a5ce64a3f (diff)
download linux-e97c089d7a49f67027395ddf70bf327eeac2611e.tar.gz

diff options

context: 3
space: include
mode: unified

rose: Fix NULL pointer dereference in rose_send_frame()

The syzkaller reported an issue:

```
KASAN: null-ptr-deref in range [0x0000000000000380-0x0000000000000387]
CPU: 0 PID: 4069 Comm: kworker/0:15 Not tainted 6.0.0-syzkaller-02734-g0326074ff465 #0
Hardware name: Google Google Compute Engine/Google Compute Engine, BIOS Google 09/22/2022
Workqueue: rcu_gp srcu_invoke_callbacks
RIP: 0010:rose_send_frame+0x1dd/0x2f0 net/rose/rose_link.c:101
Call Trace:
<IRQ>
  rose_transmit_clear_request+0x1d5/0x290 net/rose/rose_link.c:255
  rose_rx_call_request+0x4c0/0x1bc0 net/rose/af_rose.c:1009
  rose_loopback_timer+0x19e/0x590 net/rose/rose_loopback.c:111
  call_timer_fn+0x1a0/0x6b0 kernel/time/timer.c:1474
  expire_timers kernel/time/timer.c:1519 [inline]
  __run_timers.part.0+0x674/0xa80 kernel/time/timer.c:1790
  __run_timers kernel/time/timer.c:1768 [inline]
  run_timer_softirq+0xb3/0x1d0 kernel/time/timer.c:1803
  __do_softirq+0x1d0/0x9c8 kernel/softirq.c:571
  [...]
</IRQ>
```

It triggers NULL pointer dereference when 'neigh->dev->dev_addr' is called in the rose_send_frame(). It's the first occurrence of the 'neigh' is in rose_loopback_timer() as 'rose_loopback_neigh', and the 'dev' in 'rose_loopback_neigh' is initialized as a nullptr.

It had been fixed by commit 3b3fd068c56e3f6ea30090859216a368398e39bf ("rose: Fix Null pointer dereference in rose_send_frame()") ever. But it's introduced by commit 3c53cd65dece47dd1f9d3a809f32e59d1d87b2b8 ("rose: check NULL rose_loopback_neigh->loopback") again.

We fix it by add NULL check in rose_transmit_clear_request(). When the 'dev' in 'neigh' is NULL, we don't reply the request and just clear it.

syzkaller don't provide repro, and I provide a syz repro like:

```
r0 = syz_init_net_socket$bt_sco(0x1f, 0x5, 0x2)
iocctl$sock_inet_SIOCSIFFLAGS(r0, 0x8914, &(0x7f0000000180)={'rose0\x00', 0x201})
r1 = syz_init_net_socket$rose(0xb, 0x5, 0x0)
bind$rose(r1, &(0x7f00000000c0)=@full={0xb, @dev, @null, 0x0, [@null, @null, @netrom, @netrom, @default, @null]}, 0x40)
connect$rose(r1, &(0x7f0000000240)=@short={0xb, @dev={0xbb, 0xbb, 0xbb, 0x1, 0x0}, @remote={0xcc, 0xcc, 0xcc, 0xcc, 0xcc, 0xcc, 0x1}, 0x1, @netrom={
```

Fixes: 3c53cd65dece ("rose: check NULL rose_loopback_neigh->loopback")

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Diffstat

```
-rw-r--r-- net/rose/rose_link.c 3
```

1 files changed, 3 insertions, 0 deletions

diff --git a/net/rose/rose_link.c b/net/rose/rose_link.c

index 8b96a56d3a49b3..0f77ae8ef944a7 100644

--- a/net/rose/rose_link.c

+++ b/net/rose/rose_link.c

```
@ -236,6 +236,9 @@ void rose_transmit_clear_request(struct rose_neigh *neigh, unsigned int lci, uns
    unsigned char *dptr;
    int len;

+    if (!neigh->dev)
+        return;
+
    len = AX25_BPQ_HEADER_LEN + AX25_MAX_HEADER_LEN + ROSE_MIN_LEN + 3;

    if ((skb = alloc_skb(len, GFP_ATOMIC)) == NULL)
```