
Application Note AN-117

Using GParted
Reach Technology, Inc.
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Reach Technology Inc.

www.reachtech.com

Sales: 510-770-1417 x112
sales@reachtech.com

Technical Support: 503-675-6464
techsupport@reachtech.com

1 Overview

This application note describes how to create an additional partition, or extend/resize an existing partition, on the SD card of a G2 Display Module using the Linux `gParted` utility.

This application note assumes familiarity with using the Linux VM, and with using terminal-level commands within the VM.

2 Quick Steps

2.1 Add a partition

- Start the VM, insert the SD card into a USB SD card reader attached to the host system.
- From the VM menu bar, select:
VM->Removable Devices-><Your USB Storage Device>->Connect (Disconnect from Host).
- Open a Terminal session (click the Terminal icon on the Desktop).
- Install `gparted` with the following command in the Terminal session (when prompted, the root password in the VM is "password" without the double-quotes):
\$ `sudo apt-get install gparted`
- Launch `gparted` with the following command in the Terminal window:
\$ `sudo gparted`
- Select device `/dev/sdb` from the drop-down list on the right.
- Click on the unallocated section.
- From the top menu, select Partition->New.
- To create a new partition that uses all of the remaining free space, leave all the defaults.
- On G2H2, select File System of `ext4`. On G2C1, select File System of `ext3`.
- Optionally add a Label.
- Click Add.
- Click Apply All Operations.
- When prompted, click Apply to apply all pending operations.
- When operation is complete, click Close.
- From the top menu, select GParted->Quit.
- From the terminal menu, select File->Close Window.

2.2 Extend/Resize a partition

- Start the VM, insert the SD card into a USB SD card reader attached to the host system.
- From the VM menu bar, select:
VM->Removable Devices-><Your USB Storage Device>->Connect (Disconnect from Host).
- Open a Terminal session (click the Terminal icon on the Desktop).
- Install `gparted` with the following command in the Terminal session (when prompted, the root password in the VM is "password" without the double-quotes):

```
$ sudo apt-get install gparted
```
- Launch `gparted` with the following command in the Terminal window:

```
$ sudo gparted
```
- Select device `/dev/sdb` from the drop-down list on the right.
- Click on the partition to extend.
- From the top menu, select `Partition->Resize/Move`.
- Drag the black arrow in the slider to the far-right side to extend the partition to the maximum available space.
- Click `Resize`.
- Click `Apply All Operations`.
- When prompted, click `Apply` to apply all pending operations.
- The operation may take a while to complete. When operation is complete, click `Close`.
- From the top menu, select `GParted->Quit`.
- From the terminal menu, select `File->Close Window`.

3 Detailed Steps

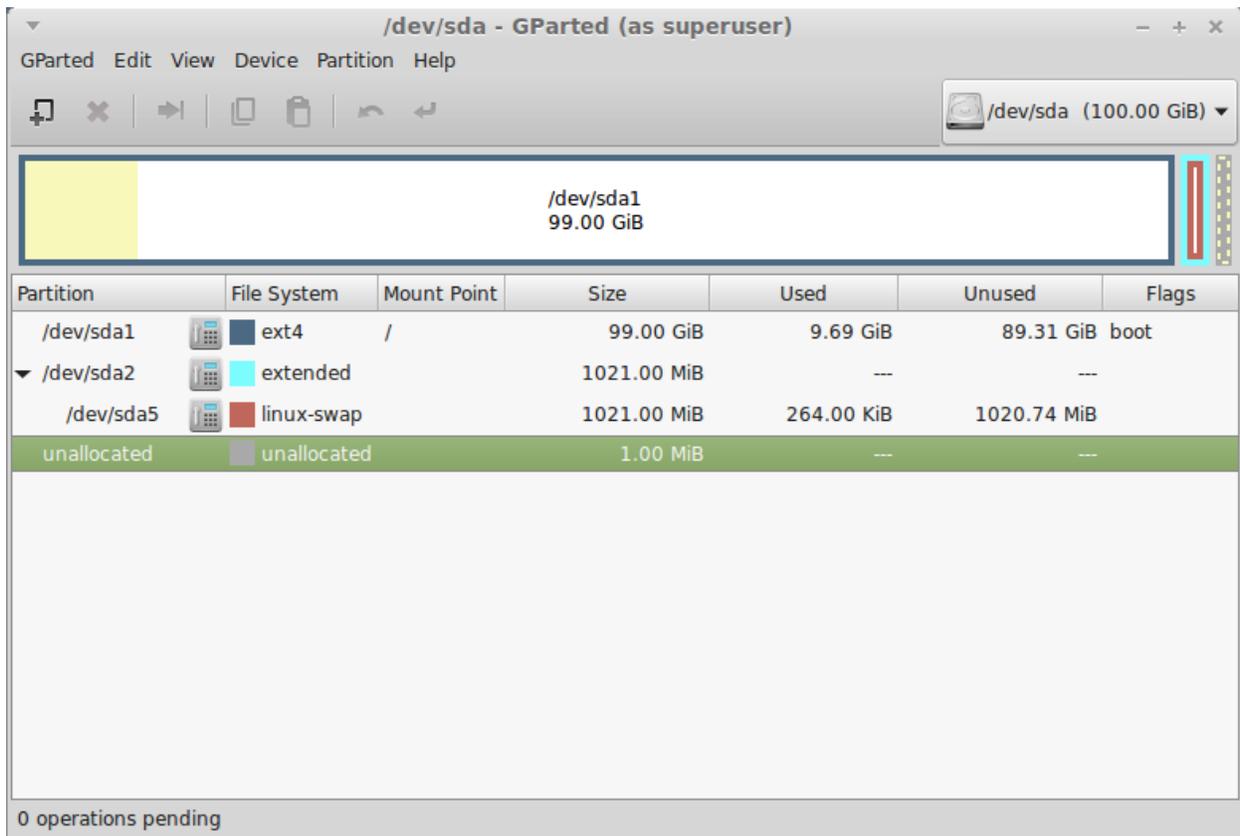
3.1 Add a partition

- Start the Linux VM.
- Once the VM is up and running, install the SD card into a USB card reader attached to the host system.
- If opened, close any new browser windows to the new mount points.
- You will see new 'Volume' icons on the desktop for each partition currently on the SD card.
- Open a Terminal session by clicking on the Terminal icon on the desktop.

- Install and launch Gparted by running the following commands in the Terminal window. When prompted, the root password in the VM is “password”, without the double-quotes.

```
$ sudo apt-get install gparted  
$ sudo gparted
```

(Start-up screen for gparted.)



- Select `/dev/sdb` from the drop list on the right, and click on the unallocated section.

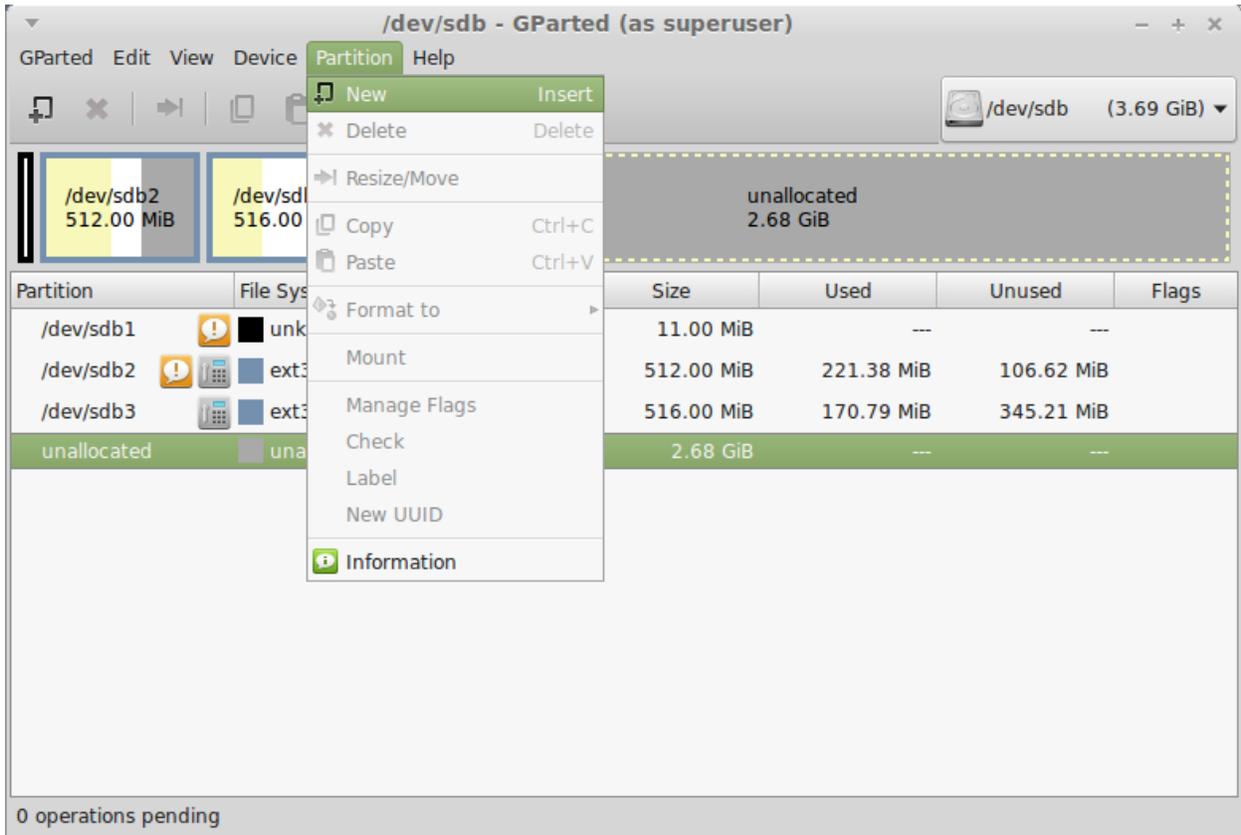
The screenshot shows the GParted application window titled `/dev/sda - GParted (as superuser)`. The window displays a graphical view of the disk layout and a table of partition information.

The graphical view shows a yellow bar representing the `/dev/sda1` partition (99.00 GiB) and a green bar representing the `/dev/sdb` partition (3.69 GiB). A small unallocated section is visible at the end of the `/dev/sda` disk.

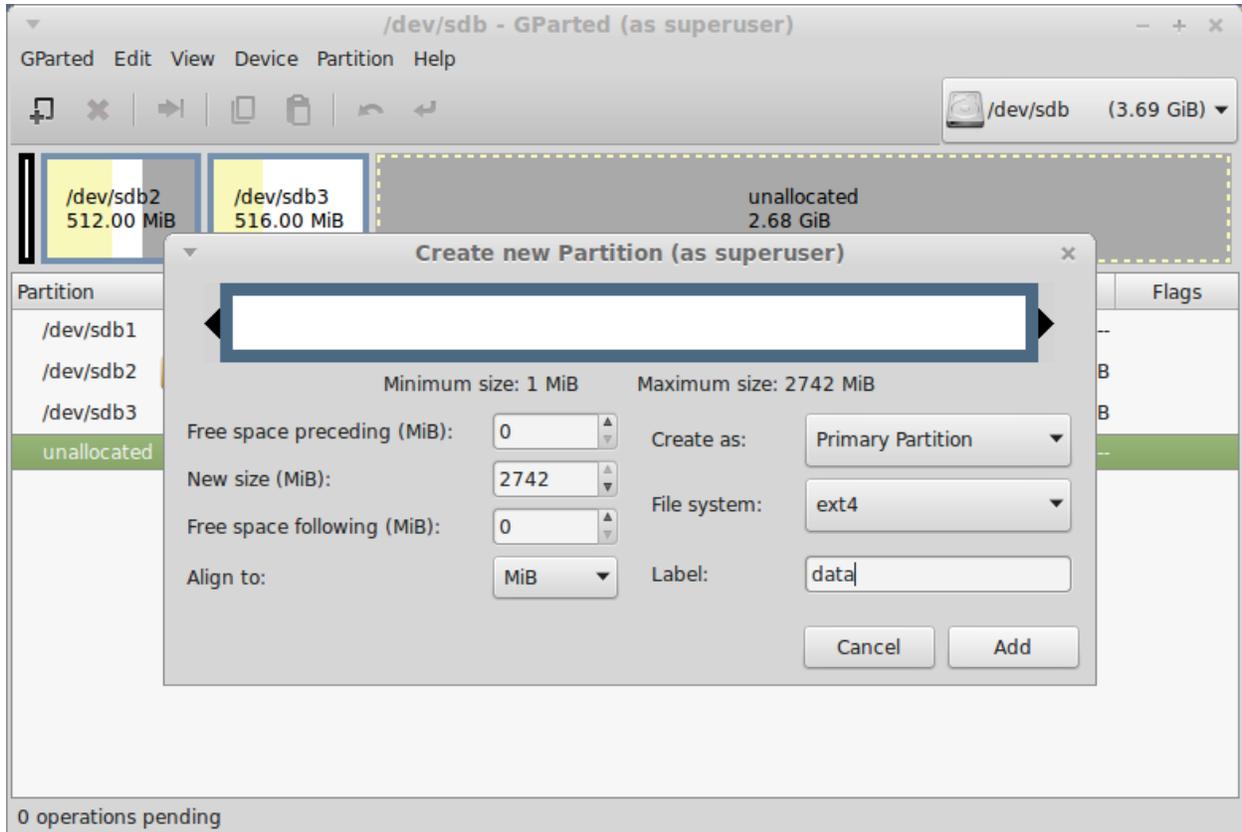
Partition	File System	Mount Point	Size	Used	Unused	Flags
<code>/dev/sda1</code>	ext4	<code>/</code>	99.00 GiB	9.69 GiB	89.31 GiB	boot
▼ <code>/dev/sda2</code>	extended		1021.00 MiB	---	---	
<code>/dev/sda5</code>	linux-swap		1021.00 MiB	276.00 KiB	1020.73 MiB	
unallocated	unallocated		1.00 MiB	---	---	

0 operations pending

- From the top menu, select Partition->New.



- To create a new partition that uses all of the remaining free space, leave all the default settings.
- On G2H2, select File System of ext4. On G2C1, select File System of ext3.
- Optionally add a Label.
- Click Add.



(After clicking Add. Note pending operations.)

The screenshot shows the GParted application window titled "/dev/sdb - GParted (as superuser)". The window displays a graphical view of the disk layout at the top, with three partitions highlighted: /dev/sdb2 (512.00 MiB), /dev/sdb3 (516.00 MiB), and a new partition (2.68 GiB). Below this is a table of partitions with the following data:

Partition	File System	Mount Point	Label	Size	Used	Unused	Flags
/dev/sdb1	unknown			11.00 MiB	---	---	
/dev/sdb2	ext3	/media/reach/disk		512.00 MiB	221.38 MiB	106.62 MiB	
/dev/sdb3	ext3	/media/reach/disk1		516.00 MiB	170.79 MiB	345.21 MiB	
New Partition #1	ext4		data	2.68 GiB	---	---	

At the bottom of the window, a message states: "Create Primary Partition #1 (ext4, 2.68 GiB) on /dev/sdb". A status bar at the very bottom indicates "1 operation pending".

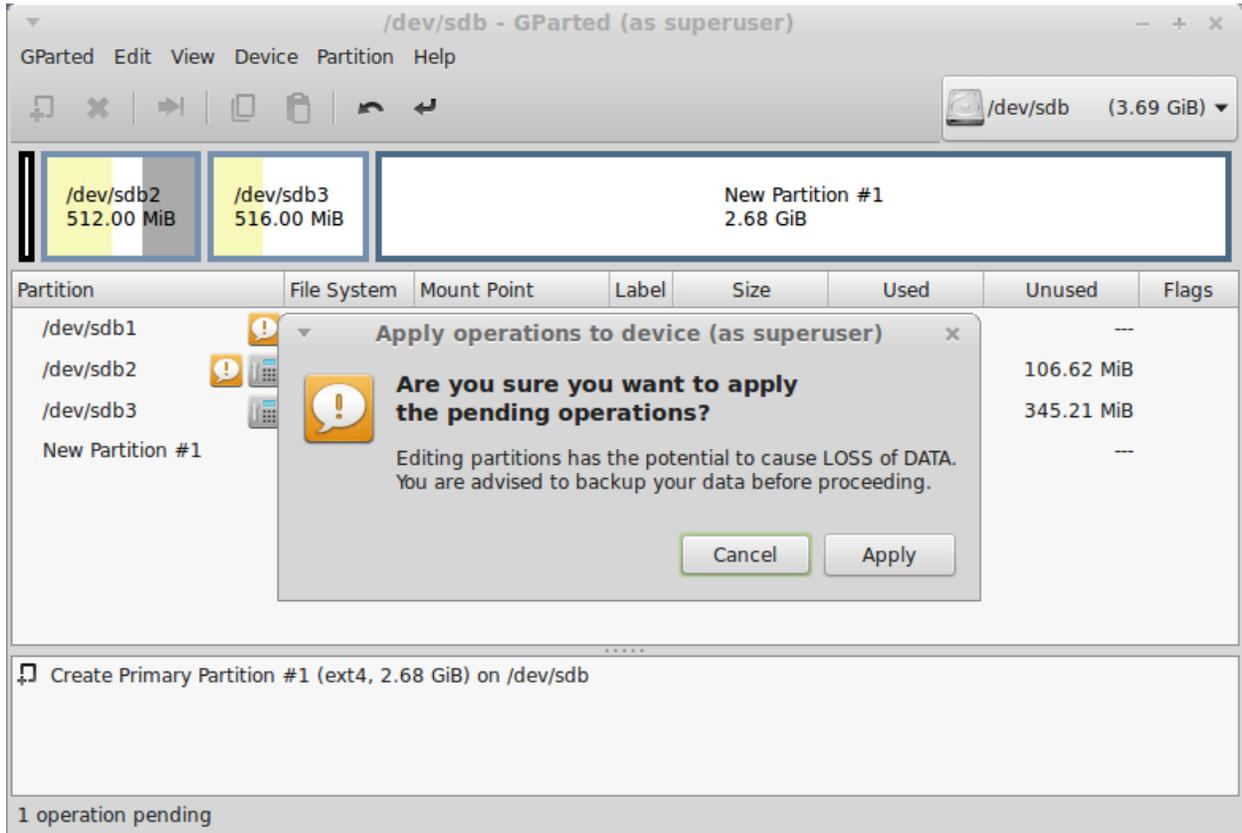
- Click Apply All Operations.

The screenshot shows the GParted application window titled "/dev/sdb - GParted (as superuser)". The window contains a graphical representation of the disk layout with three partitions: /dev/sdb2 (512.00 MiB), /dev/sdb3 (516.00 MiB), and New Partition #1 (2.68 GiB). The "Apply All Operations" button is highlighted with a yellow box. Below the graphical view is a table with the following data:

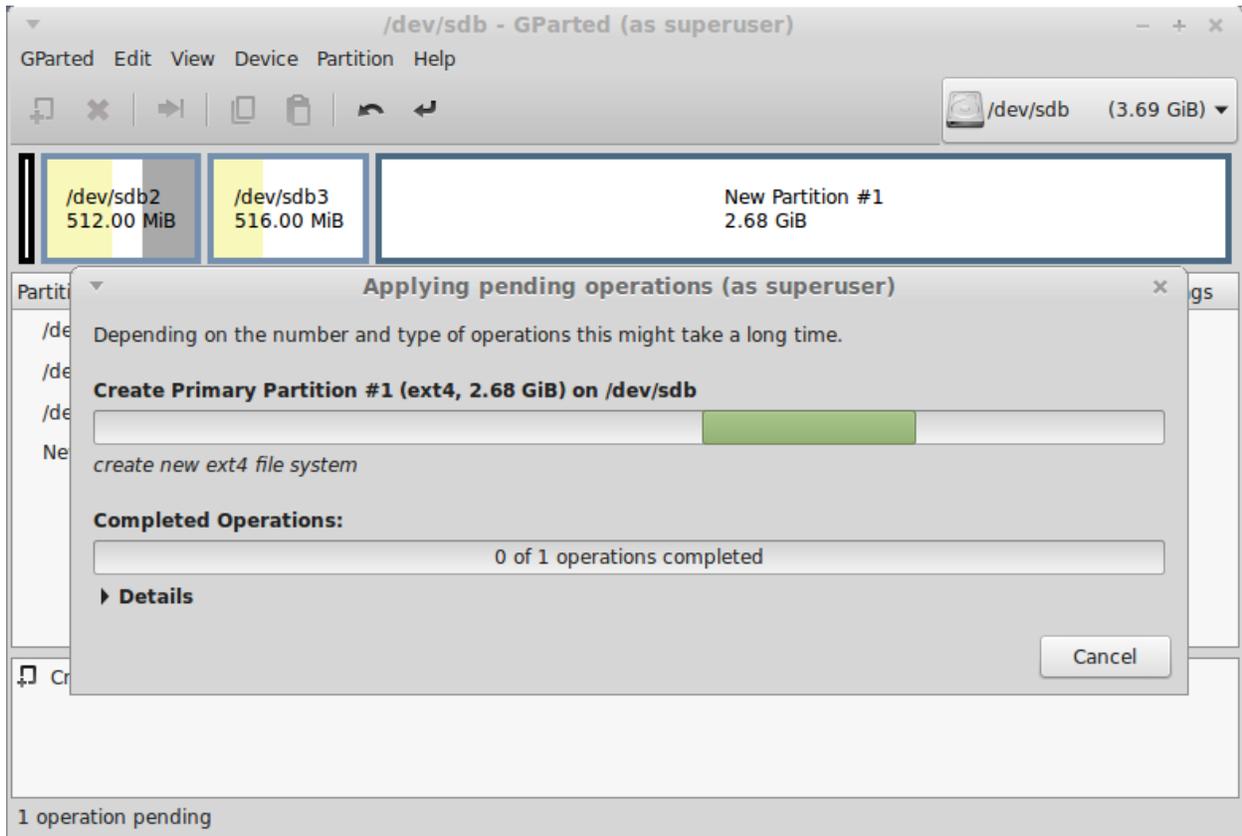
Partition	File System	Mount Point	Label	Size	Used	Unused	Flags
/dev/sdb1	unknown			11.00 MiB	---	---	
/dev/sdb2	ext3	/media/reach/disk		512.00 MiB	221.38 MiB	106.62 MiB	
/dev/sdb3	ext3	/media/reach/disk1		516.00 MiB	170.79 MiB	345.21 MiB	
New Partition #1	ext4		data	2.68 GiB	---	---	

At the bottom of the window, a status bar displays "1 operation pending".

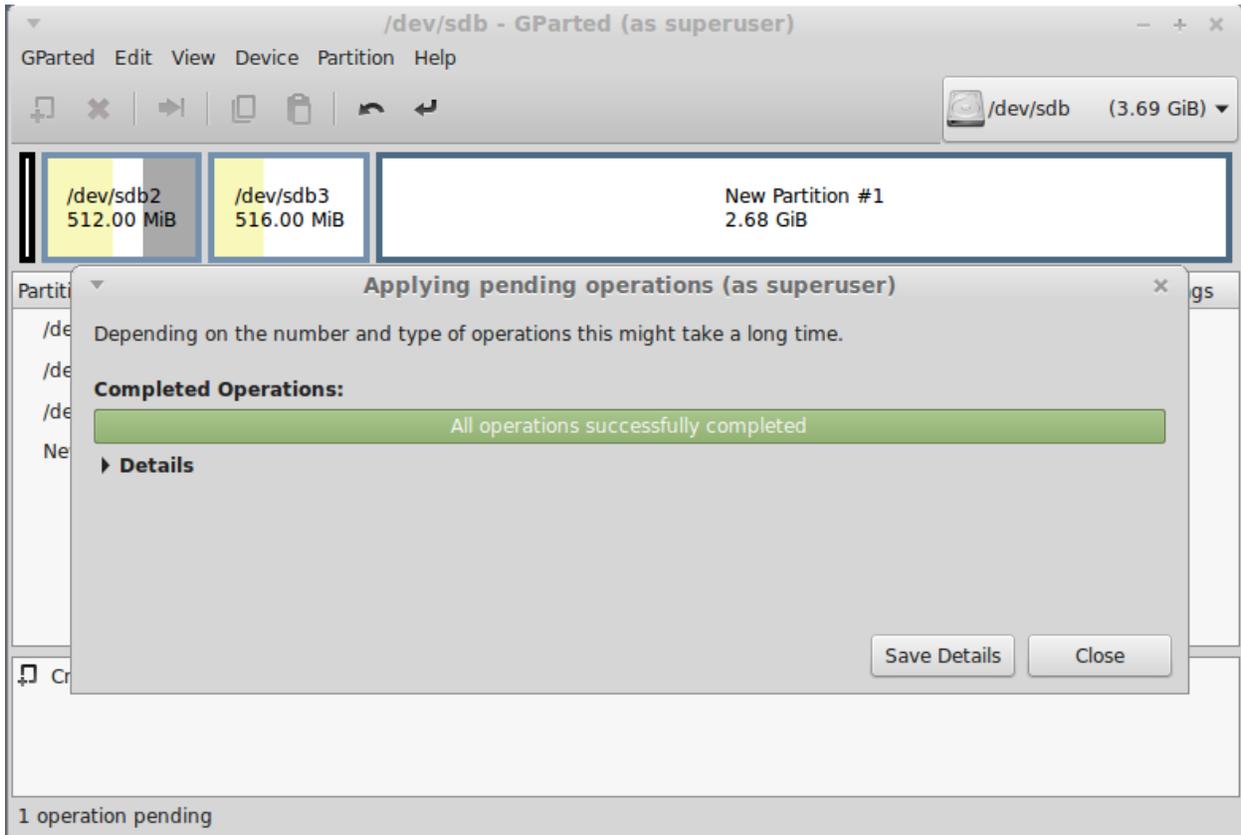
- When prompted, click `Apply` to apply all pending operations.



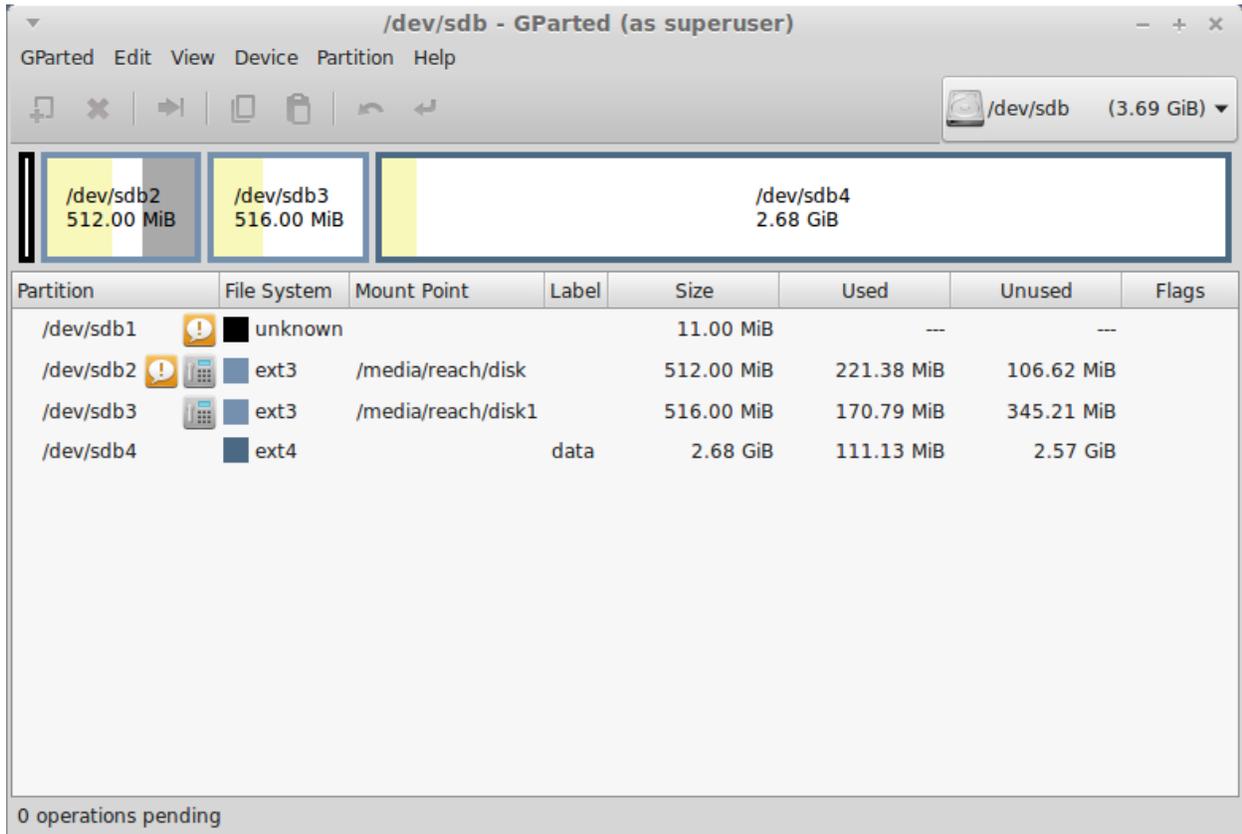
- Wait for the operation to complete.



- When the operation is complete, click Close.



- Operation complete.



- From the top menu, select GParted->Quit.
- From the terminal menu, select File->Close Window.

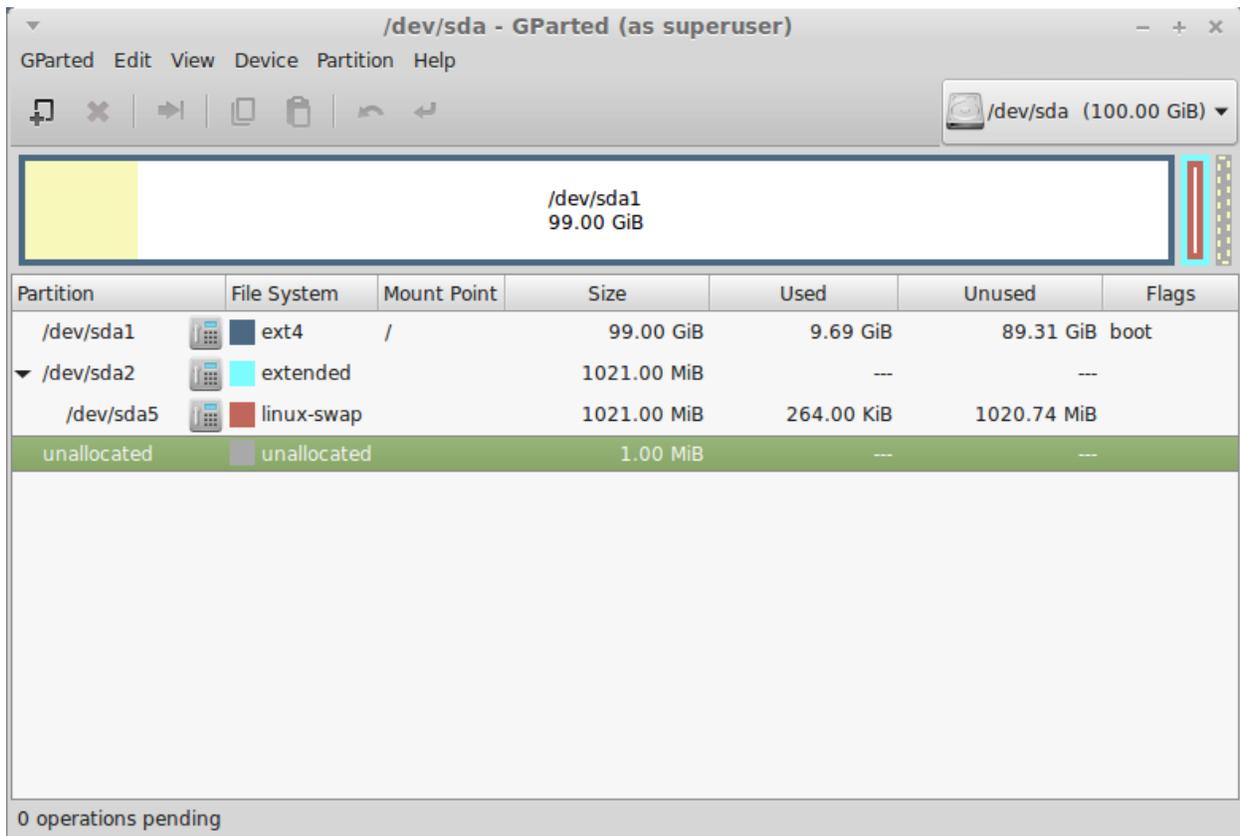
3.2 Extend/Resize a partition

- Start the Linux VM.
- Once the VM is up and running, install the SD card into a USB card reader attached to the host system.
- If opened, close any new browser windows to the new mount points.
- You will see new 'Volume' icons on the desktop for each partition currently on the SD card.
- Open a Terminal session by clicking on the Terminal icon on the desktop.

- Install and launch Gparted by running the following commands in the Terminal window. When prompted, the root password in the VM is “password”, without the double-quotes.

```
$ sudo apt-get install gparted  
$ sudo gparted
```

(Start-up screen for gparted.)



- Select /dev/sdb from the drop list on the right.

The screenshot shows the GParted application window titled "/dev/sda - GParted (as superuser)". The window has a menu bar with "GParted", "Edit", "View", "Device", "Partition", and "Help". Below the menu bar is a toolbar with icons for home, close, left arrow, copy, paste, undo, and redo. On the right side, there is a drop-down list showing two disk options: "/dev/sda (100.00 GiB)" and "/dev/sdb (3.69 GiB)". The "/dev/sdb" option is highlighted in green. The main area of the window shows a graphical representation of the disk layout, with a yellow bar representing /dev/sda1 (99.00 GiB) and a green bar representing /dev/sdb (3.69 GiB). Below the graphical area is a table with the following data:

Partition	File System	Mount Point	Size	Used	Unused	Flags
/dev/sda1	ext4	/	99.00 GiB	9.69 GiB	89.31 GiB	boot
▼ /dev/sda2	extended		1021.00 MiB	---	---	
/dev/sda5	linux-swap		1021.00 MiB	276.00 KiB	1020.73 MiB	
unallocated	unallocated		1.00 MiB	---	---	

At the bottom of the window, it says "0 operations pending".

- Click on the partition to extend.

/dev/sdb - GParted (as superuser)

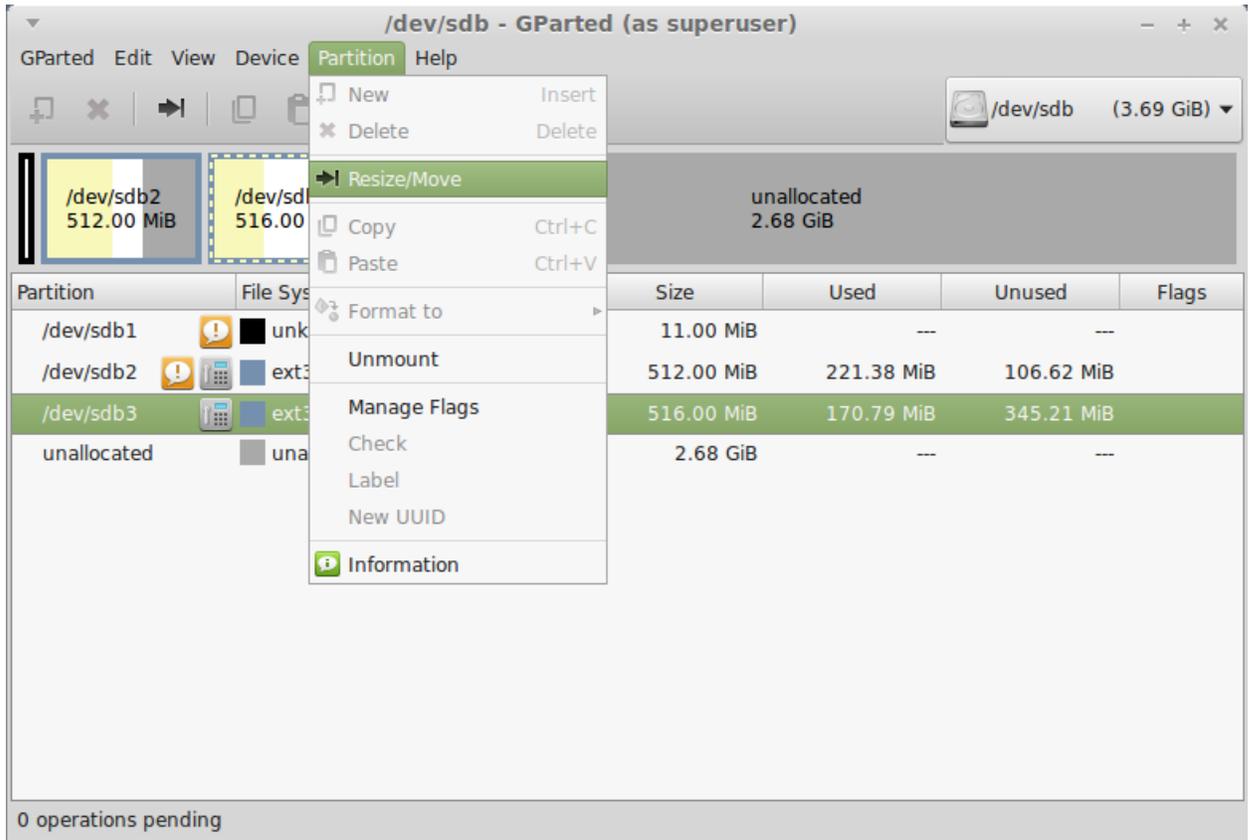
GParted Edit View Device Partition Help

/dev/sdb (3.69 GiB)

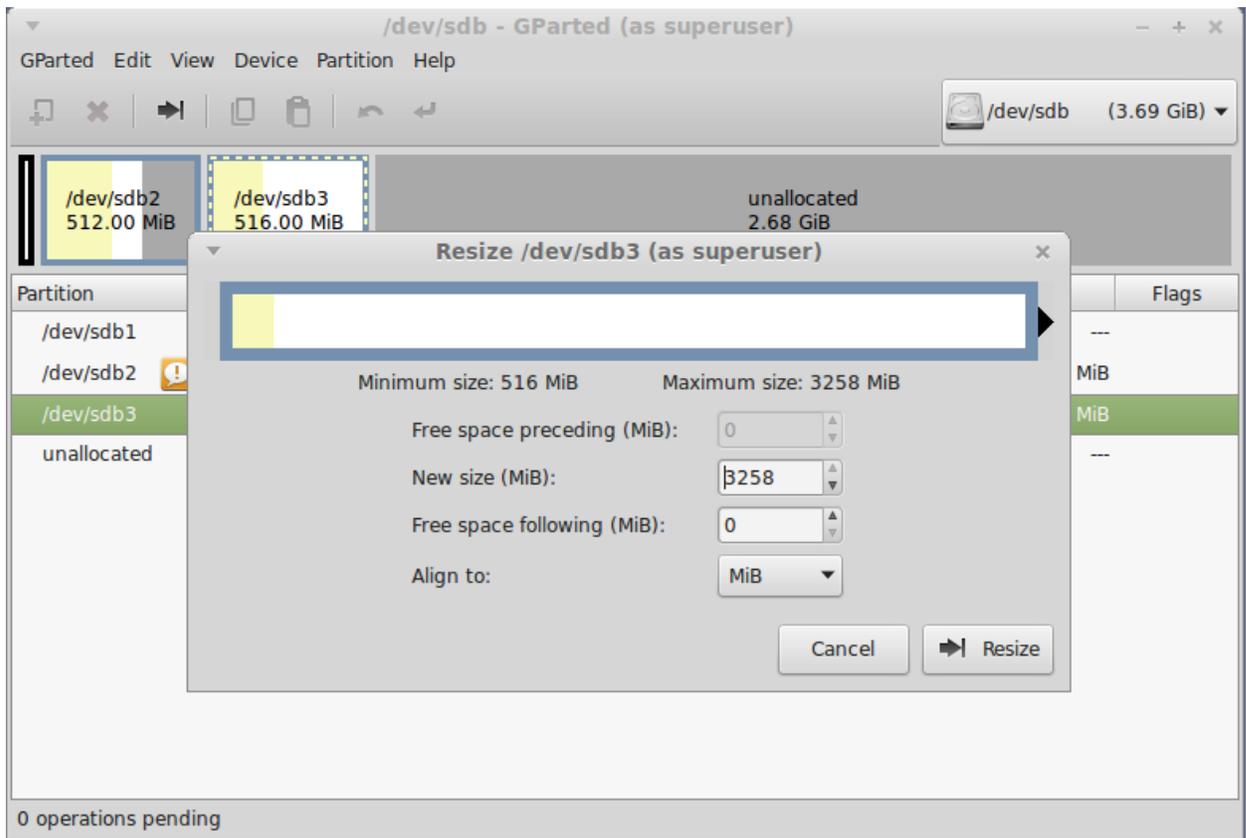
Partition	File System	Mount Point	Size	Used	Unused	Flags
/dev/sdb1	unknown		11.00 MiB	---	---	
/dev/sdb2	ext3	/media/reach/disk	512.00 MiB	221.38 MiB	106.62 MiB	
/dev/sdb3	ext3	/media/reach/disk1	516.00 MiB	170.79 MiB	345.21 MiB	
unallocated	unallocated		2.68 GiB	---	---	

0 operations pending

- From the top menu, select Partition->Resize/Move.



- Drag the black arrow in the slider to the far-right side to extend the partition to the maximum available space.
- When done, click `Resize`.



(After clicking `Resize`. Note pending operations.)

The screenshot shows the GParted application window titled "/dev/sdb - GParted (as superuser)". The window displays a graphical view of the disk layout and a table of partitions. A pending operation is shown at the bottom: "Grow /dev/sdb3 from 516.00 MiB to 3.18 GiB". The status bar at the bottom indicates "1 operation pending".

Partition	File System	Mount Point	Size	Used	Unused	Flags
/dev/sdb1	unknown		11.00 MiB	---	---	
/dev/sdb2	ext3	/media/reach/disk	512.00 MiB	221.38 MiB	106.62 MiB	
/dev/sdb3	ext3	/media/reach/disk1	3.18 GiB	166.79 MiB	3.02 GiB	

→ Grow /dev/sdb3 from 516.00 MiB to 3.18 GiB

1 operation pending

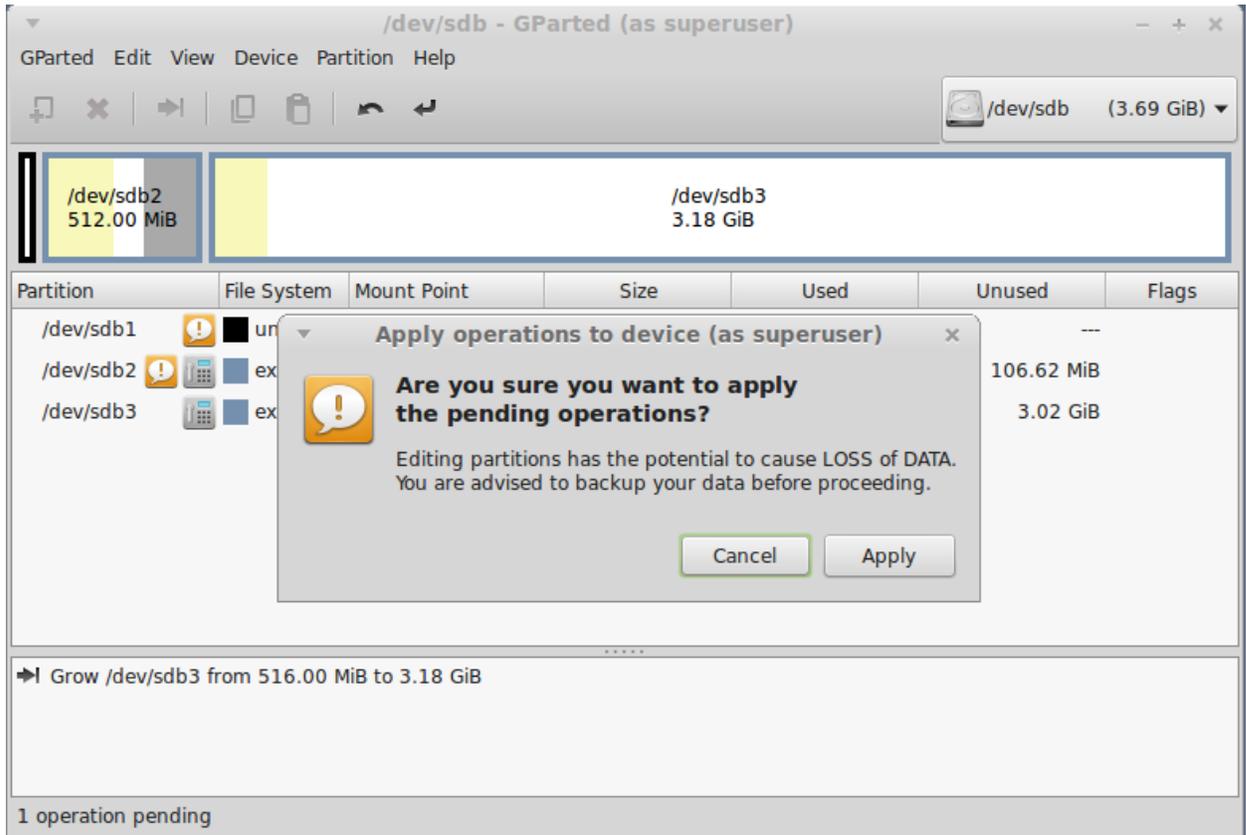
- Click Apply All Operations.

The screenshot shows the GParted application window titled "/dev/sdb - GParted (as superuser)". The window includes a menu bar (GParted, Edit, View, Device, Partition, Help) and a toolbar with various icons. A yellow tooltip labeled "Apply All Operations" is positioned over the corresponding icon in the toolbar. The main interface displays a graphical view of the disk layout with three partitions: /dev/sdb1 (11.00 MiB), /dev/sdb2 (512.00 MiB), and /dev/sdb3 (3.18 GiB). Below this is a table with the following data:

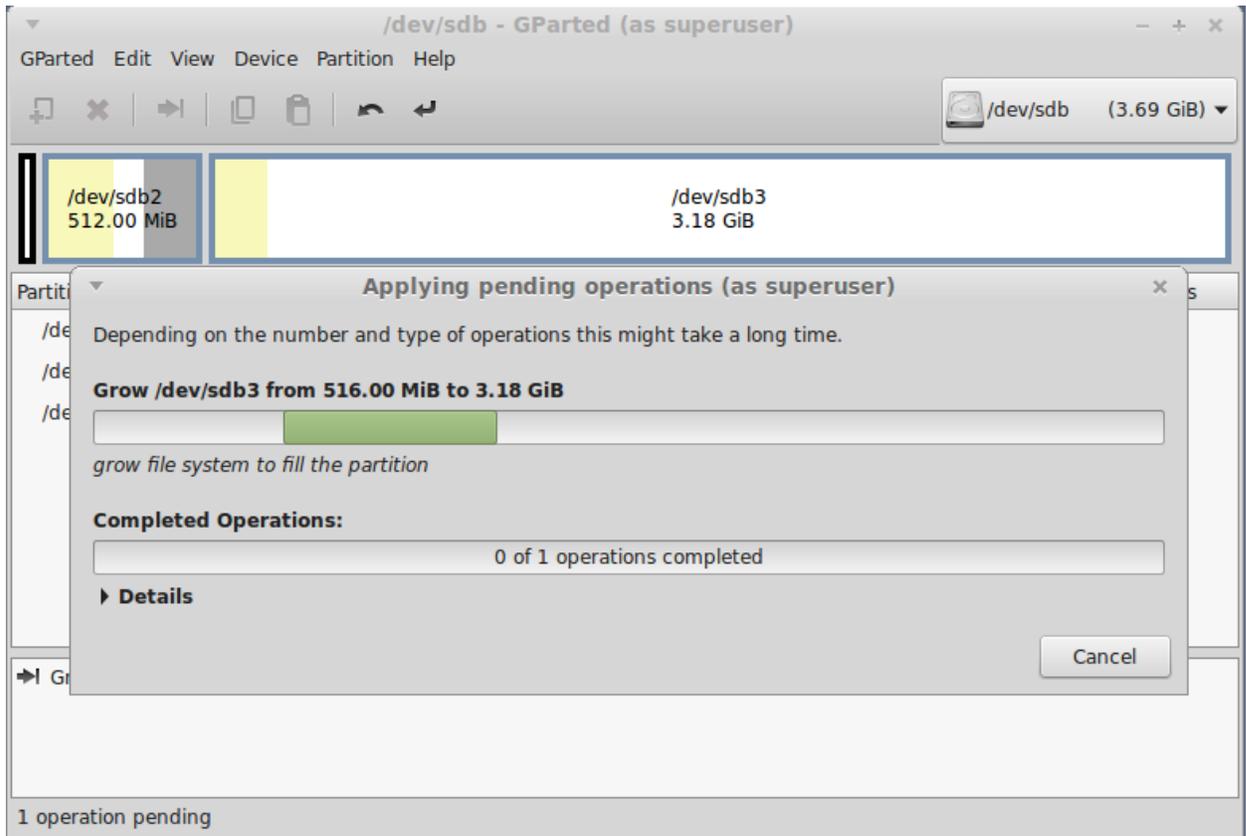
Partition	File System	Mount Point	Size	Used	Unused	Flags
/dev/sdb1	unknown		11.00 MiB	---	---	
/dev/sdb2	ext3	/media/reach/disk	512.00 MiB	221.38 MiB	106.62 MiB	
/dev/sdb3	ext3	/media/reach/disk1	3.18 GiB	166.79 MiB	3.02 GiB	

At the bottom of the window, a status bar indicates "1 operation pending". A tooltip above the table shows the operation: "Grow /dev/sdb3 from 516.00 MiB to 3.18 GiB".

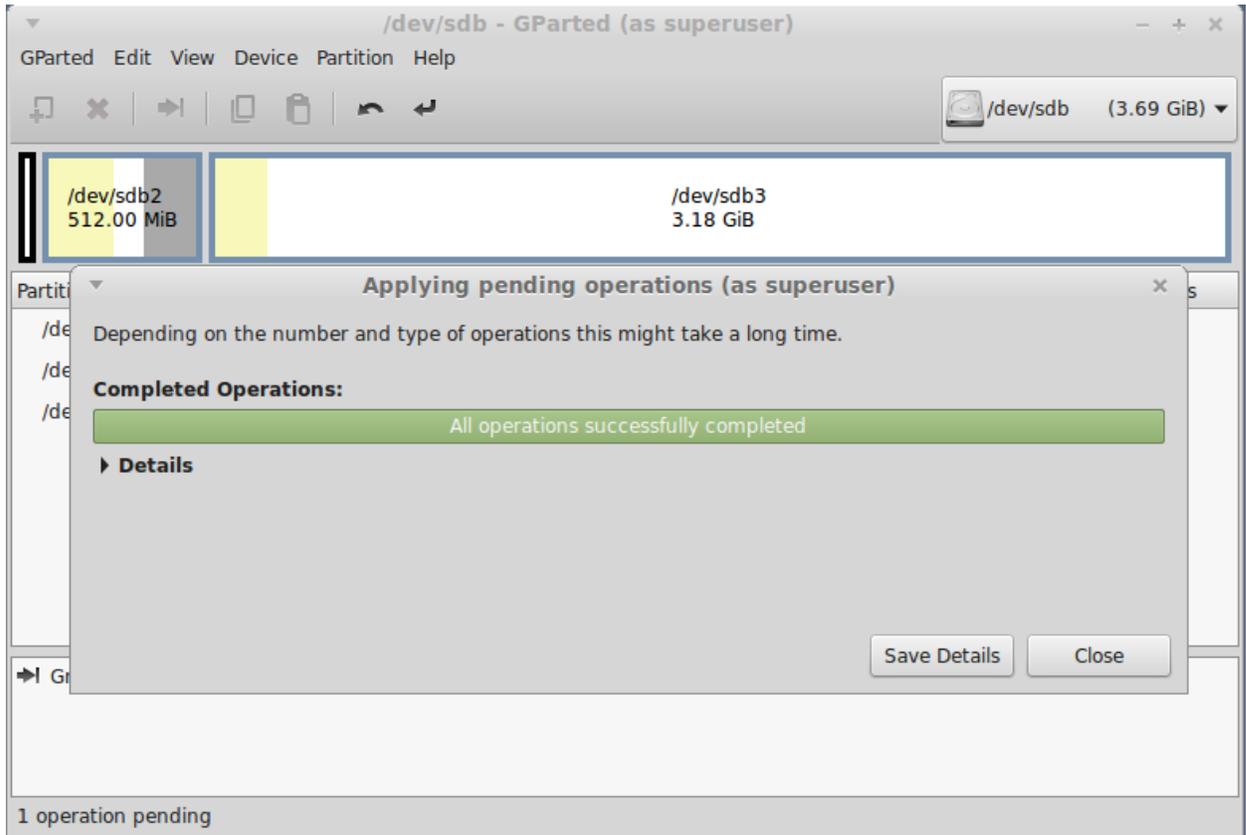
- When prompted, click `Apply` to apply all pending operations.



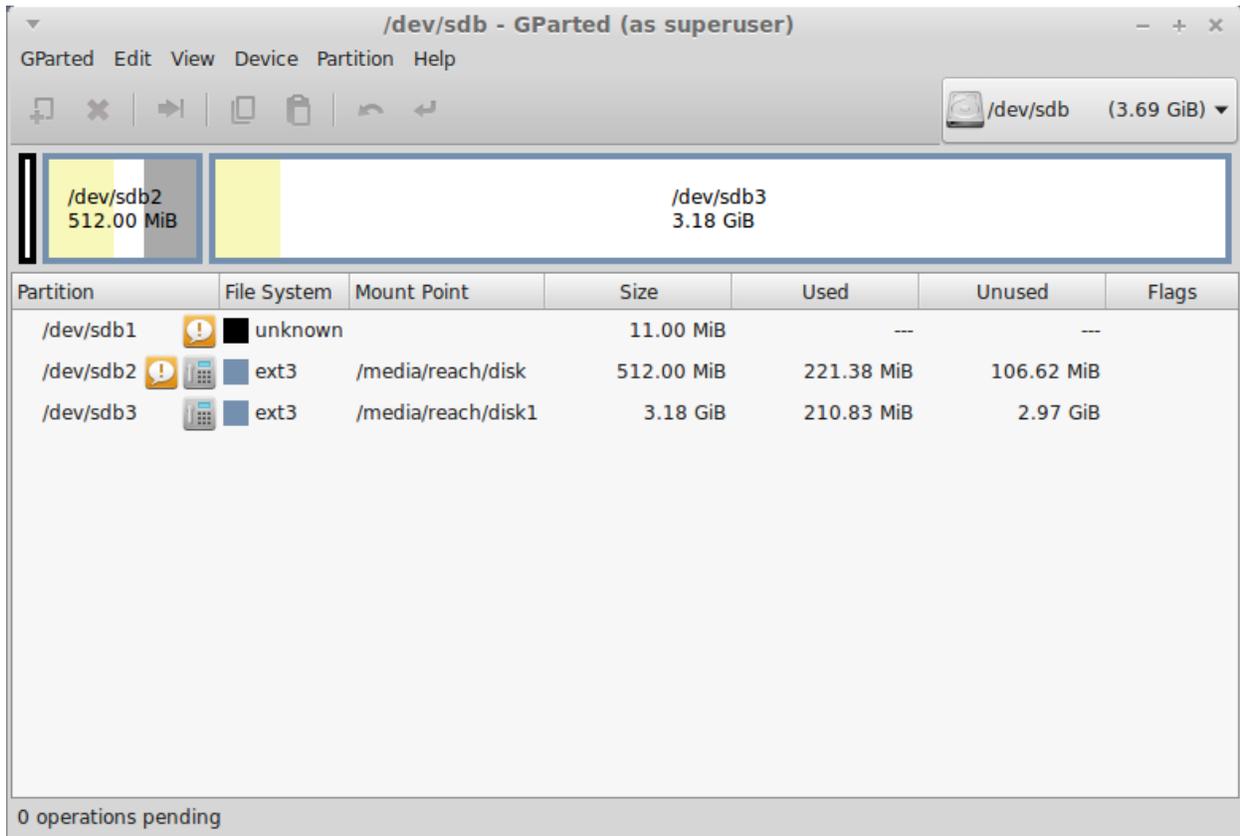
- The operation may take a while to complete.



- When operation is complete, click Close.



- Operation complete.



- From the top menu, select GParted->Quit.
- From the terminal menu, select File->Close Window.