

Manipulating partitions and disks with Gparted

This article relies on the live media [created here](#)

Overview

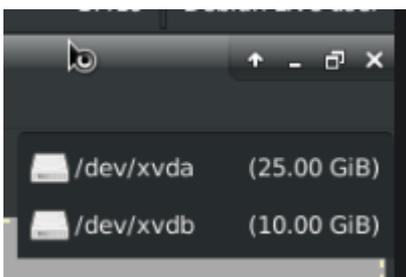
Gparted is a Linux/gnu front-end to the `parted` tool. It is the recommended method for manipulating disks when using a [Linux live session](#).

Working with a new disk

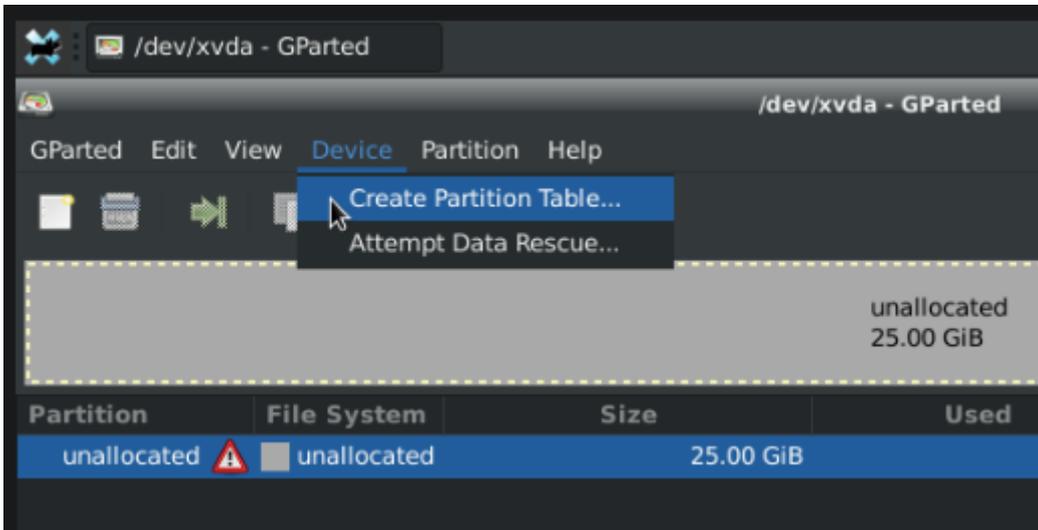
Create partition table

A disk needs a partition table made as the first step in formatting. This is generally an `MBR / msdos` or `GPT` table. `GPT` is preferred for all modern applications.

Select a disk in Gparted from the drop-down in the top right

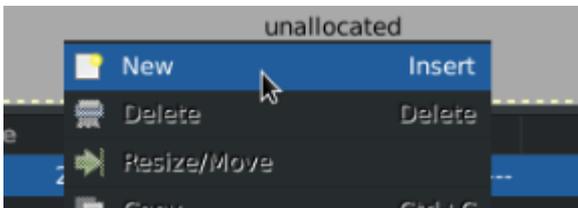


To create your table, hover over 'device' with your disk selected.



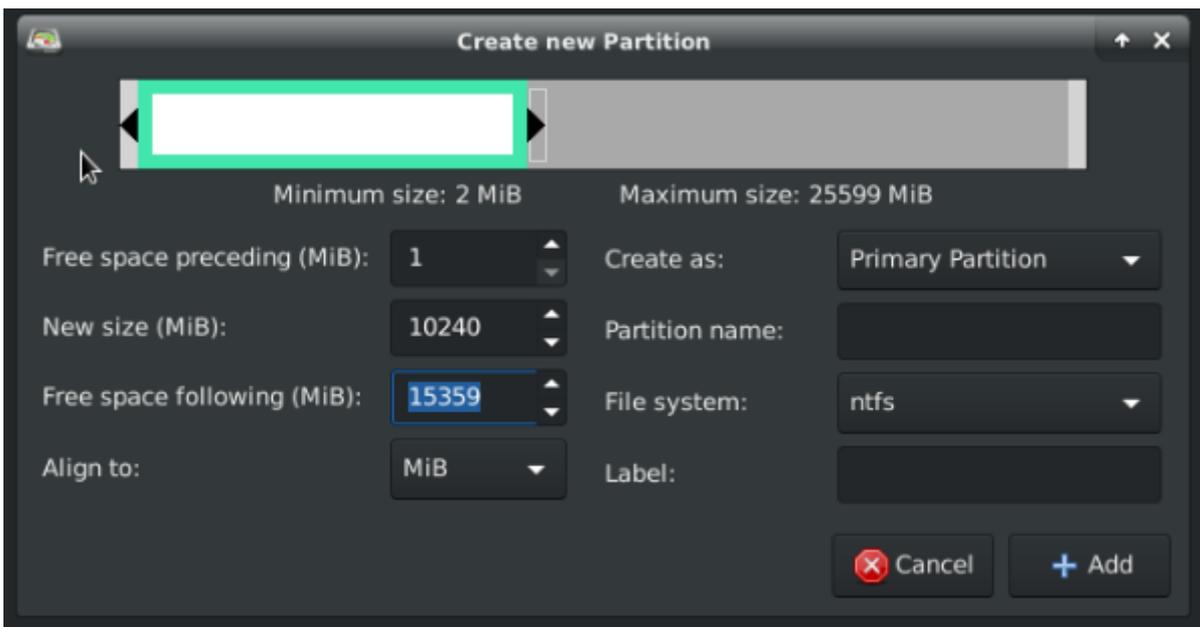
Create partition

To create a partition on a disk right click any unallocated space and choose 'New'.



Choose your size and location on the disk by dragging the sliders, the entire box or entering values manually. It is recommended to make partitions starting at the head (start) of the disk and work your way right.

Primary partitions are the typical user partition. Logical or extended are for more advanced setups.



Typical file system types and uses are:

Type	OS Compatibility	Use	Limitations
NTFS	Windows, with read natively on Linux/BSD or MacOS	Windows OS and data partitions	
ext2/3/4	Linux/BSD, with read on other OS via third party tools	Linux/BSD OS and data partitions	
Fat32	Read/Write natively on most OS	Removable media	Fat32 file systems cannot hold files larger than 4GB
exFat	Read/Write natively on most OS	Removable media	
HFS/+	MacOS native with read on other OS via third party tools	MacOS OS and data partitions	

Working with existing disks

Manipulating partitions is dangerous and can result in a loss of data. It is recommended you have your data/disks images backed up prior to executing the following procedures.

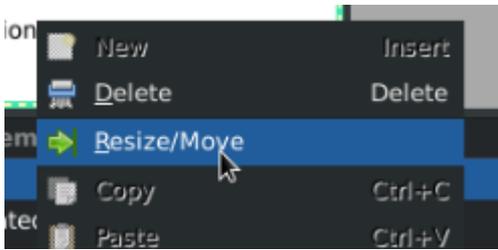
How partitions can move

When working with partitions it is important to understand how you can move them.

1. You can only enlarge a partition to the right
2. You can only shrink a partition to the left
3. Partitions can move left or right
4. Partitions cannot move around each other

Enlarge/Move/Shrink partitions

To change the size of a partition right click it and choose 'resize/move'. You can manipulate the size the same way as when making a new partition.



Enlarging

If enlarging a partition ensure you have enough **empty** space to the immediate right of the partition. If you do not, move the neighbor partition far enough right that you have space for your enlargement operation.

Shrinking

Shrinking is not recommended, make a new partition and move your data.

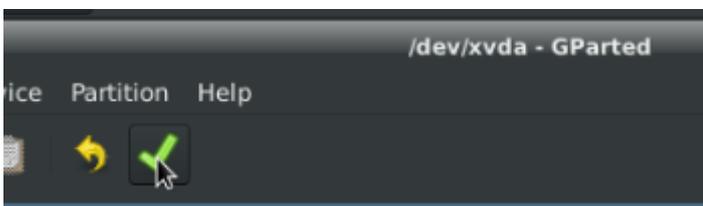
You can only shrink a partition as far as data is dispersed through a partition. A partition may need to be defragmented before significant size changes are possible.

Moving

Moving partitions takes a very long time. It is recommended that you restore data to an desired disk layout rather than change an existing one.

Finalizing changes

When you are done making changes to disk choose the 'Check' at the top to save those changes, confirm and the changes will start processing. **If you shrunk, or moved partitions this can take a very long time.**



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