Quick Guide: Expanding Disks

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Virtual Disk Expansion

1. Scan for disk hardware changes:

```
for i in /sys/class/scsi_host/host*/scan; do echo "- - -" > $i; done
for i in /sys/class/scsi_device/*/device/rescan; do echo "1" > $i; done
```

2. Check for updated disk size:

```
lsblk
```

Your output will look something like this:

```
NAME            MAJ:MIN RM   SIZE RO TYPE MOUNTPOINT
sda               8:0    0   120G  0 disk
├─sda1            8:1    0   512M  0 part /boot
└─sda2            8:2    0 103.5G  0 part
  ├─eCloud-root 253:0    0 102.5G  0 lvm  /
  └─eCloud-swap 253:1    0     1G  0 lvm  [SWAP]
sdc               8:32   0   200G  0 disk
└─sdc1            8:33   0   200G  0 part
sr0              11:0    1  1024M  0 rom
```

3. Check partitions using fdisk

```
fdisk -l
```

Output will look something like this:

```
[root@server ~]# fdisk -l
Disk /dev/sda: 128.8 GB, 128849018880 bytes, 251658240 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 label type: dos
Disk identifier: 0x000b9cfe
   Device Boot      Start         End      Blocks   Id  System
/dev/sda1   *        2048     1050623      524288   83  Linux
/dev/sda2         1050624   218103774   108526575+  8e  Linux LVM
```

4. Run growpart against the expanded device:

```
growpart /dev/sda 2
```

5. Run pvresize command against the partition:

```
pvresize /dev/sda2
```

6. Resize the logical volume, ensure to replace vg and lv with the appropriate values (these will typically be the same as seen on df -h):

```
lvresize -rl +100%FREE /dev/mapper/vg/lv
```

7. Check that the space has been applied to the filesystem:

```
df -h
```

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Physical Disk Expansion (Additional Disk)

1. Scan for disk hardware changes:

```
for i in /sys/class/scsi_host/host*/scan; do echo "- - -" > $i; done
for i in /sys/class/scsi_device/*/device/rescan; do echo "1" > $i; done
```

2. Check for updated disk size:

```
lsblk
```

Your output will look something like this:

```
NAME                MAJ:MIN RM   SIZE RO TYPE MOUNTPOINT
sda                   8:0    0 111.3G  0 disk
├─sda1                8:1    0     1G  0 part /boot
└─sda2                8:2    0 110.3G  0 part
  ├─vg_main-lv_root 253:0    0   105G  0 lvm  /
  └─vg_main-lv_swap 253:1    0     4G  0 lvm  [SWAP]
sdb                   8:16   0 111.8G  0 disk /mnt
sdc                   8:32   0 237.9G  0 disk
```

In this example, the additional disk is /dev/sdc.

3. Create a new partition on the additional disk:

```
fdisk /dev/sdc
```

Once you've run the above command, you'll be entered into the fdisk prompt, the below options are typically suitable:

p - print

n - make new partition

p - primary

w - write

4. Check the physical volume and create a new physical volume on the new partition:

```
[root@test ~]# pvs
  PV         VG      Fmt  Attr PSize    PFree
  /dev/sda2  vg_main lvm2 a--  <110.25g <1.25g
```

Create a new physical volume on the new partition:

```
pvcreate /dev/sdc1
```

Show new Physical Volume

```
[root@test ~]# pvs
  PV         VG      Fmt  Attr PSize    PFree
  /dev/sda2  vg_main lvm2 a--  <110.25g  <1.25g
  /dev/sdc1          lvm2 ---   237.87g 237.87g
```

6: Extend the volume group “vg_main” over the new partition

```
vgextend vg_main /dev/sdc1
```

Show volume group

```
[root@test ~]# vgs
  VG      #PV #LV #SN Attr   VSize    VFree
  vg_main   2   2   0 wz--n- <348.12g <239.12g
```

7. Resize the logical volume, ensure to replace vg and lv with the appropriate values (these will typically be the same as seen on df -h):

```
lvresize -rl +100%FREE /dev/mapper/vg/lv
```

8. Check that the space has been applied to the filesystem:

```
df -h
```

Revision #5
Created 2023-11-28 18:15:38 UTC by Daniel
Updated 2024-06-09 15:02:44 UTC by Daniel