

Create or enlarge a Linux LVM volume

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Keywords

Datenspeicher Konfiguration Linux Speicherplatz VM

Solution (public)

Requirements for creating or enlarging an LVM volume

- Switch to root user

-

sudo -s

- Install package parted (e.g. under Debian or Ubuntu)

-

apt install parted

- After adding or enlarging a hard disk while VM is running, the SCSI bus must be rescanned

- Scan for new hard disks

-

```
for i in /sys/class/scsi_host/*/scan; do echo "- ->${i}; done
```

- Scan for enlarged hard disks

-

```
for i in /sys/class/scsi_device/*/device/rescan; do echo 1>${i}; done
```

- To be able to use the additional hard disk space for LVM, a partition must first be created and initialized as PV (Physical Volume)

-

(Optional) Initialization of the partition table with GPT - only for new hard disks (e.g. /dev/sdb)

-

```
parted /dev/sdb mktable gpt
```

- Create partition and initialize as PV

-

```
parted /dev/sdb unit mib mkpart primary 1 100%
```

-

```
parted /dev/sdb set 1 lvm on
```

-

```
partprobe
```

-

```
pvcreate /dev/sdb1
```

-

Enlarge an existing partition and its PV (e.g. /dev/sdb1)

-

```
parted /dev/sdb resizepart 1 100%
```

-

```
partprobe
```

-

```
pvresize /dev/sdb1
```

Create new LVM volume

- Create VG (Volume Group) (e.g. "data")

-

```
vgcreate data /dev/sdb1
```

-

Create LV (Logical Volume) (e.g. "data01")

```
-  
lvcreate -l +100%FREE -n data01 data  
-  
Create file system (e.g. EXT4)  
-  
mkfs.ext4 /dev/data/data01  
- Create mount point (e.g. /data)  
-  
mkdir /data  
- Edit /etc/fstab to automatically mount the LV  
-  
Add line:  
/dev/data/data01 /data ext4 defaults 0 2  
- Mount LV  
-  
mount /data  
Extend an existing volume group with a volume  
- Add volume to existing volume group  
-  
vgextend data /dev/sdb1  
Enlarge existing LVM volume  
-  
Determine the name of the LV to be enlarged (e.g. /dev/data/data01)  
-  
lvdisplay  
- Enlarge LV  
-  
lvextend -l +100%FREE /dev/data/data01  
- Enlarge file system  
-  
EXT4: resize2fs -p /dev/data/data01  
-  
BTRFS: btrfs filesystem resize max /data (/data = Mount point of LV  
/dev/data/data01)  
-  
XFS: xfs_growfs /dev/data/data01
```