

Using GParted to Increase Disk Size of a Linux Native Partition

In this article, the size of the virtual disk on the virtual machine will be increased at the hardware level and then once this is complete we will boot into a GParted live CD and perform the changes required to make use of the additional disk space so that the operating system is able to use it.

Important Notes: During the time that the GParted ISO is mounted that will be booted into this live CD rather than your normal operating system, basically meaning that during this process there will be down time from normal server operations.

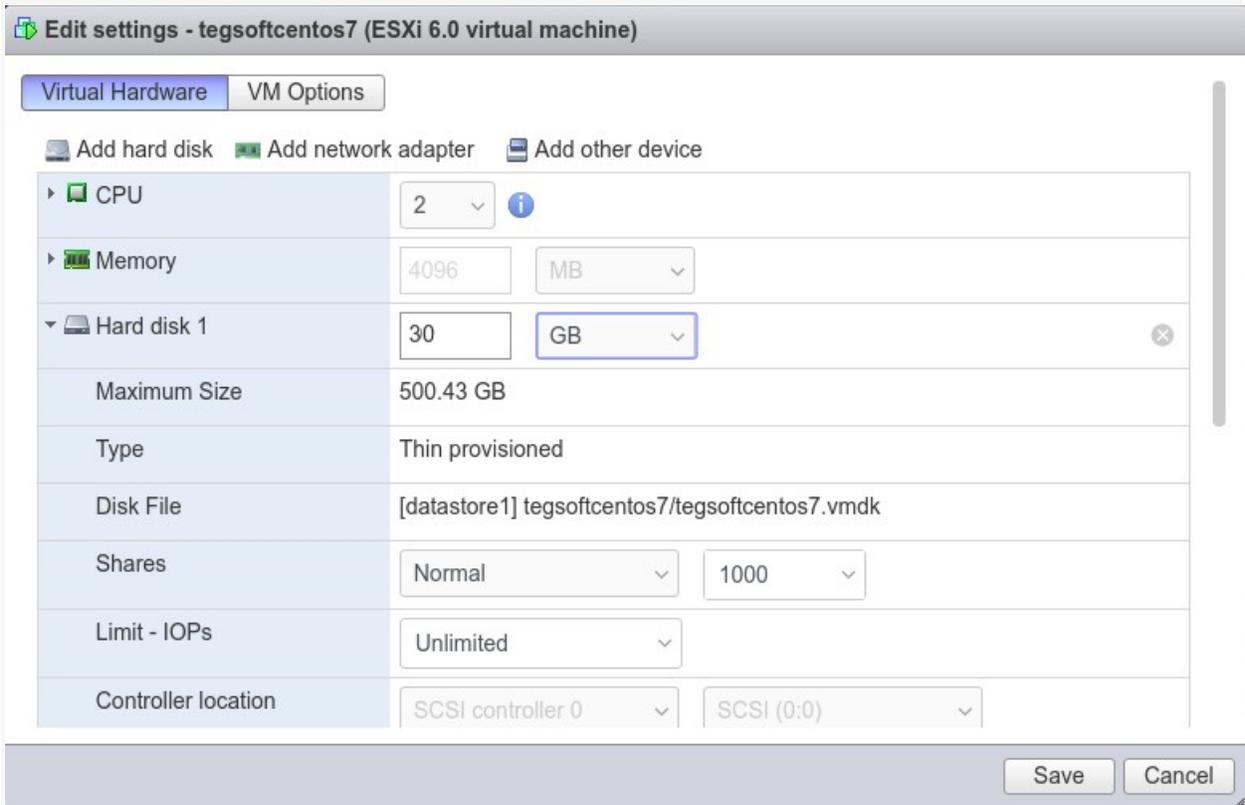
Be very careful when following this article as this process has the potential to cause a lot of damage to your data. If you are working with virtual machines make sure you take a snapshot of your virtual machine beforehand, or otherwise have some other form of up to date backup before proceeding. Note that a snapshot must not be taken until after the virtual disk has been increased in the first step below, otherwise you will not be able to increase the disk until it has been removed. It could also be worth cloning the virtual machine first and testing out this method on the clone.

Prerequisites: You will need to download the GParted live CD ISO file so that you can use it later, you can get this [here](#).

Note that /dev/sda1 is the partition we will be expanding.

Increasing the virtual hard disk

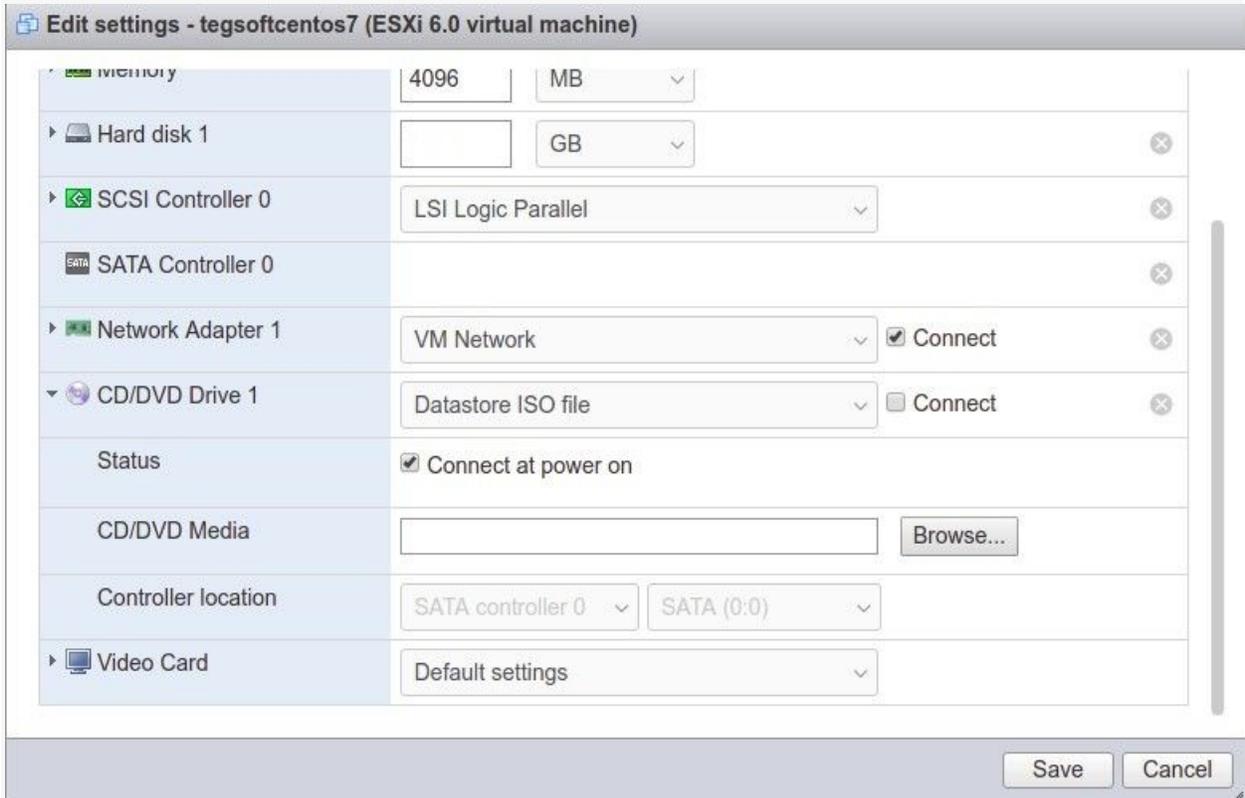
Firstly, we increase the allocated disk space on the virtual machine itself. This is done by right clicking the virtual machine, selecting edit settings, and then selecting the hard disk. In the below image, the hard disc have changed from 20GB to 30GB. Once complete click OK, this is all that needs to be done in VMware for this process.



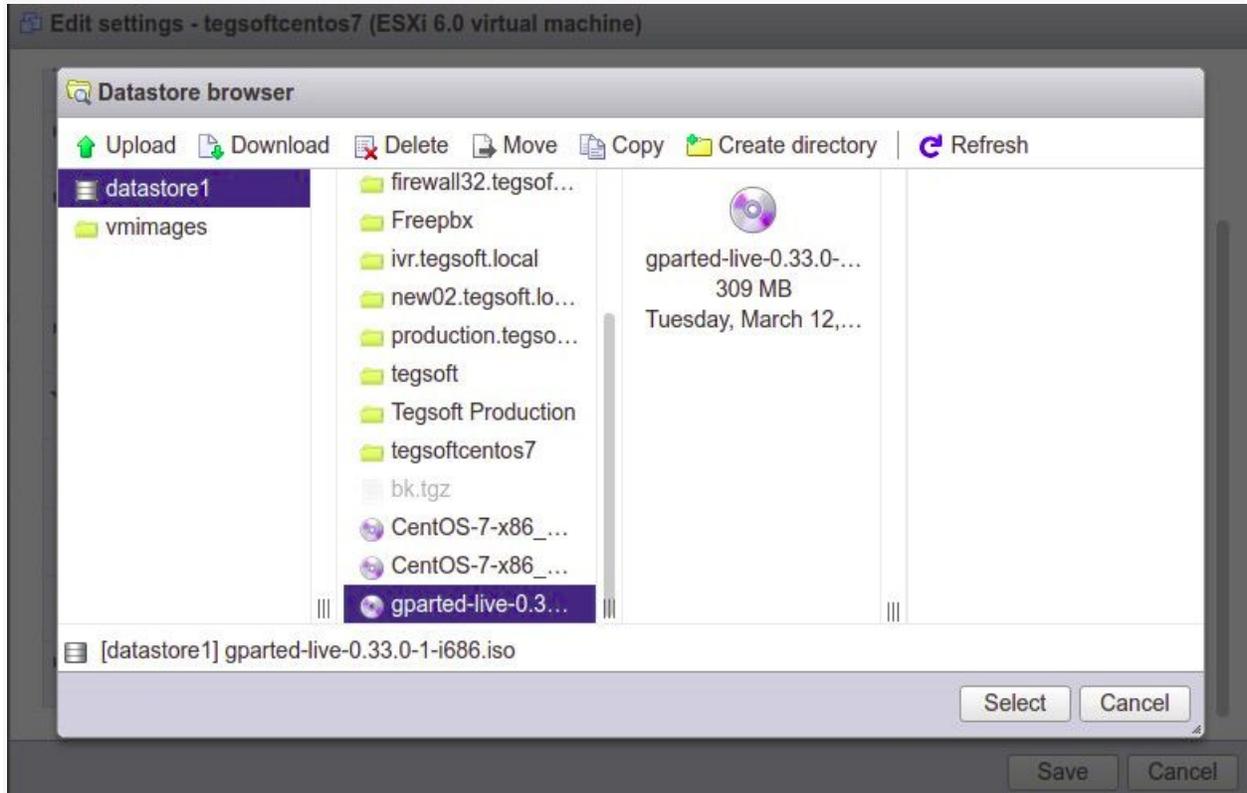
Alternatively you may need to shut down the virtual machine if it does not allow you to add or increase disks on the fly, if this is the case shut down and make the change, do not power the virtual machine back on at this stage as next we mount the GParted ISO.

Booting into the GParted Live CD

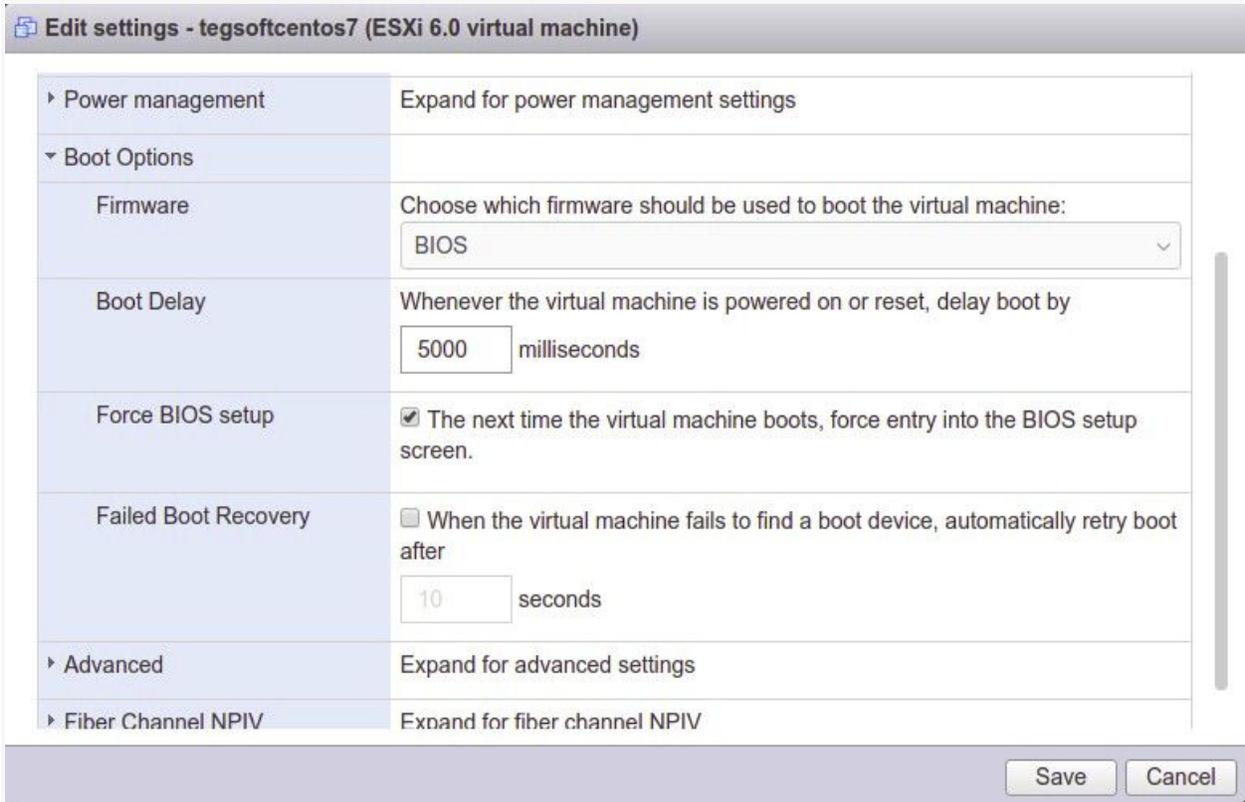
Select the CD/DVD Drive and then select your GParted ISO, in this instance you have already uploaded this file to the datastore



so just click the browse button to select it.



The boot options can be select to be presented on the next boot so that you can select to boot into the ISO easier. You can also adjust the time to delay the boot so that you have appropriate time to select that you want to boot from CD, in the below image this is set to 5 seconds, and force to boot into bios is enabled so that I can select to boot from CD on next boot.

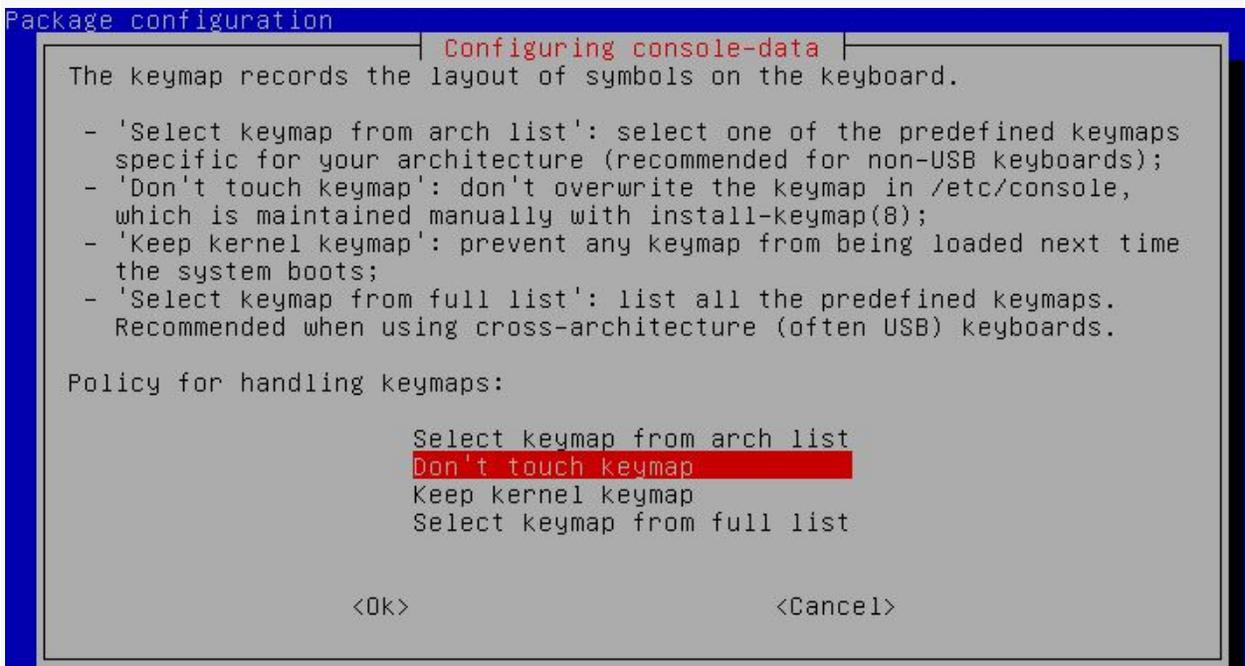


Now we are ready to power on the virtual machine (if your virtual machine was still on, shut down and power on), I have done this using some older versions of GParted in the past and it is worth noting that over time the GUI has changed so the following images may look a little different for you.

Once the virtual machine has powered on and you have booted to the CD, you will be presented with the following menu, just press enter to boot into GParted Live (Default Settings).



Do NOT change anything just accept the defaults by pressing enter.



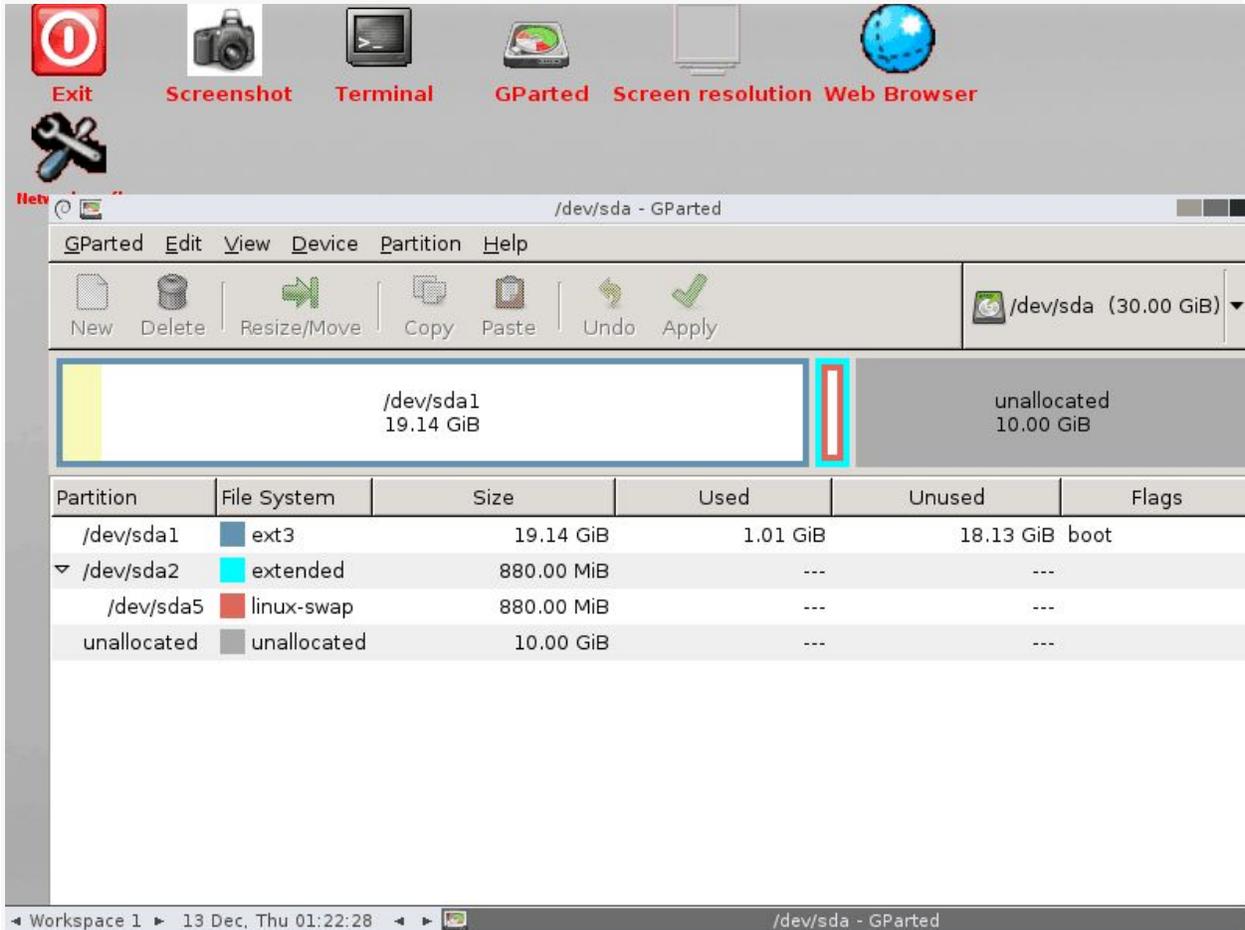
Select a language, pressing enter defaults to English.

```
Looking for keymap to install:
NONE
*****
Loading language settings:
 01: Bresilian          18: Latvian
 02: British English   19: Macedonian
 03: Bulgarian         20: Norwegian
 04: Catalan           21: Nepali
 05: Czech             22: Portuguese
 06: Dutch             23: Punjabi
 07: Finnish           24: Russian
 08: French            25: Spanish
 09: Galician          26: Simplified Chinese
 10: German            27: Sloven
 11: Greek             28: Swedish
 12: Hebrew            29: Traditional Chinese (Hong Kong)
 13: Hungarian         30: Traditional Chinese (Taiwan)
 14: Italian           31: Turkish
 15: Japan             32: Ukrainian
 16: Kinyarwanda       33: US English
 17: Lithuanian        34: Vietnamese

Which language do you prefer ?
[33] _
```

Next, select the default option 0 by pressing enter as we will be working with the GUI.

```
*****
///NOTE/// Later we will enter graphical environment if you choose '0'. However,
if graphical environment (X-window) fails to start, you can:
Run "sudo Forcevideo" to configure it again. Choose 1024x768, 800x600 or 640x480
as your resolution and the driver for your VGA card, etc. Most of the time you
can accept the default values if you have no idea about them.
If failing to enter graphical environment, and it does not return to text mode,
you can reboot again, and choose '1' here to config X manually.
-----
Which mode do you prefer ?
(0) Continue to start X to use GParted automatically
(1) Run 'Forcevideo' to config X manually
(2) Enter command line prompt
[0] _
```

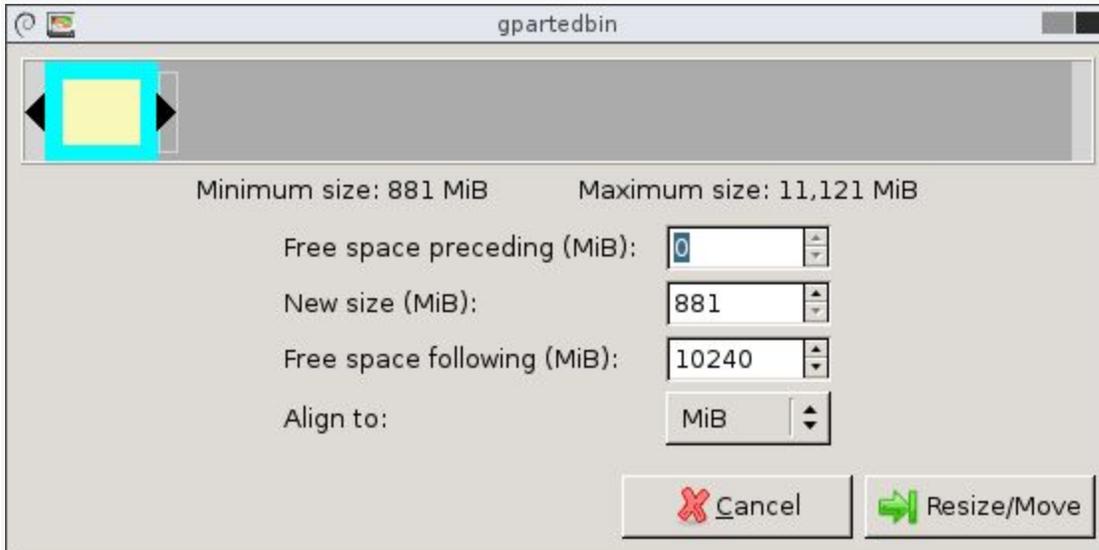


As you can see the original /dev/sda1 partition that is making use of the 20gb disk is there, as well as the new unallocated 10gb from when we increased the size of the virtual hard disk earlier. The space between the two is the swap space. The total /dev/sda disk size of 30gb is also shown.

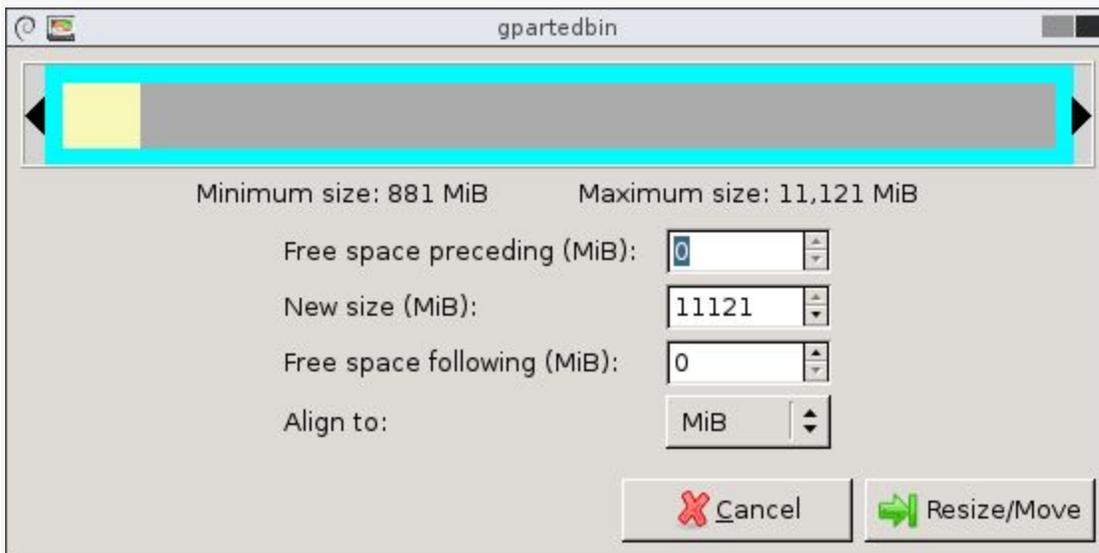
What needs to be done now is get /dev/sda1 to take up that unallocated space, this is not currently possible because swap is in the way so you need to move things around. If you do not have swap in between the partition to be extended and the unallocated space then you will be able to skip down a few steps until you arrive at the image where /dev/sda1 and the unallocated space are next to each other.

First we select /dev/sda2 which is the extended partition containing the swap, we want to expand this to include the 10gb of unallocated space.

Select /dev/sda2 and click “Resize/Move” and you will be presented with the following.



Basically you just need to drag the black arrow of /dev/sda2 all the way to the end of the unallocated space and click the Resize/Move button.

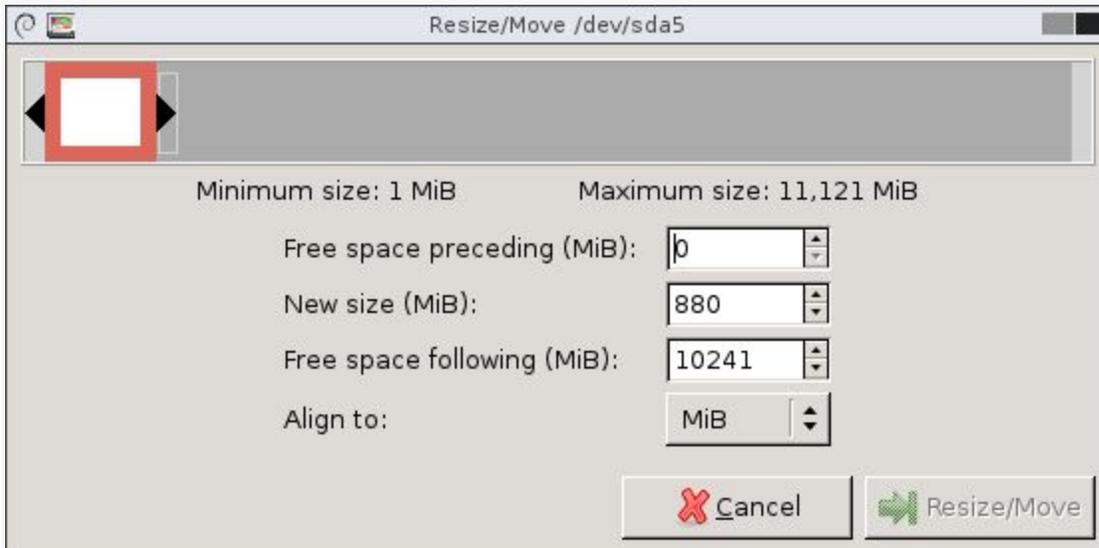


After doing this, you should see /dev/sda2 (represented by the blue box) spread out over the unallocated space.

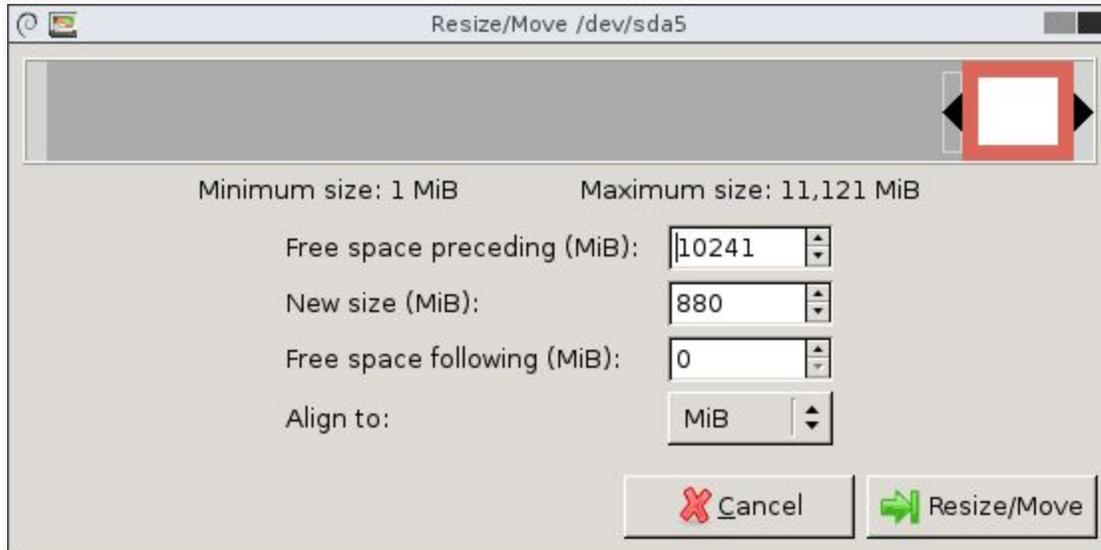


This change and all further changes will not yet be applied, you can see the tasks down the bottom of the GParted interface and these will be applied only once you click the Apply button. Alternatively you can click the Undo button to remove a pending change.

This time we want to select /dev/sda5 which is the swap partition and select Resize/Move, this will result in the following.

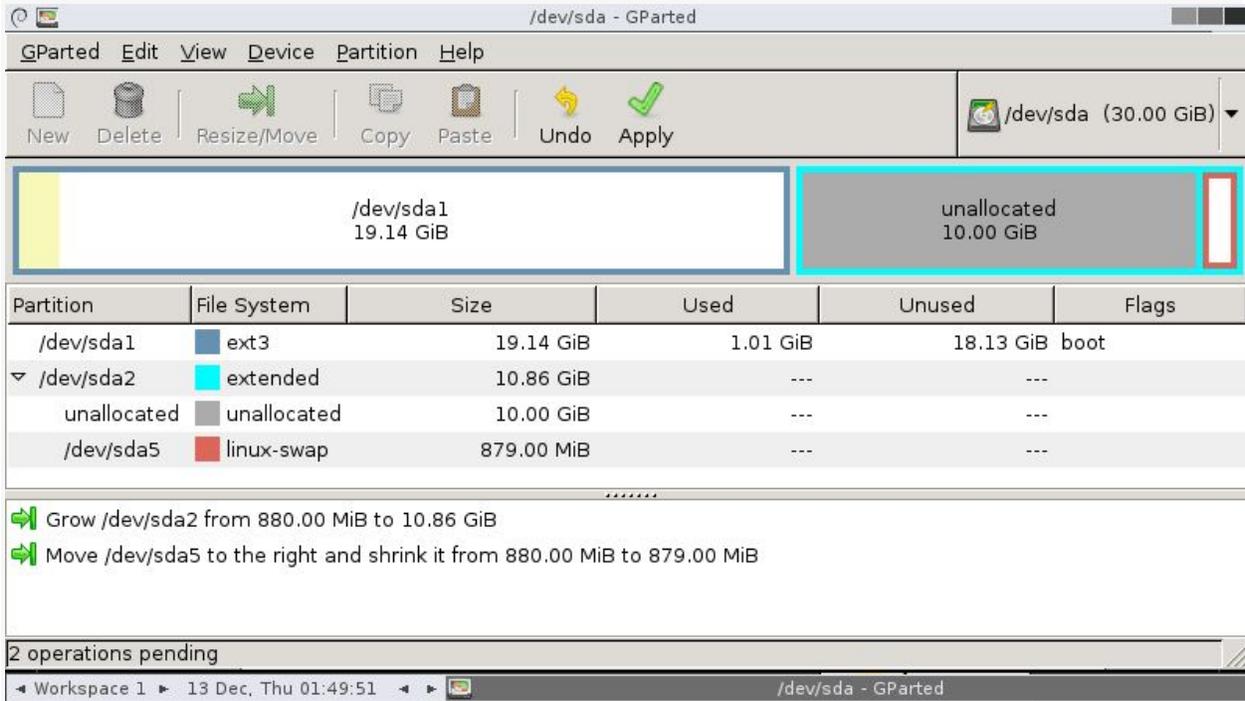


This time rather than expanding the partition, we want to just move swap all the way to the end of the /dev/sda2 space that it is in, this is done by just dragging the box to the end which will then look like this.

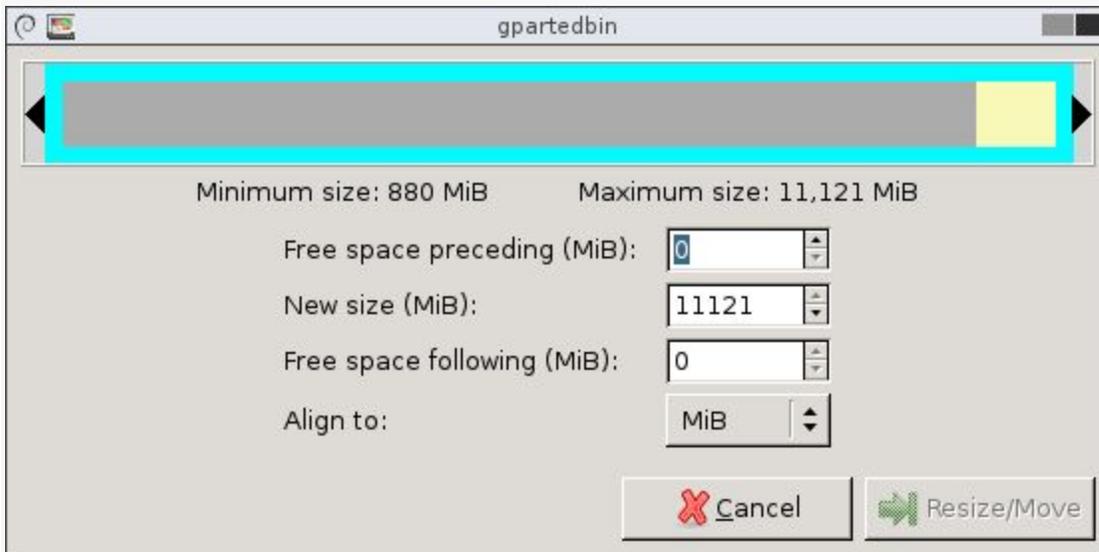


Click the Resize/Move button and then a warning may appear informing you that moving a partition might cause your operating system to fail to boot. It also warns that performing this move may take a long time to apply, read the warning then click OK to continue.

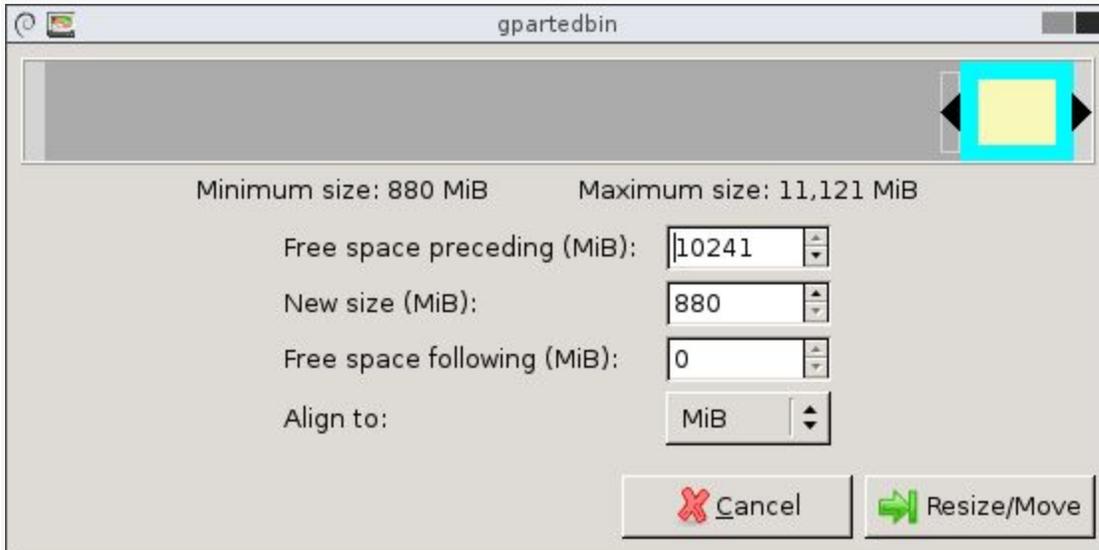
The GUI should now look something like the below image, where /dev/sda1 is located right next to /dev/sda2 which contains the unallocated space.



Select the /dev/sda2 extended partition and click Resize/Move.



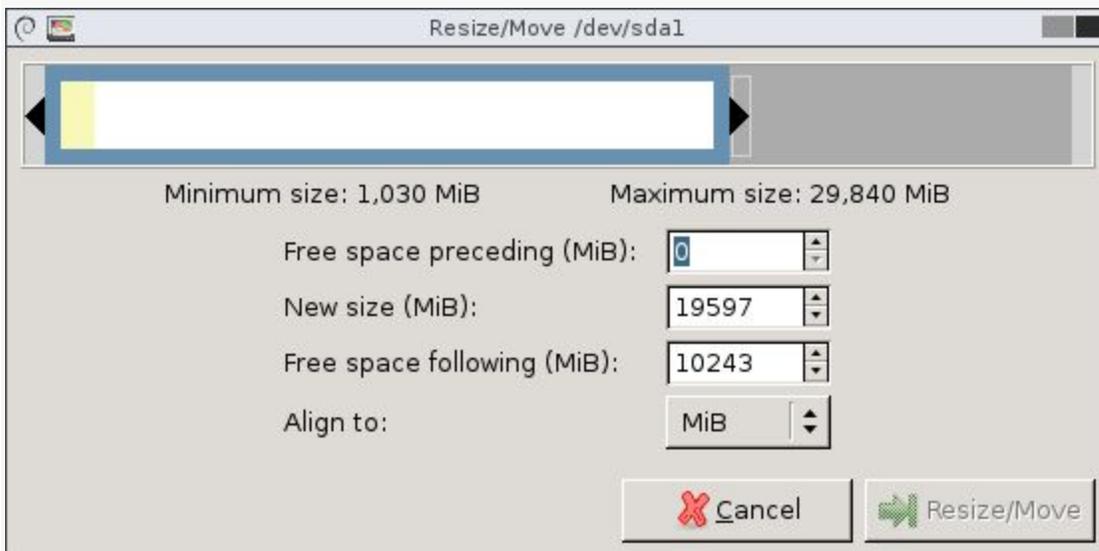
Drag this to the right so that only the swap space is contained and the grey unallocated space is freed, click Resize/Move once complete.



Once this is complete the disk will look like this.

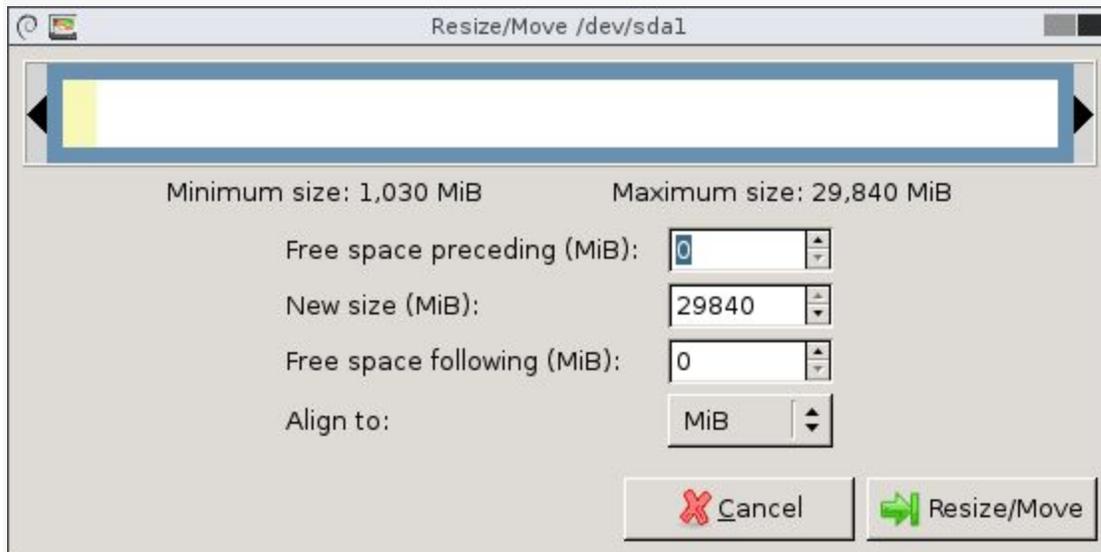


Now we have /dev/sda1 next to the unallocated space so we are finally ready to expand /dev/sda1. Select /dev/sda1 and click the Resize/Move button.



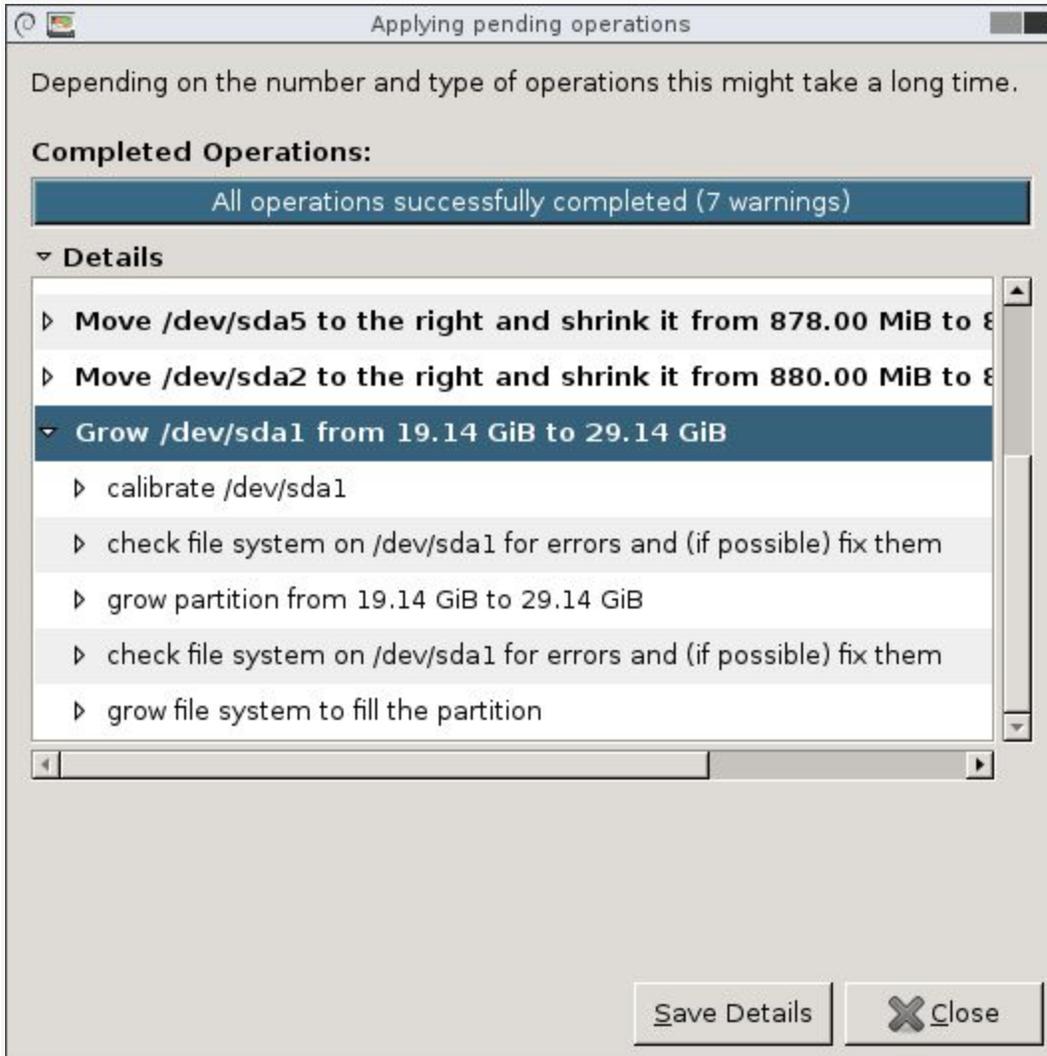
You will be able to perform this action straight away if you did not have swap in between /dev/sda1 and the unallocated space, the previous steps were to get swap out of the way in GParted.

Drag the arrow over so that the unallocated space is then consumed by /dev/sda1 as shown below, then click Resize/Move.



Once this is done the /dev/sda1 partition will now be using the unallocated space that was previously there. All that is left to do is click the apply button which will apply the changes – you will be prompted to confirm with a warning that data loss may occur.

Once complete you will see something similar to the below image, you will be able to click close once finished.



Everything is now finished, you just need to reboot the virtual machine and then boot from disk rather than CD, alternatively shut down the virtual machine and unmount the live CD and then power it back on.

The article is quoted at

<https://www.rootusers.com/use-gparted-to-increase-disk-size-of-a-linux-native-partition/>