

Изменения размера раздела

Complete Steps and Explanation

ssh to server, sudo -i to become root

Confirm there is a limited amount of disk space. In the output below, note the / (root) volume only has 3.9 GB disk space:

```
user@server:~$ df -h
Filesystem Size Used Avail Use% Mounted on
udev      1.9G  0  1.9G   0% /dev
tmpfs     394M  1.1M  393M   1% /run
/dev/mapper/ubuntu--vg-ubuntu--lv 3.9G  3.2G  489M  87% /
tmpfs     2.0G  0  2.0G   0% /dev/shm
tmpfs     5.0M  0  5.0M   0% /run/lock
tmpfs     2.0G  0  2.0G   0% /sys/fs/cgroup
/dev/loop0 89M  89M   0 100% /snap/core/7270
/dev/sda2 976M  77M  833M   9% /boot
/dev/loop1 90M  90M   0 100% /snap/core/7713
tmpfs     394M  0  394M   0% /run/user/1000
```

Next confirm in Linux that there is actually a lot more space available. As you will see from the output below, there is **24G** on the **/dev/sda3** volume. The other 1GB is used in the boot volume and the **BIOS boot**

```
user@server:~# fdisk -l
Disk /dev/loop0: 88.5 MiB, 92778496 bytes, 181208 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
```

```
Disk /dev/loop1: 89 MiB, 93327360 bytes, 182280 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
```

...

```
Disk /dev/sda: 25 GiB, 26843545600 bytes, 52428800 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 4096 bytes
I/O size (minimum/optimal): 4096 bytes / 4096 bytes
Disklabel type: gpt
Disk identifier: ED41F7A6-5D09-457B-A55C-C7F1E30DE419
```

```
Device Start End Sectors Size Type
/dev/sda1 2048 4095 2048 1M BIOS boot
/dev/sda2 4096 2101247 2097152 1G Linux filesystem
/dev/sda3 2101248 52426751 50325504 24G Linux filesystem
```

```
Disk /dev/mapper/ubuntu--vg-ubuntu--lv: 4 GiB, 4294967296 bytes, 8388608 sectors
Units: sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 4096 bytes
I/O size (minimum/optimal): 4096 bytes / 4096 bytes
```

The one set of instructions referred to starting this process using `parted`, so parted log is below. The instructions as per Stack read something like:

“First you need to run parted and use its `resizepart` command to expand the partition to use the whole disk, then run `pvresize` to tell LVM about the new space, then run `lvresize` to grow the logical volume, and finally `resize2fs` on the logical volume to grow the filesystem to use the new space. This can be done without a reboot.”

Please note however I diverted slightly from these steps. The first command I learnt / used in parted, was just used to print the partition information:

```
user@server:~# parted
GNU Parted 3.2
Using /dev/sda
Welcome to GNU Parted! Type 'help' to view a list of commands.
```

```
(parted) print
Model: Msft Virtual Disk (scsi)
Disk /dev/sda: 26.8GB
Sector size (logical/physical): 512B/4096B
Partition Table: gpt
Disk Flags:

Number Start End Size File system Name Flags
1 1049kB 2097kB 1049kB bios_grub
2 2097kB 1076MB 1074MB ext4
3 1076MB 26.8GB 25.8GB

(parted) quit
```

This was followed by me checking and re-checking information using `fdisk` and `df -h` to make sure I was understanding the current situation.

Then I finally started the procedure:

```
user@server:~# parted
GNU Parted 3.2
Using /dev/sda
Welcome to GNU Parted! Type 'help' to view a list of commands.
(parted) resizepart
Partition number? 3
End? [26.8GB]?
(parted) quit
Information: You may need to update /etc/fstab.
```

...

```
user@server:~# pvresize /dev/sda3
Physical volume "/dev/sda3" changed
1 physical volume(s) resized / 0 physical volume(s) not resized
```

At this point I tried using `lvresize` but couldn't get it to work. It appears there is both `lvresize` and `lvextend`. As per the "microhowto.info" article:

"The difference is that `lvextend` can only increase the size of a volume, whereas `lvresize` can increase or reduce it."

The first attempt at specifying 24GB did not work. After I completed the procedure I found that you can also specify a flag 100%, but unfortunately, I didn't get that information in time and just ended up specifying 23GB. If I have the time I might try and use the 100% flag. For reference, the flag is

```
lvextend -l +100%FREE /dev/VGNAME/LVNAME
```

Below first attempt but insufficient space:

```
user@server:~# lvextend --size 24G /dev/mapper/ubuntu--vg-ubuntu--lv
Insufficient free space: 5120 extents needed, but only 5119 available
```

Second attempt reducing space to allocate:

```
user@server:~# lvextend --size 23G /dev/mapper/ubuntu--vg-ubuntu--lv
Size of logical volume ubuntu-vg/ubuntu-lv changed from 4.00 GiB (1024 extents) to 23.00 GiB (5888 extents).
Logical volume ubuntu-vg/ubuntu-lv successfully resized.
```

After `lvextend`, one has to use `resize2fs`. This was kind of scary because it appeared I was going to work on a live disk, but it went quick.

```
user@server:~# resize2fs /dev/mapper/ubuntu--vg-ubuntu--lv
resize2fs 1.44.1 (24-Mar-2018)
Filesystem at /dev/mapper/ubuntu--vg-ubuntu--lv is mounted on /; on-line resizing required
old_desc_blocks = 1, new_desc_blocks = 3
The filesystem on /dev/mapper/ubuntu--vg-ubuntu--lv is now 6029312 (4k) blocks long.
```

TADA! The disk is now 23G big as seen by df-h output below:

```
user@server:~# df -h
Filesystem Size Used Avail Use% Mounted on
udev 1.9G 0 1.9G 0% /dev
tmpfs 394M 1.1M 393M 1% /run
/dev/mapper/ubuntu--vg-ubuntu--lv 23G 3.2G 19G 15% /
tmpfs 2.0G 0 2.0G 0% /dev/shm
tmpfs 5.0M 0 5.0M 0% /run/lock
tmpfs 2.0G 0 2.0G 0% /sys/fs/cgroup
/dev/loop0 89M 89M 0 100% /snap/core/7270
/dev/sda2 976M 77M 833M 9% /boot
/dev/loop1 90M 90M 0 100% /snap/core/7713
tmpfs 394M 0 394M 0% /run/user/1000
user@server:~#
```

В Centos 7 файловая система по умолчанию- **xfs** .

поддержка файловой системы xfs только расширяется, а не уменьшается. Поэтому, если вы хотите изменить размер файловой системы, используйте xfs_growfs, а не resize2fs.

```
xfs_growfs /dev/root_vg/root
```

Примечание: Для использования файловой системы ext4

```
resize2fs /dev/root_vg/root
```

Revision #4

Created 2021-06-22 16:18:39 UTC by yuzer

Updated 2024-12-20 10:35:53 UTC by yuzer