Failed to meet partition size error during persistent volume creation

A user reported having an error while creating Persistence using a portable 1TB SSD from Samsung. They managed to counter that by using gnome-disks to "adjust the size down a bit".

I don't know if this is with this specific device or if it's related to size.

Bug report: 6b64cccc6637f2531a19cefd5064da75

Related issues:
- Related to Tails - Feature #17394: adjustable persistence size

The error message reads Error creating partition on /dev/sdb: Failed to meet partition size on device '/dev/sdb' (udisks-error-quark, 0).

The user says they had to make the partition 991G instead of the default 992G, so that GNOME Disks succeeds at creating the partition.

I see similar problems reported on:
- https://github.com/cockpit-project/cockpit/issues/11239
- https://www.reddit.com/r/tails/comments/domxc8/persistent_volume_creation_failed/

At first glance, my hunch is:
- either we pass partition boundaries to udisks in a buggy way, e.g. using some integer type that's too small for large partitions; I find it unlikely that our persistence setup + Cockpit + GNOME Disks all get this wrong;
- or it's a bug in udisks

segfault, as our in-house udisks expert: do you have the kind of hardware needed to reproduce this and possibly debug the corresponding udisks code?
intrigeri wrote:

segfault, as our in-house udisks expert: do you have the kind of hardware needed to reproduce this and possibly debug the corresponding udisks code?

I currently don't have any spare 1TB disk which I could use to reproduce the issue.

I took a quick look at the code to see where the error message comes from. The "Failed to meet partition size on device" part originates in `resize_part()` in `libblockdev.git/src/plugins/part.c`. IIUC, udisks calls `bd_part_create_part()`, which calls `add_part_to_disk()`, which calls `resize_part()`. I would have to be able to reproduce the issue to further debug it.

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#4 - 02/10/2020 07:56 AM - intrigeri

- Blocks Feature #16209: Core work: Foundations Team added

#5 - 02/10/2020 07:57 AM - intrigeri

Hi,

segfault wrote:

intrigeri wrote:

segfault, as our in-house udisks expert: do you have the kind of hardware needed to reproduce this and possibly debug the corresponding udisks code?

I currently don't have any spare 1TB disk which I could use to reproduce the issue.

I tried to reproduce on a spare 750GB SATA disk plugged via a USB-SATA adapter enclosure.

I'm wondering if we could try to reproduce via our automated test suite: presumably, even with significantly less than 1TB of disk space available, we could create a 1TB qcow2 virtual disk (thanks to sparse files and/or compression).

This might be a relevant starting point:

```ruby
--- a/features/step_definitions/snapshots.rb
+++ b/features/step_definitions/snapshots.rb
@@ -66,7 +66,7 @@ def checkpoints
     :description => "I have started Tails without network from a USB drive without a persistent partition and stopped at Tails Greeter's login screen",
     :parent_checkpoint => nil,
     :steps => [ ]
-    'I create a 7200 MiB disk named "__internal"',
+    'I create a 1000000 MiB disk named "__internal"',
    'I plug USB drive "__internal"',
    'I write the Tails USB image to disk "__internal"',
    'I start Tails from USB drive "__internal" with network unplugged',
```
Do you want to pursue this? Otherwise, I could give it a try :)

I took a quick look at the code to see where the error message comes from. The "Failed to meet partition size on device" part originates in `resize_part()` in `libblockdev.git/src/plugins/part.c`. IIUC, udisks calls `bd_part_create_part()`, which calls `add_part_to_disk()`, which calls `resize_part()`. I would have to be able to reproduce the issue to further debug it.

OK, thanks for looking into it!

I'm a bit surprised to see anything related to resizing partitions in there but I did not look at the code so perhaps it does something different than what I would guess.

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**#6 - 02/10/2020 07:58 AM - intrigeri**

intrigeri wrote:

I tried to reproduce on a spare 750GB SATA disk plugged via a USB-SATA adapter enclosure.

Gah, forgot to make it clear: I tried and failed to reproduce. The persistent volume was created just fine. It might be because 750GB << 1TB, or it could be related to sector size.

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**#7 - 02/12/2020 11:20 PM - segfault**

intrigeri wrote:

I'm wondering if we could try to reproduce via our automated test suite: presumably, even with significantly less than 1TB of disk space available, we could create a 1TB qcow2 virtual disk (thanks to sparse files and/or compression).

I tried that, but the disk creation step fails with "Need 1000000 MiB but only X MiB available".

Then I created a 1 TiB qcow2 disk locally, which worked:

```
qemu-img create -f qcow2 test.qcow2 1T
```

But I could not reproduce the issue. I tried attaching it to a Tails VM and creating 992G partition with GNOME Disks, which worked just fine. Then I copied a USB image to the disk (after associating it with a block device via `qemu-nbd`), booted it in a VM, and created a persistent partition on it, which also worked fine.

I'm a bit surprised to see anything related to resizing partitions in there but I did not look at the code so perhaps it does something different than what I would guess.
Yes, I was also surprised about that, but that's what libblockdev does. But I did also not investigate further why it does that.

#8 - 02/12/2020 11:25 PM - segfault

Then I copied a USB image to the disk (after associating it with a block device via qemu-nbd), booted it in a VM, and created a persistent partition on it, which also worked fine.

FWIW, the resulting persistent partition has a size of 1.1 TB (1,099,511,627,776 bytes).

I suspect that the issue only occurs for very specific partition sizes. The 992G you quoted might be rounded.

#9 - 02/16/2020 05:46 PM - segfault

- Subject changed from Cannot create persistence on Samsung Portable SSD T5 1TB to Failed to meet partition size error during persistent volume creation

I suspect that the issue only occurs for very specific partition sizes. The 992G you quoted might be rounded.

I got exact disk and partition sizes from another affected user on reddit (https://www.reddit.com/r/tails/comments/f3ganw/error_when_trying_to_set_up_large_size_persistent/fhmgooa/).

I created a virtual disk with the same size but was still not able to reproduce the issue, tails-persistence-setup did successfully create the persistent partition.

#10 - 03/21/2020 02:04 PM - intrigeri

- Blocks deleted (Feature #16209: Core work: Foundations Team)

Files

| error_creating_partition_Persistence.png | 12.6 KB | 01/04/2020 | numbat |