Lab Six

1- Use the `fdisk` command to create 2 Linux LVM (0x8e) partitions using "unpartitioned" space on your hard disk. These partitions should all be the same size; to speed up the lab, do not make them larger than 300 MB each. Make sure to write the changes to disk by using the w command to exit the fdisk utility. Run the partprobe command after exiting the fdisk utility.
2- Initialize your Linux LVM partitions as physical volumes with the pvcreate command. You can use the pvdisplay command to verify that the partitions have been initialized as physical volumes.
3- Using only one of your physical volumes, create a volume group called test0. Use the vgdisplay command to verify that the volume group was created.
4- Create a small logical volume (LV) called data that uses about 30 percent of the available space of the test0 volume group. Look for VG Size and Free PE/Size in the output of the vgdisplay command to assist you with this. Use the lvdisplay command to verify your work.
5- Create an ext2 filesystem on your new LV.
6- Make a new directory called /data and then mount the new LV under the /data directory. Create a "large file" in this volume.
7- Enlarge the LV that you created in Sequence 1 (/dev/test0/data) by using approximately 25 percent of the remaining free space in the test0 volume group. Then, use the ext2online command to enlarge the filesystem of the LV.
8- Verify that the file /data/bigfile still exists in the LV. Run the df command and check to verify that more free disk space is now available on the LV.
9- Use the remaining extents in the test0 volume group to create a second LV called docs.
10- Run the vgdisplay command to verify that there are no free extents left in the test0 volume group.
11- Create an ext2 filesystem on the new LV, make a mount point called /docs and mount the docs LV using this mount point.
12- Add all of the remaining unused physical volumes that you created in Sequence 1 to the test0 volume group.
13- If you run vgdisplay again, there now should be free extents (provided by the new physical volumes) in the test0 volume group. Extend the docs LV and underlying filesystem to make use of all of the free extents of the test0 volume group. Verify your actions.

Before moving on to the RAID sequence, disassemble your LVM-managed volumes by taking the following actions:

Remove any /etc/fstab entries you created.
umount /dev/test0/data
lvremove /dev/test0/data
umount /dev/test0/docs
lvremove /dev/test0/docs

vgchange -an test0 (this deactivates the volume group)
vgremove test0 (this deletes the volume group)

14- Run the fdisk command and convert the Linux LVM (0x8e) partitions that were created in above into Linux raid auto (0xfd) partitions. Save your changes and run the partprobe command
15- Initialize your RAID array (RAID 0)
16- Format the RAID device with an ext3 filesystem
17- Use the /data directory as a mount point for the /dev/md0 RAID device. Use the df command to check the size of the filesystem.