Subject: [PATCH] Fix and allocate less memory for ->priv'less netdevices
Posted by Alexey Dobriyan on Fri, 18 Apr 2008 15:10:29 GMT
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This patch effectively reverts commit d0498d9ae1a5cebac363e38907266d5cd2eedf89
aka "[NET]: Do not allocate unneeded memory for dev->priv alignment."
It was found to be buggy because of final unconditional += NETDEV_ALIGN_CONST
removal.

For example, for sizeof(struct net_device) being 2048 bytes, "alloc_size"
was also 2048 bytes, but allocator with debugging options turned on started
giving out !32-byte aligned memory resulting in redzones overwrites.

Patch does small optimization in ->priv'less case: bumping size to next
32-byte boundary was always done to ensure ->priv will also be aligned.
But, no ->priv, no need to do that.

Signed-off-by: Alexey Dobriyan <adobriyan@sw.ru>
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 net/core/dev.c | 15 +++++++++------
 1 file changed, 9 insertions(+), 6 deletions(-)

--- a/net/core/dev.c
+++ b/net/core/dev.c
@@ -3996,12 +3996,15 @@ struct net_device *alloc_netdev_mq(int sizeof_priv, const char
*name,

  BUG_ON(strlen(name) >= sizeof(dev->name));

- /* ensure 32-byte alignment of both the device and private area */
- alloc_size = (sizeof(*dev) + NETDEV_ALIGN_CONST +
-       (sizeof(struct net_device_subqueue) * (queue_count - 1))) &
-       ~NETDEV_ALIGN_CONST;
- if (sizeof_priv)
- alloc_size += sizeof_priv + NETDEV_ALIGN_CONST;
+ alloc_size = sizeof(struct net_device) +
+   sizeof(struct net_device_subqueue) * (queue_count - 1);
+ if (sizeof_priv) {
+ /* ensure 32-byte alignment of private area */
+ alloc_size = (alloc_size + NETDEV_ALIGN_CONST) & ~NETDEV_ALIGN_CONST;
+ alloc_size += sizeof_priv;
+ }
+ /* ensure 32-byte alignment of whole construct */
+ alloc_size += NETDEV_ALIGN_CONST;

  p = kzalloc(alloc_size, GFP_KERNEL);
  if (!p) {