To extend filesystem of a Linux VM using LVM

Go to your virtualization product (VMWare or Oracle Virtual Box)

- Increase the disk space to desired number and then click ok

Now go to your Linux VM

- Reboot the VM to have the system re-scan the newly added disk Or
- `cd /sys/class/scsi_disk/2:0:0:0`
- `echo '1' > device/rescan`

- `fdisk -l` (To make sure the disk is increased)

- Create a new partition
  - **`fdisk /dev/sdc`**
  - **`n`** (for new partition)
  - **`p`** (for primary partition)
  - **`2`** (partition number, 2 or the new partition)
  - **`Enter`**
  - **`Enter`**
  - **`t`** (Label the new partition)
  - **`3`** (Pick default value)
  - **`8e`** (This will make the filesystem as LVM)
  - **`w`** (Write)
  - **`# reboot or init 6`**

Note: The above procedure will create /dev/sdc2 partition

- Extend the LVM group
  - **`pvdisplay`** (To see which group associated with which disk)
  - **`pvs`** (Info about physical volumes
  - **`vgdisplay oracle_vg`** (oracle_vg is the group name or you can simply run vgdisplay)
    On vgdisplay you will notice Free PE / Size at the bottom
  - **`pvcreate /dev/sdc2`** (Initialize partition for use by LVM)
  - **`vgextend oracle_vg /dev/sdc2`** (# = whichever partition was created above)
  - Run **`vgdisplay oracle_vg`**
    check (Free PE / Size). The second column is the right column as free. If it is in G convert that into M. e.g. 1G = 1024M
  - **`lvextend -L+1024M /dev/mapper/oracle_vg-oracle_lv`**
  - **`resize2fs /dev/mapper/oracle_vg-oracle_lv`**
  - OR
  - **`xfs_growfs /dev/mapper/oracle_vg-oracle_lv`**