

Multi-Boot USB Disk



We present how to create a **FULL** multi-boot USB disk with three Linux partitions with network update each of the partitions.

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Introduction

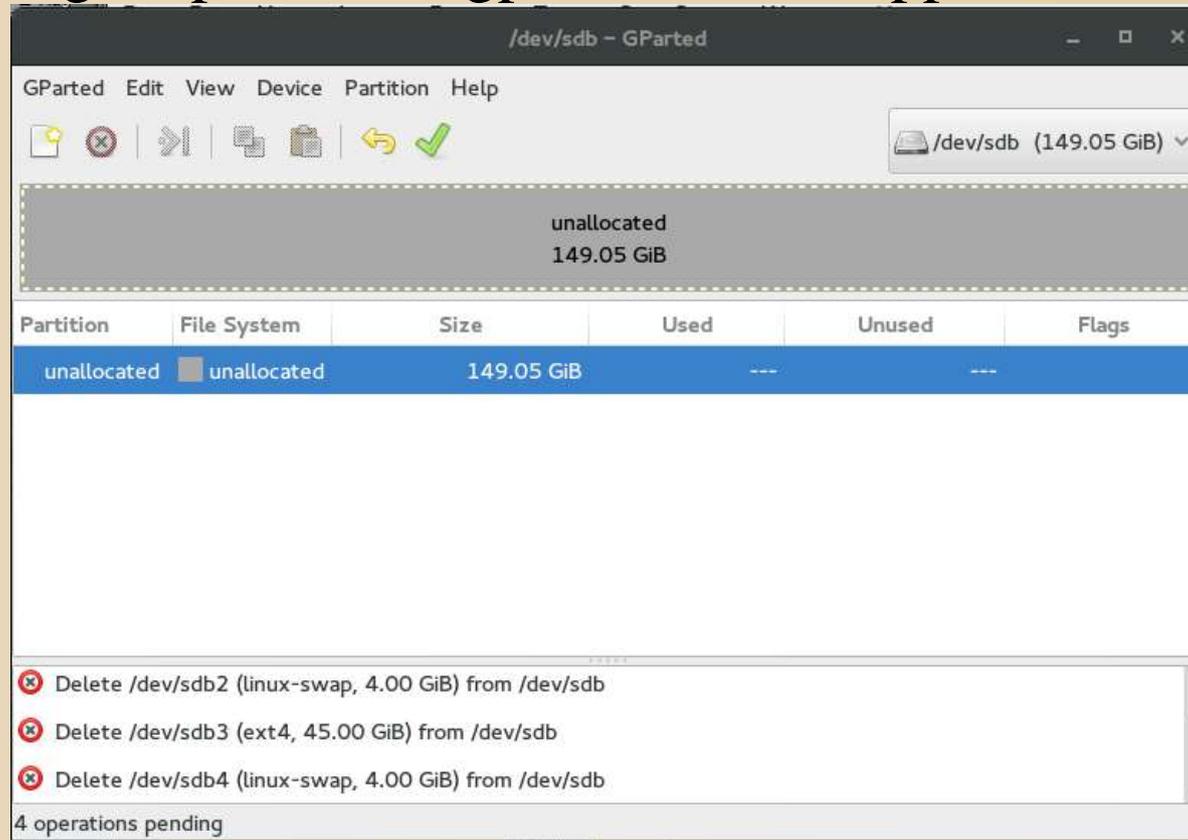
- There are times that having a portable disk to boot the Linux operating system for running diagnostics on a PC would be a good thing to do.
- Because the Intel based PCs can come in 64-bit as well as 32-bit processors, it would be nice to have both versions of Linux on a single disk in case the PC has only 32-bit processors.
- Because the USB interface is so pervasive, there are disks and disk enclosures that have a USB interface.
- There are partitioning utilities to partition a disk for Linux and swap devices.
- There are live and network installation CDs and DVDs Linux, especially for Fedora and Ubuntu.

Disk Partitioning

- Plug in the USB disk into the PC.
- Linux has several disk partitioning programs: `fdisk` and `gparted`. Run this program on the USB device: `fdisk /dev/sdb`.
- Delete all existing partitions on the USB disk.
- Create an extended partition to encompass the whole disk.
- Create a partition for the 64-bit version of Linux in the extended partition #1. This will be `/dev/sdb1`.
- Because this Linux installation is a full installation, a swap device will have to be created. This size should be about twice the size of the available RAM. Put this swap device in the extended partition #2. This will be `/dev/sdb2`.
- Create a partition for the 32-bit version of Linux in the primary partition #3. This will be `/dev/sdb3`.
- Create a swap partition in partition #4. This will be `/dev/sdb4`.
- Create a partition for the 64-bit version of Ubuntu Linux in the extended partition #4. This will be `/dev/sdb5`.
- Create a swap partition. This will be `/dev/sdb6`.
- Save and exit the partitioning program.

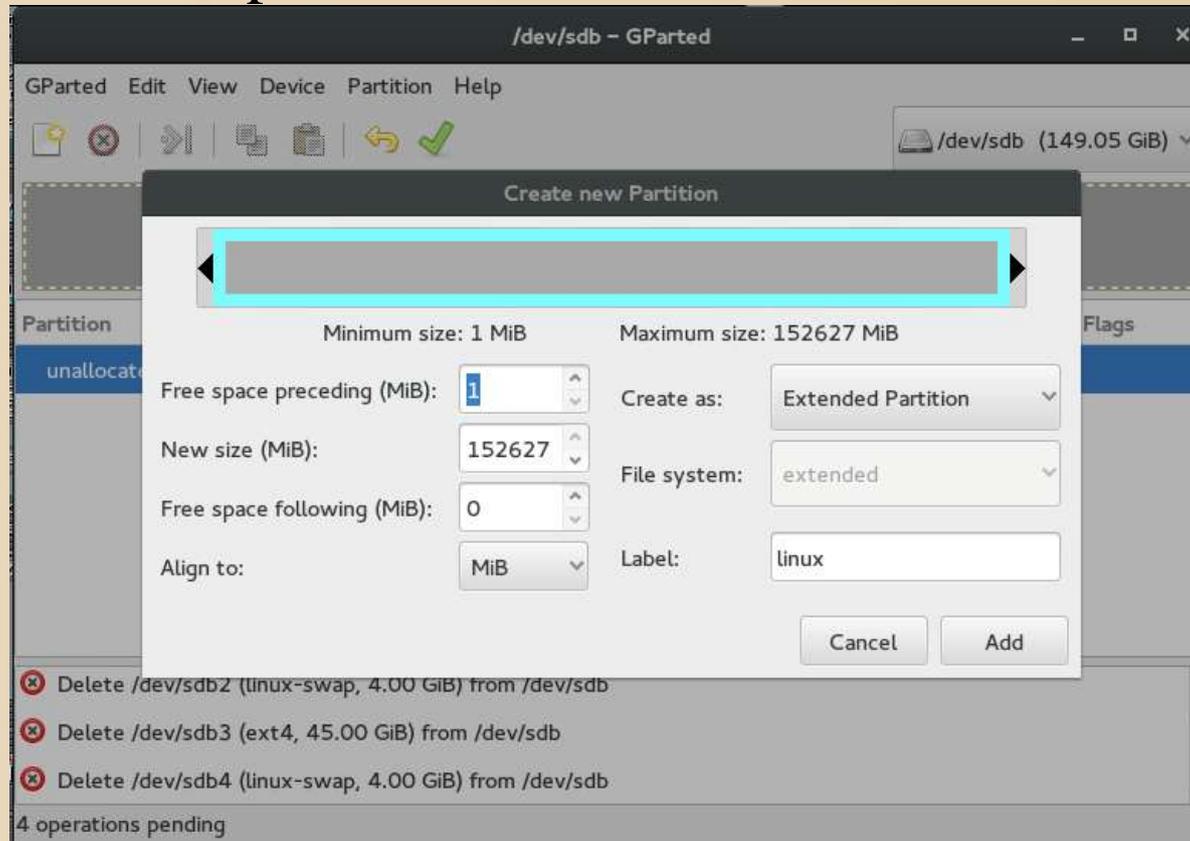
Delete All Partitions

- After deleting all partitions, gparted should appear like:



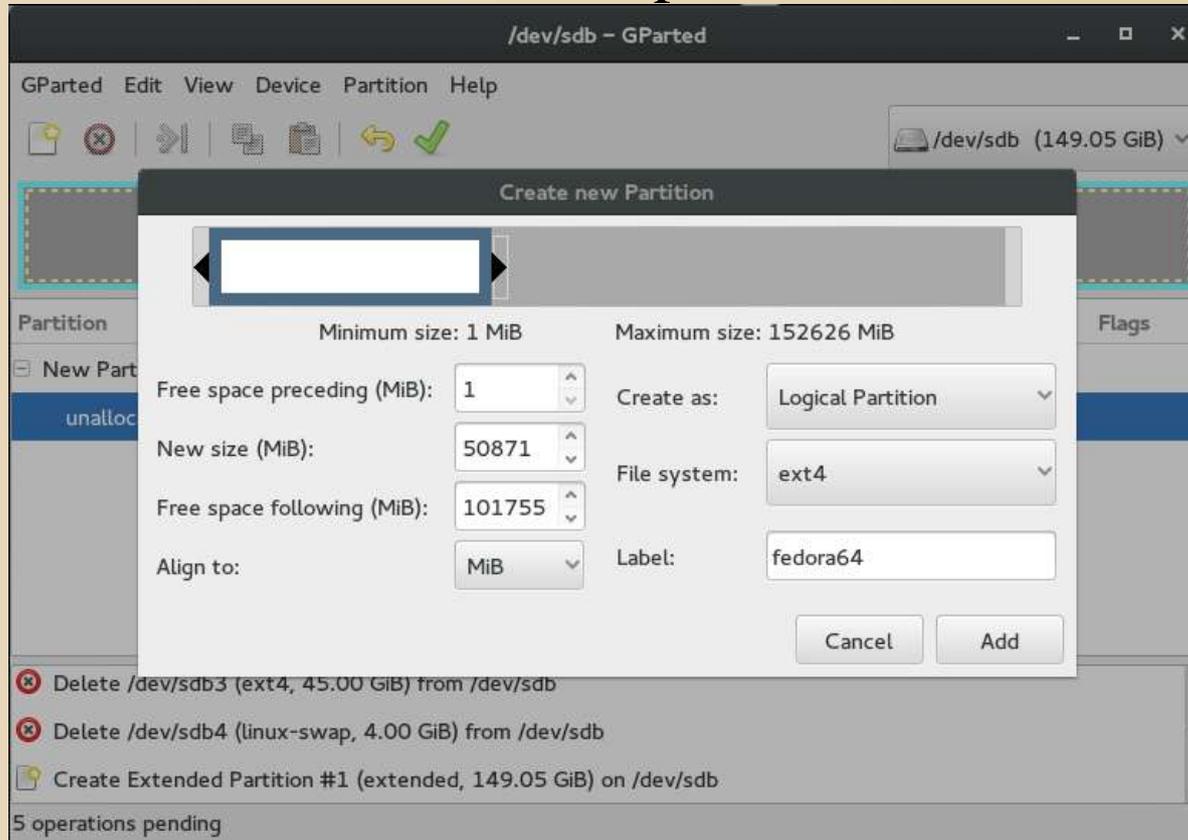
Create Extended Partition

- Create an extended partition over the whole disk



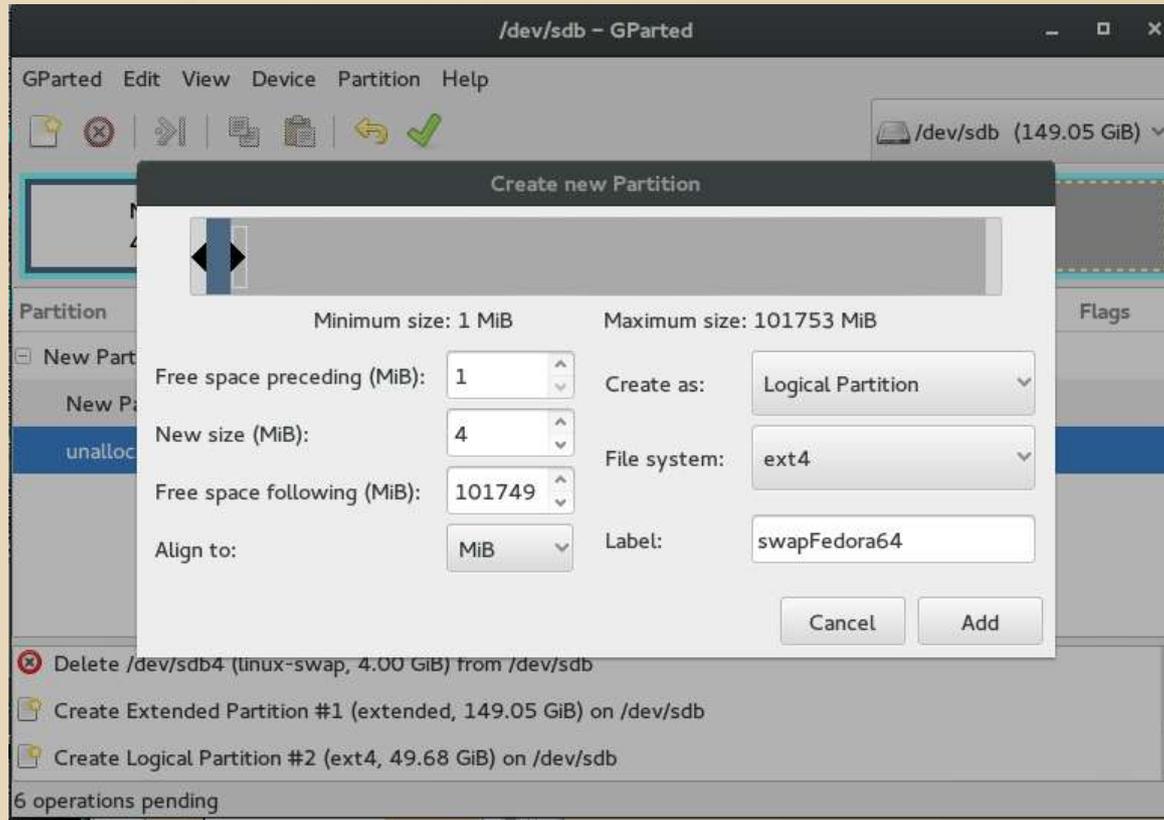
Create Fedora 64-bit Partition

- Create a partition for 64-bit Fedora partition.



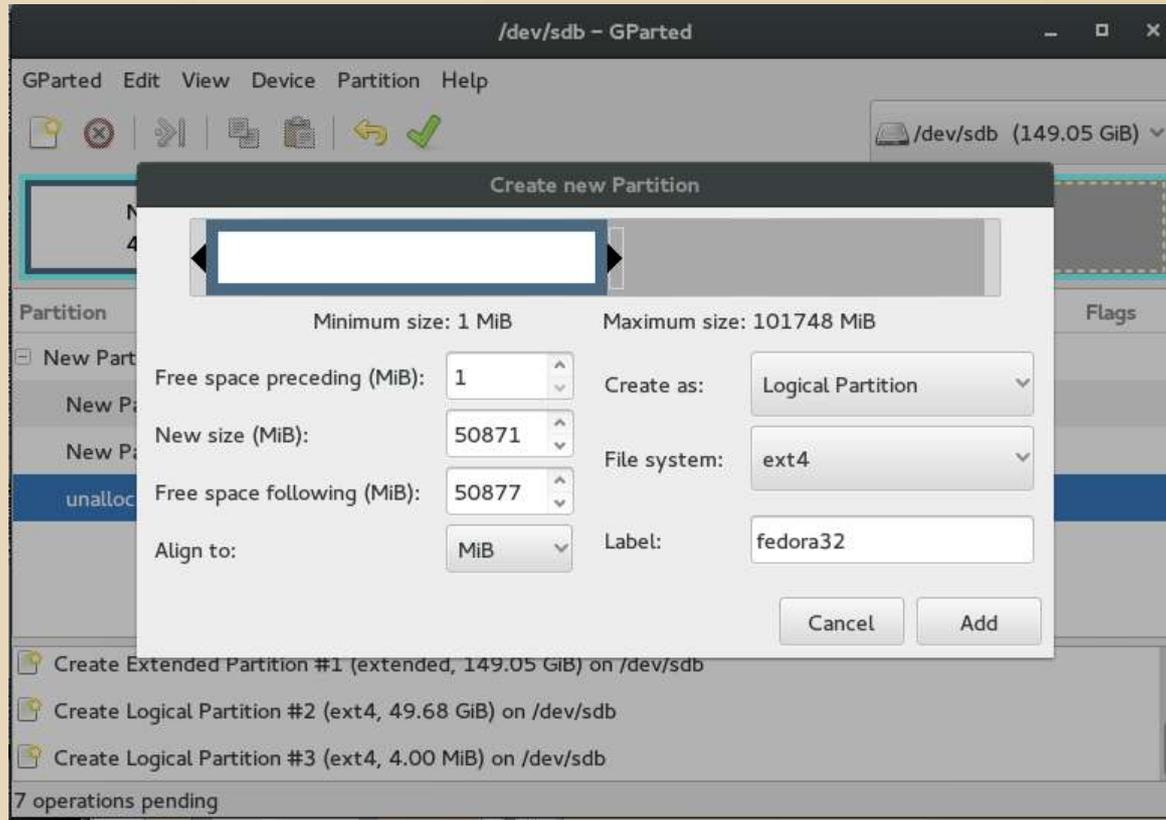
Create Swap for Fedora 64-bit Partition

- Create a swap file for the above Fedora 64-bit partition:



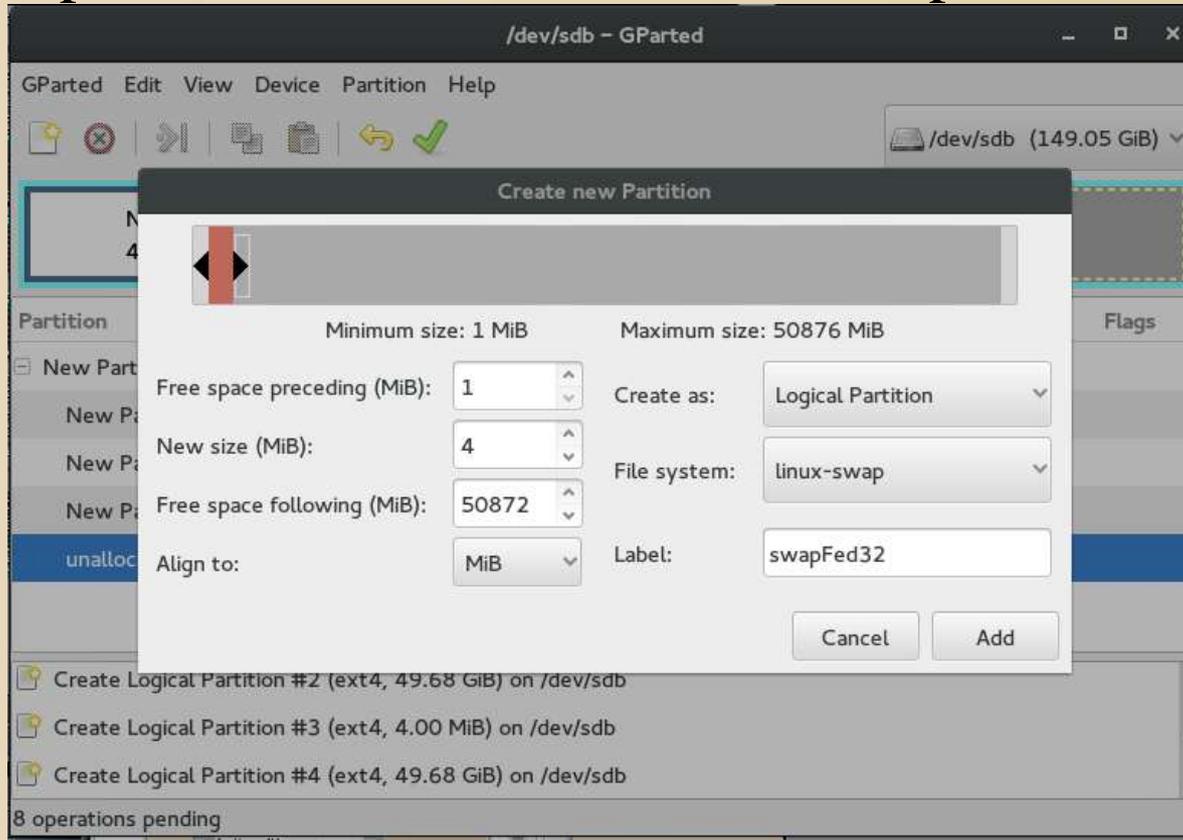
Create Fedora 32-bit Partition

- Create a partition for 32-bit Fedora partition.



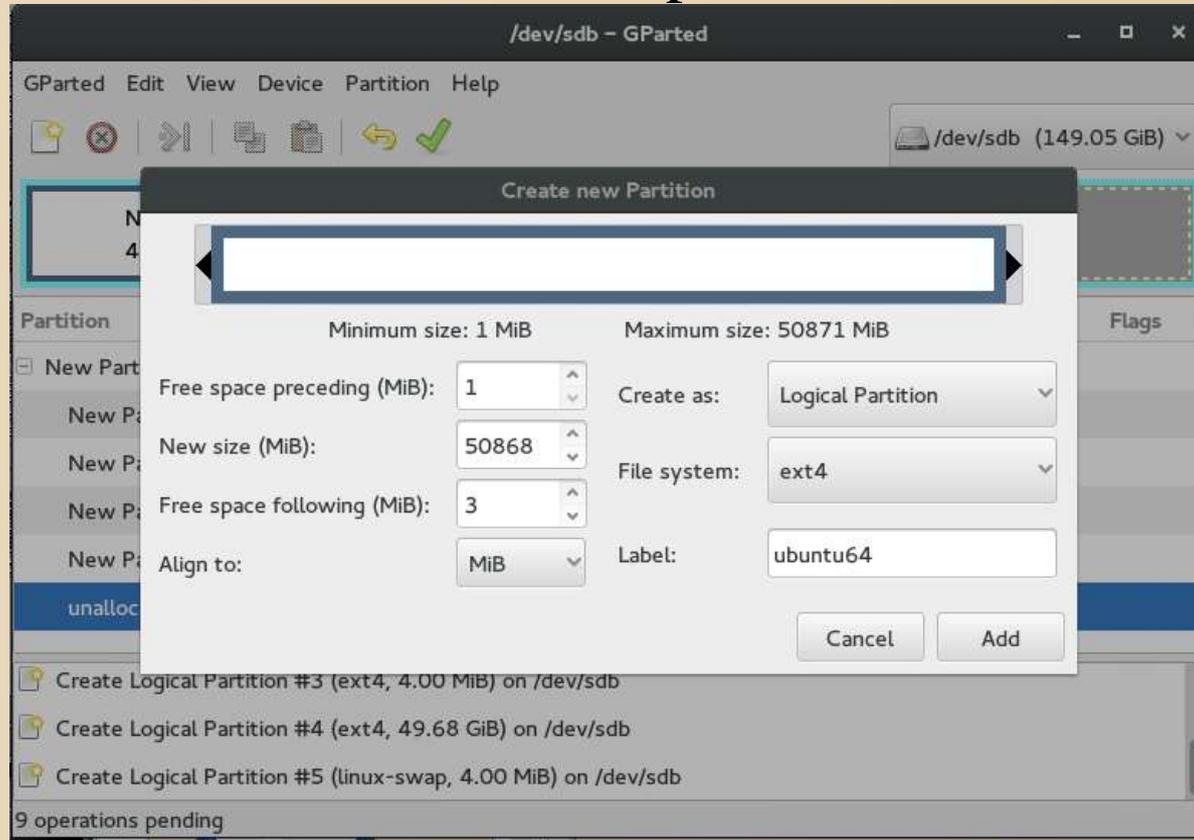
Create Swap for Fedora 32-bit Partition

- Create a swap file for the above Fedora 32-bit partition:



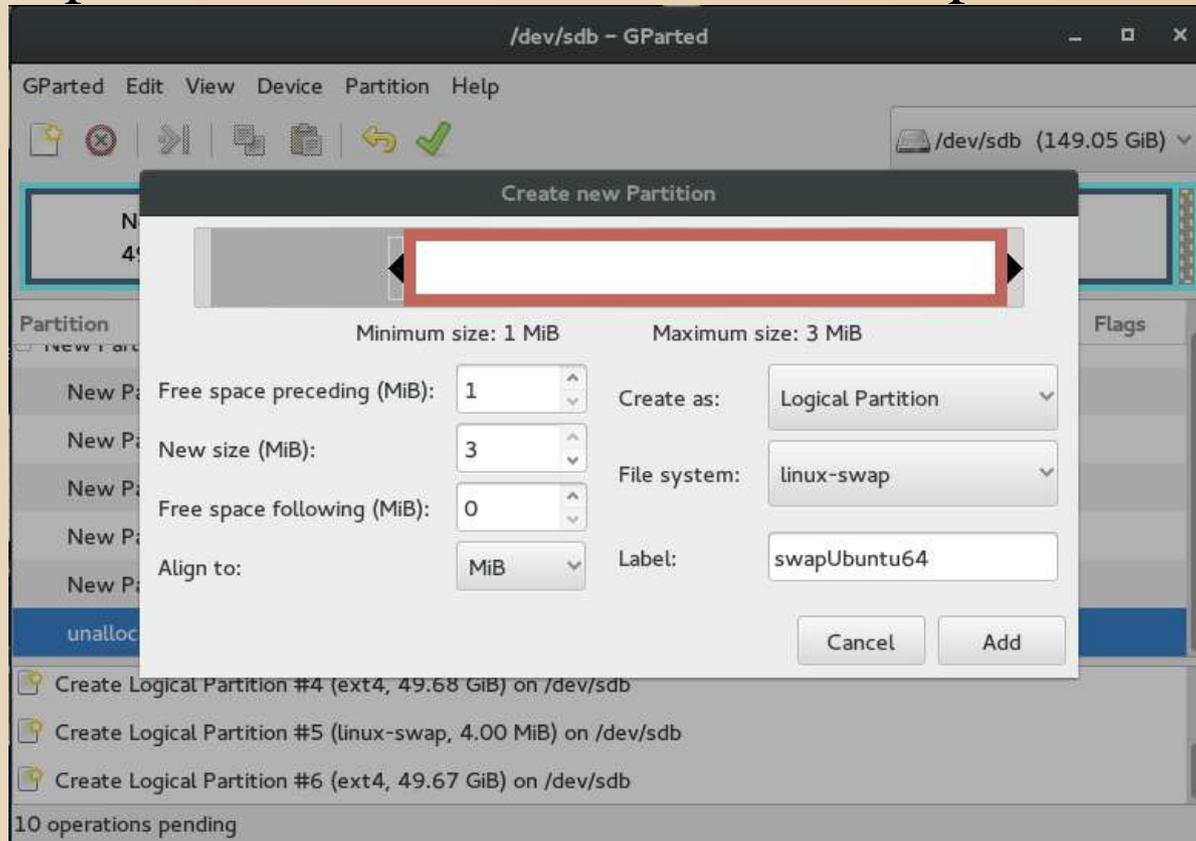
Create Ubuntu 64-bit Partition

- Create a partition for 64-bit Ubuntu partition.



Create Swap for Ubuntu 64-bit Partition

- Create a swap file for the above Ubuntu 64-bit partition:



Completed Disk Partitioning

- At the end of the disk partitioning:

Partition	File System	Mount Point	Label	Size	Used	Unused	Flags
unallocated	unallocated			2.00 MiB	---	---	
/dev/sdb1	extended			149.05 GiB	---	---	
/dev/sdb5	ext4	/run/media/jharbold/fedora64	fedora64	49.68 GiB	5.89 GiB	43.79 GiB	boot
/dev/sdb6	linux-swap			4.00 MiB	0.00 B	4.00 MiB	
/dev/sdb7	ext4	/run/media/jharbold/fedora32	fedora32	49.68 GiB	4.78 GiB	44.89 GiB	
/dev/sdb8	linux-swap			4.00 MiB	0.00 B	4.00 MiB	
/dev/sdb9	ext4	/run/media/jharbold/661a7f86-b1f4-4fce-8995-bbe331c5b630		49.67 GiB	4.74 GiB	44.94 GiB	
/dev/sdb10	linux-swap			3.00 MiB	0.00 B	3.00 MiB	

0 operations pending

Ubuntu Linux DVD OS Installation



- Goto Ubuntu home page: <http://www.ubuntu.com>
 - Get the DVD installation ISO image put it in the DVD drive.
 - Reboot the computer.
 - Push the appropriate function key to bring up the boot menu.
 - Select the DVD drive.
 - When booted, follow the instruction to install Ubuntu Linux.
 - Make sure to select network to get the latest updates.
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Fedora Linux Network OS Installation



- Goto Fedora homepage: <https://getfedora.org/>
- Get the CD network installation ISO image put it in the DVD drive.
- Reboot the computer.
- Push the appropriate function key to bring up the boot menu.
- Select the DVD drive.
- When booted, follow the instruction to install Fedora Linux.
- Make sure to select network to get the latest updates.



Updating a Linux Partition



- Because the Linux partitions installed are full installations, they can be updated with new kernels and applications.
- For Fedora partitions, bringup a terminal window.
- Login as root: `su -`
- Update the partition's software: `dnf update`
- Install new application: `dnf install Blorf!`
- Lastly, re-install GRUB2 to be able to boot new kernel: `grub2-install`

