Logical Volume Manager

LPIC-2: Linux Engineer (201-450)

Objectives:

At the end of this episode, I will be able to:

1. Describe the Logical Volume Manager and its functions.
2. Use the LVM to create and resize logical volumes.

> Additional resources used during the episode can be obtained using the download link on the overview episode.

- Install LVM tools
  - `sudo apt install lvm2`
- Create physical volumes
  - `pvcreate /dev/sdb /dev/sdc`
- Verify creation
  - `pvdisplay` or `pvs`
- Create a volume group
  - `vgcreate vg1 /dev/sdb /dev/sdc`
  - `vgdisplay` or `vgs`
- Create logical volumes
  - `lvcreate -L <size> vg1 -n <name>`
  - `lvcreate -L 250G vg1 -n website`
  - `lvdisplay` or `lvs`
- Format and mount the logical volume
  - `mkfs.ext4 /dev/vg1/website`
  - `mount /dev/vg1/website /mnt/website`
- Verify volume added to /etc/fstab if needed at boot
  - `more /etc/fstab/dev/mapper/vg1-lv1`
  - `/root/Videos ext4 defaults 1 1`
    - 1 - Do backup with `dump`
    - 1 - Do check for errors
- Add more storage to the volume group / logical volume
  - `fdisk /dev/sdd`
    - n - create new partition
    - w - write changes
  - `partprobe`
  - `pvcreate /dev/sdd`
  - `vgextend vg1 /dev/sdd`
  - `lvresize -L +50G /dev/vg1/website`
  - `df -h`
  - `resize2fs /dev/vg1/website`

    - `df -h`
    - `lvdisplay`
- Tear it all down
    - `umount <path>`
    - `lvremove /dev/vg1/website`
    - `vgremove /dev/vg1`
    - `pvremove /dev/sdb /dev/sdc /dev/sdd`