Exercise 23.1: Logical Volumes

We are going to create a logical volume using two 250 MB partitions. We are going to assume you have real partitionable disk space available.

1. Create two 250 MB partitions of type logical volume (`8e`).

2. Convert the partitions to physical volumes.

3. Create a volume group named `myvg` and add the two physical volumes to it. Use the default extent size.

4. Allocate a 300 MB logical volume named `mylvm` from volume group `myvg`.

5. Format and mount the logical volume `mylvm` at `/mylvm`

6. Use **lvdisplay** to view information about the logical volume.

7. Grow the logical volume and corresponding filesystem to 350 MB.

✅ Solution 23.1

1. Execute:

   ```
   $ sudo fdisk /dev/sda
   ```

   using whatever hard disk is appropriate, and create the two partitions. While in **fdisk**, typing `t` will let you set the partition type to `8e`. While it doesn't matter if you don't set the type, it is a good idea to lessen confusion. Use `w` to rewrite the partition table and exit, and then

   ```
   $ sudo partprobe -s
   ```

   or reboot to make sure the new partitions take effect.

2. Assuming the new partitions are `/dev/sdaX` and `/dev/sdaY`:

   ```
   $ sudo pvcreate /dev/sdaX
   $ sudo pvcreate /dev/sdaY
   $ sudo pvdisplay
   ```

3. ```
   $ sudo vgcreate myvg /dev/sdaX /dev/sdaY
   $ sudo vgdisplay
   ```

4. ```
   $ sudo lvcreate -L 300M -n mylvm myvg
   $ sudo lvdisplay
   ```

5. ```
   $ sudo mkfs.ext4 /dev/myvg/mylvm
   $ mkdir /mylvm
   $ sudo mount /dev/myvg/mylvm /mylvm
   ```

   If you want the mount to be persistent, edit `/etc/fstab` to include the line:

   > **in** `/etc/fstab`
   >
   > ```
   > /dev/myvg/mylvm /mylvm ext4 defaults 0 0
   > ```

6. ```
   $ sudo lvdisplay
   ```

7. `$ df -h`
   `$ sudo lvresize -r -L 350M /dev/myvg/mylvm`
   `$ df -h`

   or

   `$ sudo lvresize -r -L +50M /dev/myvg/mylvm`

   or with older methods you can do:

   `$ df -h`
   `$ sudo lvextend -L 350M /dev/myvg/mylvm`
   `$ sudo resize2fs /dev/myvg/mylvm`
   `$ df -h`