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committer	Greg Kroah-Hartman <gregkh@linuxfoundation.org>	2025-04-25 10:51:14 +0200
commit	6b95947ee780f4e1fb26413a1437d05bcb99712b (patch)	
tree	15e528ea385be5f8fed4fd8c4b2c70707252b86e	
parent	1efd8852503540d8f03417be6c73daa3833dc8fc (diff)	
download	linux-6b95947ee780f4e1fb26413a1437d05bcb99712b.tar.gz	

diff options

context:

3

space:

include

mode:

unified

drm/nouveau: prime: fix ttm_bo_delayed_delete oops

commit 8ec0fbb28d049273bfd4f1e7a5ae4c74884beed3 upstream.

Fix an oops in ttm_bo_delayed_delete which results from dereferencing a dangling pointer:

```
Oops: general protection fault, probably for non-canonical address 0x6b6b6b6b6b6b7b: 0000 [#1] PREEMPT SMP
CPU: 4 UID: 0 PID: 1082 Comm: kworker/u65:2 Not tainted 6.14.0-rc4-00267-g505460b44513-dirty #216
Hardware name: LENOVO 82N6/LNVNB161216, BIOS GKCNG5WW 01/16/2024
Workqueue: ttm ttm_bo_delayed_delete [ttm]
RIP: 0010:dma_resv_iter_first_unlocked+0x55/0x290
Code: 31 f6 48 c7 c7 00 2b fa aa e8 97 bd 52 ff e8 a2 c1 53 00 5a 85 c0 74 48 e9 88 01 00 00 4c 89 63 20 4d 85 e4 0f 84 30 01 00 00 <41> 8b 44 24 10
RSP: 0018:ffffbf9383473d60 EFLAGS: 00010202
RAX: 0000000000000001 RBX: fffffbf9383473d88 RCX: 0000000000000000
RDX: 0000000000000000 RSI: 0000000000000000 RDI: 0000000000000000
RBP: fffffbf9383473d78 R08: 0000000000000000 R09: 0000000000000000
R10: 0000000000000000 R11: 0000000000000000 R12: 6b6b6b6b6b6b6b6b
R13: fffffa003bbf78580 R14: fffffa003a6728040 R15: 00000000000383cc
FS:  0000000000000000(0000) GS:ffffa00991c00000(0000) knlGS:0000000000000000
CS:  0010 DS:  0000 ES:  0000 CR0: 0000000080050033
CR2: 0000758348024dd0 CR3: 000000012c259000 CR4: 000000000f50ef0
PKRU: 55555554
Call Trace:
<TASK>
 ? __die_body.cold+0x19/0x26
 ? die_addr+0x3d/0x70
 ? exc_general_protection+0x159/0x460
 ? asm_exc_general_protection+0x27/0x30
 ? dma_resv_iter_first_unlocked+0x55/0x290
 dma_resv_wait_timeout+0x56/0x100
 ttm_bo_delayed_delete+0x69/0xb0 [ttm]
 process_one_work+0x217/0x5c0
 worker_thread+0x1c8/0x3d0
 ? apply_wqattrs_cleanup.part.0+0xc0/0xc0
 kthread+0x10b/0x240
 ? kthreads_online_cpu+0x140/0x140
 ret_from_fork+0x40/0x70
 ? kthreads_online_cpu+0x140/0x140
 ret_from_fork_asm+0x11/0x20
</TASK>
```

- The cause of this is:
- `drm_prime_gem_destroy` calls `dma_buf_put(dma_buf)` which releases the reference to the shared `dma_buf`. The reference count is 0, so the `dma_buf` is destroyed, which in turn decrements the corresponding `amdgpu_bo` reference count to 0, and the `amdgpu_bo` is destroyed - calling `drm_gem_object_release` then `dma_resv_fini` (which destroys the reservation object), then finally freeing the `amdgpu_bo`.
 - `nouveau_bo obj->bo.base.resv` is now a dangling pointer to the memory formerly allocated to the `amdgpu_bo`.
 - `nouveau_gem_object_del` calls `ttm_bo_put(&nvbo->bo)` which calls `ttm_bo_release`, which schedules `ttm_bo_delayed_delete`.
 - `ttm_bo_delayed_delete` runs and dereferences the dangling `resv` pointer, resulting in a general protection fault.

Fix this by moving the `drm_prime_gem_destroy` call from `nouveau_gem_object_del` to `nouveau_bo_del_ttm`. This ensures that it will be run after `ttm_bo_delayed_delete`.

Signed-off-by: Chris Bainbridge <chris.bainbridge@gmail.com>
Suggested-by: Christian König <christian.koenig@amd.com>
Fixes: 22b33e8ed0e3 ("nouveau: add PRIME support")
Closes: <https://gitlab.freedesktop.org/drm/amd/-/issues/3937>
Cc: Stable@vger.kernel.org
Signed-off-by: Danilo Krummrich <dakr@kernel.org>
Link: <https://patchwork.freedesktop.org/patch/msgid/Z-P4epVK8k7tFZ7C@debian.local>
Signed-off-by: Greg Kroah-Hartman <gregkh@linuxfoundation.org>

```
-rw-r--r-- drivers/gpu/drm/nouveau/nouveau_bo.c 3
-rw-r--r-- drivers/gpu/drm/nouveau/nouveau_gem.c 3
```

2 files changed, 3 insertions, 3 deletions

```
diff --git a/drivers/gpu/drm/nouveau/nouveau_bo.c b/drivers/gpu/drm/nouveau/nouveau_bo.c
index db961eade2257f..2016c1e7242fe3 100644
--- a/drivers/gpu/drm/nouveau/nouveau_bo.c
+++ b/drivers/gpu/drm/nouveau/nouveau_bo.c
@@ -144,6 +144,9 @@ nouveau_bo_del_ttm(struct ttm_buffer_object *bo)
     nouveau_bo_del_io_reserve_lru(bo);
     nv10_bo_put_tile_region(dev, nvbo->tile, NULL);

+    if (bo->base.import_attach)
+        drm_prime_gem_destroy(&bo->base, bo->sg);
+
     /*
      * If nouveau_bo_new() allocated this buffer, the GEM object was never
      * initialized, so don't attempt to release it.
diff --git a/drivers/gpu/drm/nouveau/nouveau_gem.c b/drivers/gpu/drm/nouveau/nouveau_gem.c
index 9ae2cee1c7c580..67e3c99de73ae6 100644
--- a/drivers/gpu/drm/nouveau/nouveau_gem.c
+++ b/drivers/gpu/drm/nouveau/nouveau_gem.c
@@ -87,9 +87,6 @@ nouveau_gem_object_del(struct drm_gem_object *gem)
     return;
 }

-    if (gem->import_attach)
-        drm_prime_gem_destroy(gem, nvbo->bo.sg);
-
     ttm_bo_put(&nvbo->bo);

     pm_runtime_mark_last_busy(dev);
```