

LVM extension for Ubuntu/Debian

Issue: Server was upgraded, the virtual disk (sda) was expanded correctly but the free space is not allocated to the LVM.

Below you have instructions for the ngcs cloud server, which was upgraded.

Step-by-step guide for Ubuntu and Debian

1. Install the growpart

```
# apt-get install cloud-guest-utils -y
```

2. Print the current partition layout with the fdisk -l

```
# fdisk -l
```

Disk /dev/sda: 80 GiB, 85899345920 bytes, 167772160 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

Disklabel type: dos

Disk identifier: 0x27795bc1

Device	Boot	Start	End	Sectors	Size	Id	Type
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/dev/sda1	*	2048	1050623	1048576	512M	83	Linux
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/dev/sda2		1050624	167772159	166721536	20G	8e	Linux LVM
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3. In our example, the /dev/sda1 is the boot partition and **/dev/sda2 is the Linux LVM** partition we wish to expand. Please notice that the command is asking you for the device (sda) and the partition number 2. There is a space between sda and 2 and it is not a typo.

```
# growpart -N -v -u auto /dev/sda 2
```

4. This was only a dry run, to see the changes it is going to make. If you are happy with proposed changes (see the block number changing). Run the command without -N option to resize the sda2 partition.

```
# growpart -v -u auto /dev/sda 2
```

5. Verify the changes with fdisk -l again. Establish which partition you wish to expand, for example it could be:

- /dev/mapper/vg00-var

6. Try to resize the partition for the LVM. (If this command is not working, reboot the server and try again)

```
# pvresize /dev/sda2
```

7. Use the free space to extend the partition

```
# lvextend -l +100%FREE /dev/mapper/vg00-var
```

8. Extend the ext4 filesystem:

```
# resize2fs /dev/mapper/vg00-var
```