author	Alex Hung <alex.hung@amd.com>	2023-01-11 09:54:11 -0700
committer	Greg Kroah-Hartman <gregkh@linuxfoundation.org>	2023-03-22 13:30:02 +0100
commit	7257070be70e19a9138f39009c1a26c83a8a7cfa (patch)	
tree	abbc315b2f9992466c8a900f44c24ff1cc9daba0	
parent	ab7da8d93a6ff68a921b6dffbfb8c463e606517c (diff)	
download	linux-7257070be70e19a9138f39009c1a26c83a8a7cfa.tar.gz	

diff options

context: 3

space: include

mode: unified

drm/amd/display: fix shift-out-of-bounds in CalculateVMAndRowBytes

```
[ Upstream commit 031f196d1b1b6d5dfcb0533b431e3ab1750e6189 ]

[WHY]
When PTEBufferSizeInRequests is zero, UBSAN reports the following
warning because dml_log2 returns an unexpected negative value:

  shift exponent 4294966273 is too large for 32-bit type 'int'

[HOW]

In the case PTEBufferSizeInRequests is zero, skip the dml_log2() and
assign the result directly.

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```

Diffstat

-rw-r--r-- drivers/gpu/drm/amd/display/dc/dml/dcn30/display_mode_vba_30.c 5

1 files changed, 4 insertions, 1 deletions

```
diff --git a/drivers/gpu/drm/amd/display/dc/dml/dcn30/display_mode_vba_30.c b/drivers/gpu/drm/amd/display/dc/dml/dcn30/display_mode_vba_30.c
index e427f4ffa08074..e5b1002d7f3f0c 100644
--- a/drivers/gpu/drm/amd/display/dc/dml/dcn30/display_mode_vba_30.c
+++ b/drivers/gpu/drm/amd/display/dc/dml/dcn30/display_mode_vba_30.c
@@ -1868,7 +1868,10 @@ static unsigned int CalculateVMAndRowBytes(
        }

        if (SurfaceTiling == dm_sw_linear) {
-               *dpte_row_height = dml_min(128, 1 << (unsigned int) dml_floor(dml_log2(PTEBufferSizeInRequests * *PixelPTEReqWidth / Pitch), 1));
+               if (PTEBufferSizeInRequests == 0)
+                       *dpte_row_height = 1;
+               else
+                       *dpte_row_height = dml_min(128, 1 << (unsigned int) dml_floor(dml_log2(PTEBufferSizeInRequests * *PixelPTEReqWidth / Pitch),
                *dpte_row_width_ub = (dml_ceil(((double) SwathWidth - 1) / *PixelPTEReqWidth, 1) + 1) * *PixelPTEReqWidth;
                *PixelPTEBytesPerRow = *dpte_row_width_ub / *PixelPTEReqWidth * *PTERequestSize;
        } else if (ScanDirection != dm_vert) {
```