RHEL: Extending a multipath LUN

Article Number: 58 | Rating: Unrated | Last Updated: Sun, May 27, 2018 8:31 PM

```
# Tested on RHEL 6


# This procedure may be carried out to make visible the new size of a
LUN that is already
# presented and used by the OS and that has been extended at SAN
storage level.

# Whenever possible I recommend to create a new LUN at SAN level
instead of doing an
# extension. In some situations we may experience some trouble when
trying to recognize
# the new size of a disk that has been extended so a reboot may be
necessary.


# Find the paths to the LUN:

multipath -ll
[...]
   my_lun_01 (200255c3a11080003) dm-38 NEC,DISK ARRAY
   size=120G features='1 queue_if_no_path' hwhandler='1 alua' wp=rw
   |-+- policy='round-robin 0' prio=50 status=active
   | |- 1:0:2:0 sdm 65:32 active ready running
   | `- 2:0:2:0 sdo 65:64 active ready running
   `-+- policy='round-robin 0' prio=10 status=enabled
     |- 1:0:3:0 sdn 65:16 active ready running
     `- 2:0:3:0 sdp 65:48 active ready running
```

```
# Rescan the paths:

echo 1 > /sys/block/sdm/device/rescan
echo 1 > /sys/block/sdo/device/rescan
echo 1 > /sys/block/sdn/device/rescan
echo 1 > /sys/block/sdp/device/rescan



# Resize the multipath device:

multipathd -k'resize map my_lun_01'
   ok

# or, in interactive mode:
# multipathd -k
# multipathd> resize map my_lun_01
# ok
# multipathd> exit



# Check

multipath -ll
[...]
   my_lun_01 (200255c3a11080003) dm-38 NEC,DISK ARRAY
   size=120G features='1 queue_if_no_path' hwhandler='1 alua' wp=rw
   |-+- policy='round-robin 0' prio=50 status=active
   | |- 1:0:2:0 sdm 65:32 active ready running
   | `- 2:0:2:0 sdo 65:64 active ready running
   `-+- policy='round-robin 0' prio=10 status=enabled
     |- 1:0:3:0 sdn 65:16 active ready running
     `- 2:0:3:0 sdp 65:48 active ready running
```

At this point, physical volume size shown by '**pvdisplay**' and '**fdisk**' should be different.

If existing physical volume was created directly on the whole disk, without partition,
a '**pvresize**' should be enough for the new size to be taken into account

pvresize /dev/$SD

If, on the other hand, disk is already partitioned, this is, we are using devices in the
form /dev/sdx1, /dev/sdx2, we have to create a new partition with '**fdisk**' tool

fdisk /dev/$SD

```
   The number of cylinders for this disk is set to 2480.
   There is nothing wrong with that, but this is larger than 1024,
   and could in certain setups cause problems with:
   1) software that runs at boot time (e.g., old versions of LILO)
   2) booting and partitioning software from other OSs (e.g., DOS FDISK, OS/2 FDISK)

   Command (m for help): p

   Disk /dev/sdc: 20.4 GB, 20401094656 bytes
   255 heads, 63 sectors/track, 2480 cylinders
   Units = cylinders of 16065 * 512 = 8225280 bytes

   Device Boot      Start         End      Blocks   Id  System
   /dev/sdc1   *           1          33      265041   83  Linux
   /dev/sdc2              34        1958    15462562+  8e  Linux LVM
```

Let's create a new partition. In our case, we'll create partition # 3

```
# (primary Linux LVM partition). For the first and last cylinder
usually default values
# will be ok; if not, choose carefully the beginning and the end of
the new partition to
# avoid

   Command (m for help): n
   Command action
   e   extended
   p   primary partition (1-4)
   p
   Partition number (1-4): 3
   First cylinder (1959-2480, default 1959):
   Using default value 1959
   Last cylinder or +size or +sizeM or +sizeK (1959-2480, default
2480):
   Using default value 2480

   Command (m for help): t
   Partition number (1-4): 3
   Hex code (type L to list codes): 8e
   Changed system type of partition 3 to 8e (Linux LVM)

   Command (m for help): w
   The partition table has been altered!

   Calling ioctl() to re-read partition table.

   WARNING: Re-reading the partition table failed with error 16:
Device or resource busy.
   The kernel still uses the old table.
   The new table will be used at the next reboot.
   Syncing disks.

# Rescan disks

partprobe -s
```

```
# It may be that we have an error like following on (usually on RHEL
6):

Warning: WARNING: the kernel failed to re-read the partition table on
/dev/sdc (Device or resource busy).
As a result, it may not reflect all of your changes until after
reboot.

# The use following command instead:

partx -a /dev/$SD


# New partition is ready to be used ('pvcreate', etc)

brw-r----- 1 root disk 8, 33 Nov  3 15:15 /dev/sdc1
```