

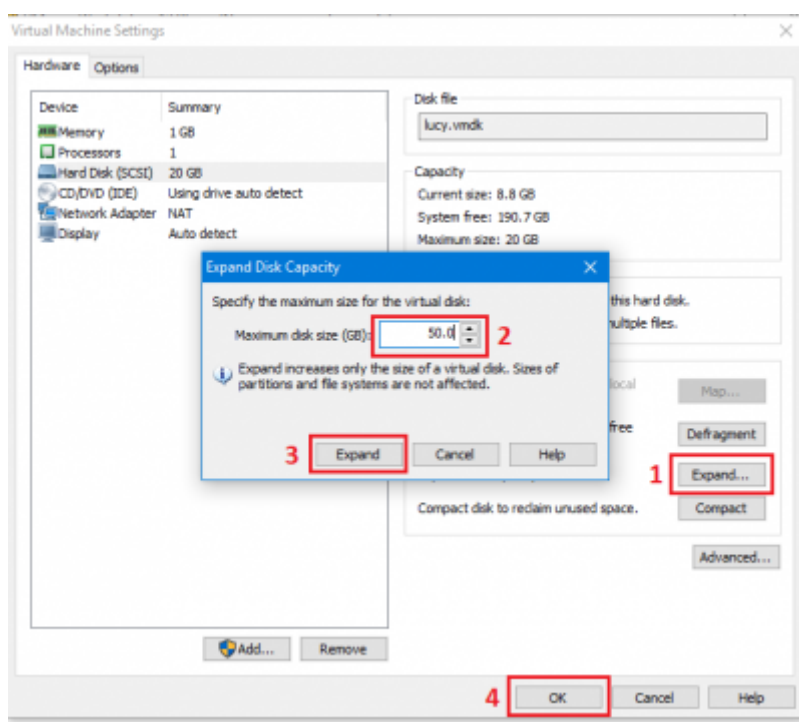
Extending a logical volume in VMware machine

This article provides steps for extending the root partition residing in a logical volume created with Logical Volume Manager (LVM) in a virtual machine running Lucy. A more complete guide with screenshots can be found

here

Caution: We recommend taking a complete backup of the virtual machine prior to making these changes.

1. Power off the virtual machine.
2. Edit the virtual machine settings and extend the virtual disk size.



For more information, see [Increasing the size of a virtual disk \(1004047\)](#).

3. Power on the virtual machine.
4. Print the partition table to verify the number of partitions by running the command:
`# fdisk -l`

By default, there are 3: sda1, sda2 and sda5.

| Device | Boot | Start | End | Blocks | Id | System |
|-----------|------|--------|----------|----------|----|-----------|
| /dev/sda1 | * | 2048 | 499711 | 248832 | 83 | Linux |
| /dev/sda2 | | 501758 | 41940991 | 20719617 | 5 | Extended |
| /dev/sda5 | | 501760 | 41940991 | 20719616 | 8e | Linux LVM |

5. Create a new primary partition - sda3:

- Run the command:

```
# fdisk /dev/sda
```

- Press <n> to create a new primary partition.
- Press <p> for primary.
- Press <3> for the partition number.
- Press <Enter> two times.
- Press <t> to change the system's partition ID.
- Press <3> to select the newly creation partition.
- Type 8e to change the Hex Code of the partition for Linux LVM.
- Press <w> to write the changes to the partition table.

6. Restart the virtual machine:

```
# shutdown -r now
```

7. Verify whether sda3 has successfully created, by running the command:

```
# fdisk -l
```

```
root@phishing:~# fdisk -l
Disk /dev/sda: 53.7 GB, 53687091200 bytes
255 heads, 63 sectors/track, 6527 cylinders, total 104857600 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x0008d718

   Device Boot      Start         End      Blocks    Id  System
/dev/sda1  *        2048       499711       248832    83   Linux
/dev/sda2                501758      41940991      20719617    5   Extended
/dev/sda3                499712        501757         1023    8e   Linux LVM
/dev/sda5                501760      41940991      20719616    8e   Linux LVM
```

8. Create another primary partition sda4:

- Run the command:

```
# fdisk /dev/sda
```

- Press <n> to create a new primary partition.
- Press <p> for primary.

Note. The number of partition <4> was selected automatically.

- Press <Enter> two times.
- Press <t> to change the system's partition ID.
- Press <4> to select the newly creation partition.
- Type 8e to change the Hex Code of the partition for Linux LVM.
- Press <w> to write the changes to the partition table.

9. Restart the virtual machine once again:

```
# shutdown -r now
```

10. Verify whether sda4 has successfully created, by running the command:

```
# fdisk -l
```

```

root@phishing:~# fdisk -l

Disk /dev/sda: 53.7 GB, 53687091200 bytes
255 heads, 63 sectors/track, 6527 cylinders, total 104857600 sectors
Units = sectors of 1 * 512 = 512 bytes
Sector size (logical/physical): 512 bytes / 512 bytes
I/O size (minimum/optimal): 512 bytes / 512 bytes
Disk identifier: 0x0008d718

   Device Boot      Start         End      Blocks   Id  System
/dev/sda1 *         2048        499711       248832   83   Linux
/dev/sda2           501758      41940991      20719617    5   Extended
/dev/sda3           499712        501757         1023   8e   Linux LVM
/dev/sda4          41940992     104857599      31458304   8e   Linux LVM
/dev/sda5           501760      41940991      20719616   8e   Linux LVM

```

11. Run this command to convert the new partition to a physical volume:

```
# pvcreate /dev/sda4
```

12. Run this command to extend the physical volume:

```
# vgextend phishing-vg /dev/sda4
```

13. Run this command to verify how many physical extents are available to the Volume Group:

```
# vgsdisplay phishing-vg | grep "Free"
```

14. Run the following command to extend the Logical Volume:

```
# lvextend -L+#G /dev/phishing-vg/root
```

Where <#> is the number of Free space in GB available as per the previous command. Use the full number output from Step 13 including any decimals.

15. Run the following command to expand the ext3 filesystem online, inside of the Logical Volume:

```
# resize2fs /dev/phishing-vg/root
```

16. Run the following command to verify that the / filesystem has the new space available:

```
# df -h
```

```

root@phishing:~# df -h
Filesystem                Size      Used Avail Use% Mounted on
rootfs                    49G       4.5G   42G   10% /
udev                      10M         0   10M    0% /dev
tmpfs                     101M      236K   101M    1% /run
/dev/mapper/phishing-root  49G       4.5G   42G   10% /
tmpfs                      5.0M         0    5.0M    0% /run/lock
tmpfs                     202M         0   202M    0% /run/shm
/dev/sda1                 228M       17M   200M    8% /boot

```

From:

<https://wiki.lucysecurity.com/> - LUCY

Permanent link:

https://wiki.lucysecurity.com/doku.php?id=extending_a_logical_volume_in_vmware_machine

Last update: 2021/12/20 12:29

