How to do a Filesystem Resize (ext3/ext4) on Redhat running on VMware

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A filesystem resize can be done in several ways, online, offline, with LVM2 or without LVM2. However, this blog will describe how to do an online resize of ext3/ext4 filesystems where a virtual disk (vmdk) is online added to a VMware Redhat guest OS.

So let's start with the online filesystem resize of ext3/4 filesystems on the Redhat guest OS. A new virutal disk (preferably an eagerd zero thick on VM running Oracle) was added as a pre requirement. Adding a new virtual disk is an online operation and no downtime is required to do it.

The whole procedure in this document is described by using the command line only. There is also a graphical user interface `system-config-lvm` that can perform the job, but that tool is out of scope in this document.

Online resize a ext3/4 filesystem

There are several steps that have to be done. These are in general:

1. Scanning for new LUN's
2. Partition the new LUN's and partprobe
3. Create the physical volume
4. Extend the volume group and the logical volume
5. Extend the filesystem online

Rescan for new LUN's

Depending on the number of virtual controllers, you have to scan for your new LUN's on each of these. In case you know on which the disk was added, then of course, you need to scan only the appropriate

one.

Rescan for new LUN’s on the first SCSI Controller (LSI Logic Parallel)

```
1
                                                # echo "- - -"  > /sys/class/scsi_host/host0/scan*
```

Rescan for new LUN’s on the second SCSI Controller (Paravirtualized)

```
1
                                                # echo "- - -"  > /sys/class/scsi_host/host1/scan*
```

Create a Primary Partion on the new devices

```
1
                                                # fdisk /dev/sdx??
2

3
                                                # fdisk /dev/sdy??
```

Partprobe the new devices

Partprobe is a program that informs the operating system kernel of partition table changes, by requesting that the operating system re-read the partition table.

```
1
                                                # partprobe /dev/sdx??
2
3
                                                # partprobe /dev/sdy??
```

Create the Pysical Volumes

```
1
                                                # pvcreate /dev/sdx??
2
3
                                                Physical volume "/dev/sdx??" successfully created
```

```
1
                                                # pvcreate /dev/sdy??
2
3
                                                Physical volume "/dev/sdy??" successfully created
```

Extend the Volume Group

```
1
                                    # vgextend VGOracle /dev/sdx??
2
3
                                    Volume group "VGOracle" successfully extended
```

```
1
                                    # vgextend VGOracle /dev/sdy??
2
3
                                    Volume group "VGOracle" successfully extended
```

Extend the Logical Volume

```
1
                                    # lvextend -L 72G /dev/VGOracle/LVOracleu??
2
3
                                    Extending logical volume LVOracleu?? to 72.00 GB
4
5
                                    Logical volume LVOracleu01 successfully resized
```

Online Resize the ext3/ext4 Filesystem

After the logical volume is resized successfully, you can resize, in fact any filesystem that is online resizable. The following are examples for the ext3/ext4 filesystems. The syntax for ext3 and ext4 differ only slightly. For ext3 you use `resize2fs` even if its ext3 and not ext2, and in case of ext4 you use `resize4fs` were the command name is more logically.

ext3

```
1
                                                    # resize2fs /dev/VGOracle/LVOracleu??
```

ext4

```
1
                                                    # resize4fs /dev/VGOracle/LVOracleu??
```

That’s it. Now have fun with the bigger filesystem.