



How do I Increase the SimpleRisk VM Size? (VirtualBox)

Introduction

This FAQ was designed to help guide you through expanding the SimpleRisk VM disk size using VirtualBox. This process is involved and requires some steps which could result in data loss if they are done incorrectly. We suggest making sure you have excellent backups of the VM before proceeding. Please note that we are not responsible for any damage to or data loss that may occur by attempting this procedure. Continue with caution, these steps have been proven to be successful and should be for you however, we always advise having proper backups just in case.

This process will require a linux bootable iso, in this example I'm using a live boot CD of Ubuntu 18.04. If you don't have one on hand I would go ahead and start that downloading here: <http://releases.ubuntu.com/18.04/>

Instruction

Step 1: Increasing the size of the VM VDD

You may have already noticed but VirtualBox does not have the ability to expand the virtual disk space in the user interface, but it does include CLI tools for doing this. For this step you will need to open up a command prompt or terminal. (winkey + r, cmd.exe)

- 1) Navigate to your virtualbox location. In this example I am using the default install location so for me it will be:

```
cd "C:\Program Files\Oracle\VirtualBox"
```

```
C:\Users\Dorian>cd "c:\Program Files\Oracle\VirtualBox"  
c:\Program Files\Oracle\VirtualBox>
```

- 3) Now we resize our VDI copy using the following command. If you want to change the size from my example (15GB) the resize flag works by declaring how many MB it will be:

```
VBoxManage modifymedium  
"C:\Users\Dorian\VirtualBox
```

```
VMs\simplerisk-20190105-001\simplerisk-20190105-001-disk001.vdi" --resize 15360
```

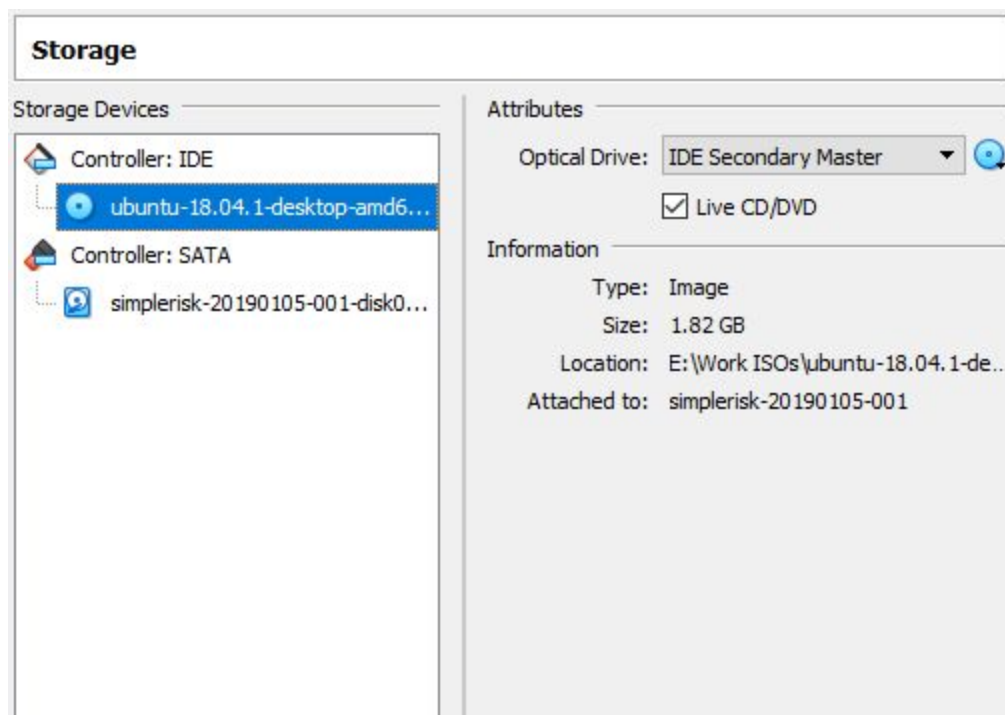


```
C:\Program Files\Oracle\VirtualBox> VBoxManage modifymedium "C:\Users\Dorian\VirtualBox VMs\simplerisk-20190105-001\sim  
plerisk-20190105-001-disk001.vdi" --resize 15360  
0%...10%...20%...30%...40%...50%...60%...70%...80%...90%...100%
```

Step 2: Setting Up to Boot Live ISO

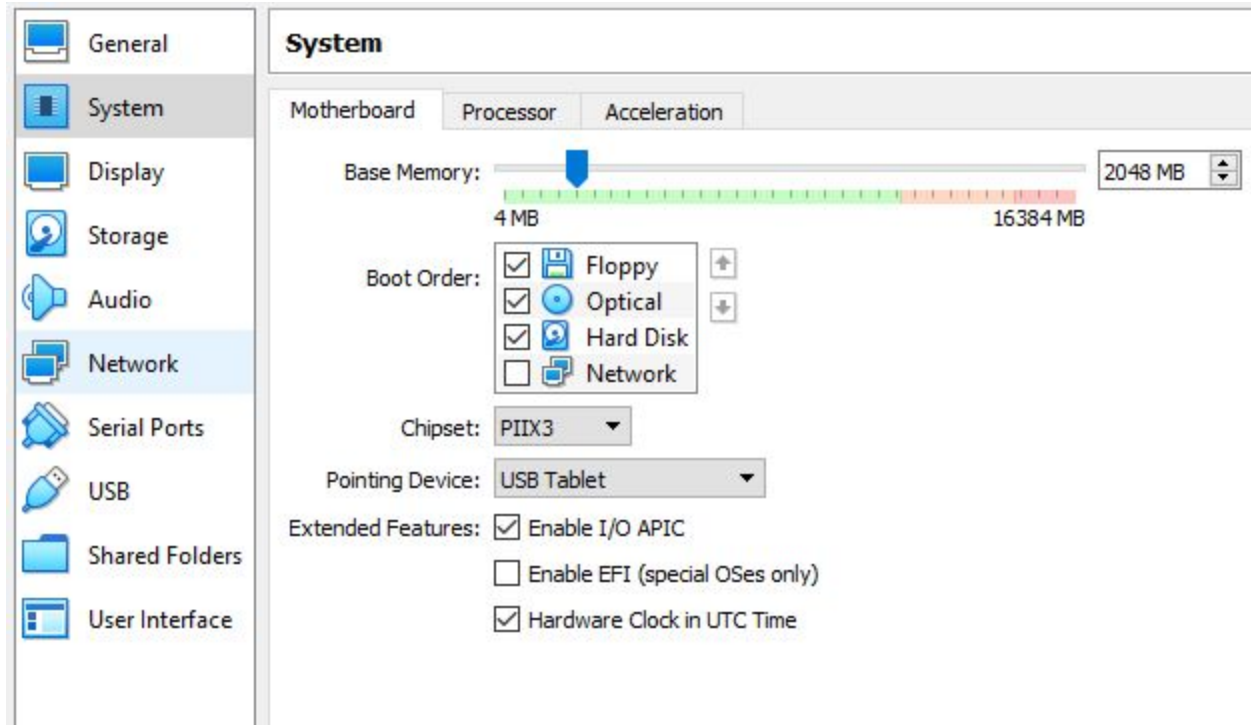
Right click your VM in VirtualBox and go to “Settings”. In the “Storage” tab if you see a CD/DVD drive listed go ahead and click it. If you do not see one click blue drive icon with a “+” on it near the center at the bottom and select “Add Optical Drive”. Now that you have your drive ready we must load it with the ISO in our example we are using Ubuntu 18.04 as mentioned before.

Click the CD/DVD drive in the list and on the right hand side click the blue disc icon and then click “Choose virtual optical disk file”. Now select the ISO from where ever you downloaded it to. Last for this step check the “Live CD/DVD” checkbox, once done it should look something like this.



Step 3: Booting from the Live ISO

Boot the VM in my experience as long as the disk is considered present it will boot from it. If for any reason it doesn't you can select the boot order by right clicking the VM and going to the “Settings” menu then in the “System” menu you can adjust the the boot order as shown below.



Step 4: Using Ubuntu to expand the partition

Your VM should now attempt to boot from the Ubuntu ISO use the “Try Ubuntu” option to boot into Ubuntu 18.04. The following procedure is the most important to get correct and I will break this part up into smaller steps.

1) Open Terminal you can open it from Applications menu we used before just search for Terminal this time.

2) From terminal use “`sudo fdisk /dev/sda`”

```
ubuntu@ubuntu: ~  
File Edit View Search Terminal Help  
To run a command as administrator (user "root"), use "sudo <command>".  
See "man sudo_root" for details.  
  
ubuntu@ubuntu:~$ sudo fdisk /dev/sda  
  
Welcome to fdisk (util-linux 2.31.1).  
Changes will remain in memory only, until you decide to write them.  
Be careful before using the write command.  
  
Command (m for help):
```

3) Press “p” to print out the current partition scheme. Write down where sda5 starts.

4) Press “d” to delete sda5 first then sda2.



```
File Edit View Search Terminal Help

Welcome to fdisk (util-linux 2.31.1).
Changes will remain in memory only, until you decide to write them.
Be careful before using the write command.

Command (m for help): p
Disk /dev/sda: 15 GiB, 16106127360 bytes, 31457280 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
Disklabel type: dos
Disk identifier: 0x17dbf0c8

Device      Boot  Start      End  Sectors  Size Id Type
/dev/sda1   *      2048    1499135   1497088   731M 83 Linux
/dev/sda2             1501182 20969471 19468290   9.3G  5 Extended
/dev/sda5             1501184 20969471 19468288   9.3G 83 Linux

Command (m for help): d
Partition number (1,2,5, default 5): 5

Partition 5 has been deleted.

Command (m for help): d
Partition number (1,2, default 2): 2

Partition 2 has been deleted.
```

5) Press “n” to create a new partition, press “e” to select extended and number it 2. The defaults for start and end should be fine.

6) Press “n” again this time it should create logical partition 5. Set the first sector to the one recorded in step 8 (Most likely: 1501184).The end value should be the default one which is as far out as it can go. When asked select “N” for “Do you want to remove the signature?”.



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```
Command (m for help): n
Partition type
  p   primary (1 primary, 0 extended, 3 free)
  e   extended (container for logical partitions)
Select (default p): e
Partition number (2-4, default 2): 2
First sector (1499136-31457279, default 1499136):
Last sector, +sectors or +size{K,M,G,T,P} (1499136-31457279, default 31457279):

Created a new partition 2 of type 'Extended' and of size 14.3 GiB.

Command (m for help): n
All space for primary partitions is in use.
Adding logical partition 5
First sector (1501184-31457279, default 1501184):
Last sector, +sectors or +size{K,M,G,T,P} (1501184-31457279, default 31457279):

Created a new partition 5 of type 'Linux' and of size 14.3 GiB.
Partition #5 contains a crypto_LUKS signature.

Do you want to remove the signature? [Y]es/[N]o: n

Command (m for help): █
```

7) Press “p” and verify everything looks correct.

8) Press “w” to write the changes out.

9) Now go ahead and restart the VM booting back into the Live Ubuntu 18.04 again.

10) Now back in terminal use “sudo cryptsetup luksOpen /dev/sda5 crypt1”

11) The password should be “simplerisk” unless you have otherwise changed it previously

12) Now get the Live OS to recognize the LVM using:



“sudo vgscan --mknodes”

”sudo vgchange -ay”

13) Resize the crypt using “sudo cryptsetup resize crypt1”

14) Resize the root (LVM) Physical Volume using “sudo pvresize /dev/mapper/crypt1”

15) Unlock the (LVM) Physical Volume using “ sudo pvchange -x y /dev/mapper/crypt1”

```
ubuntu@ubuntu:~$ sudo crypt luksOpen /dev/sda5 crypt1
sudo: crypt: command not found
ubuntu@ubuntu:~$ sudo cryptsetup luksOpen /dev/sda5 crypt1
Enter passphrase for /dev/sda5:
ubuntu@ubuntu:~$ sudo vgscan --mknodes
  Reading volume groups from cache.
  Found volume group "simplerisk-vg" using metadata type lvm2
ubuntu@ubuntu:~$ sudo vgchange -ay
  2 logical volume(s) in volume group "simplerisk-vg" now active
ubuntu@ubuntu:~$ sudo cryptsetup resize crypt1
ubuntu@ubuntu:~$ sudo pvresize /dev/mapper/crypt1
  Physical volume "/dev/mapper/crypt1" changed
  1 physical volume(s) resized / 0 physical volume(s) not resized
ubuntu@ubuntu:~$ sudo pvchange -x y /dev/mapper/crypt1
  Physical volume "/dev/mapper/crypt1" is already allocatable.
  Physical volume /dev/mapper/crypt1 not changed
  0 physical volumes changed / 1 physical volume not changed
ubuntu@ubuntu:~$
```

16) Resized the (LVM) Physical Volume using: sudo lvresize -l +100%FREE /dev/simplerisk-vg/root”



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```
ubuntu@ubuntu:~$ sudo lvresize -l +100%FREE /dev/simplerisk-vg/root
Size of logical volume simplerisk-vg/root changed from 8.32 GiB (2130 extents) to 13.32 GiB (3411 extents).
Logical volume simplerisk-vg/root successfully resized.
```

17) Re-lock the physical volume using “sudo pvchange -x n /dev/mapper/crypt1”

```
ubuntu@ubuntu:~$ sudo pvchange -x n /dev/mapper/crypt1
Physical volume "/dev/mapper/crypt1" changed
1 physical volume changed / 0 physical volumes not changed
```

18) Finally resize the filesystem using:

“sudo e2fsck -f /dev/mapper/simplerisk--vg-root”

“sudo resize2fs -p /dev/mapper/simplerisk--vg-root”

```
ubuntu@ubuntu:~$ sudo e2fsck -f /dev/mapper/simplerisk--vg-root
e2fsck 1.44.1 (24-Mar-2018)
Pass 1: Checking inodes, blocks, and sizes
Pass 2: Checking directory structure
Pass 3: Checking directory connectivity
Pass 4: Checking reference counts
Pass 5: Checking group summary information
/dev/mapper/simplerisk--vg-root: 121580/545648 files (0.2% non-contiguous), 760192/2181120 blocks
ubuntu@ubuntu:~$ sudo resize2fs -p /dev/mapper/simplerisk--vg-root
resize2fs 1.44.1 (24-Mar-2018)
Resizing the filesystem on /dev/mapper/simplerisk--vg-root to 3492864 (4k) blocks.
The filesystem on /dev/mapper/simplerisk--vg-root is now 3492864 (4k) blocks long.
ubuntu@ubuntu:~$
```

Summary

These steps will have guided you through expanding the disk space on a SimpleRisk



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VM using VirtualBox. If you have found any instructions to be incorrect or lacking detail please contact us at support@simplerisk.com