Exercise 16.1 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 16.1

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:

   ```
   /dev/myvg/mylvm /mylvm ext4 defaults 0 0
   ```

6. ```
   $ sudo lvdisplay
   ```

7. ```
   $ df -h
   $ sudo lvextend -L 350M /dev/myvg/mylvm
   $ sudo resize2fs /dev/myvg/mylvm
   $ df -h
   ```

   or

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