Expand LVM Volume

Expanding the Logical Volume

1. **Check Available Space: Before expanding, check how much free space is available in the volume group.**
    1. **`vgdisplay`**
2. **Resize the Logical Volume: To extend the logical volume, use the following command. Replace `<size>` with the amount you want to add (e.g., `10G` for 10 GB):**
    1. **`sudo lvextend -L +<size> /dev/mapper/ubuntu--vg-ubuntu--lv`**
3. **Resize the Filesystem: After resizing the logical volume, you need to resize the filesystem to use the new space:**
    1. **For ext4 filesystem:**
        1. **`sudo resize2fs /dev/mapper/ubuntu--vg-ubuntu--lv`**
    2. **For XFS filesystem:**
        1. **`sudo xfs_growfs /dev/mapper/ubuntu--vg-ubuntu--lv`**

Shrinking the Logical Volume

1. **Check Filesystem Size: Before shrinking, ensure the filesystem is smaller than the logical volume you want to resize it to. You might need to reduce the filesystem size first.**
    1. **For ext4 filesystem:**
        1. **`sudo resize2fs /dev/mapper/ubuntu--vg-ubuntu--lv <new_size>`**
    2. For example, to shrink to 20G:
        1. `sudo resize2fs /dev/mapper/ubuntu--vg-ubuntu--lv 20G`
2. **Reduce the Logical Volume: Now you can safely reduce the logical volume:**
    1. **`sudo lvreduce -L <new_size> /dev/mapper/ubuntu--vg-ubuntu--lv`**
3. **Resize the Filesystem Again (if necessary): If you haven’t already resized the filesystem in the first step, you can do it now.**

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