GoDistrOS USB Base Debian Boot image file

MBR, GRUB, root & swap partitions

Updated July 20, 2020

If your version is older than Jul 20, 2020 – discard it.

(Read Entire Document & Accept Disclaimer on last page)

WARNING !!!

Improper Use of Linux "dd" command or Gparted can destroy hard drive.

Always launch gparted using command: sudo gparted /dev/sdx

x for usb device name usually /dev/sdb, /dev/sdc, etc. also /dev/hdb, etc.

The GoDistrOS USB BASE image file contains:

- Master Boot Record
- Grub Bootloader
- root partition /dev/sdx1 12GB (Fromated ext4)
- swap partition /dev/sdx2 3GB

Image file size is only 1 Megabyte (uncompressed)

Just needs a Debian 9 or 10 or Ubuntu 20.04 filesystem and 3 files uuid number changed and update grub.cfg and initramfs

Summary: Debian, MBR, Grub, 12GB ext4, 3GB Swap Base USB Stick

The GoDistrOS-USB-11GBext4-4GBswap-1MBimageV1.0.2.img image file is only 1MB in size but, it is the BASE (See **BASE** defined below) to create a Master Boot Record, Grub, 12GB ext4 and 3GB swap partitons on a USB Stick. All you then do is for example:

add the filesystem using the dd command --> /dev/sda2 → /ev/sdb1;

modify a fstab / resume and grub.cfg files

reboot, update-initramfs -u and update-grub (all explained below); and

Distribute your own Custom Distro on the USB Stick or make an image of the USB Stick using dd command and compress it using gzip. Then upload the *.img.gz file and share with the rest of the world your new Linux Distro.

BASE being defined as,

"missing the required Linux OS filesystem from ext4 root partition on /dev/sdx1".

The BASE image does NOT include the required LinuxOS filesystem in its (root) partition. You must add your own complete customized Debian System. To use another filesystem type, simply format sdx1 with your type of filesystem.

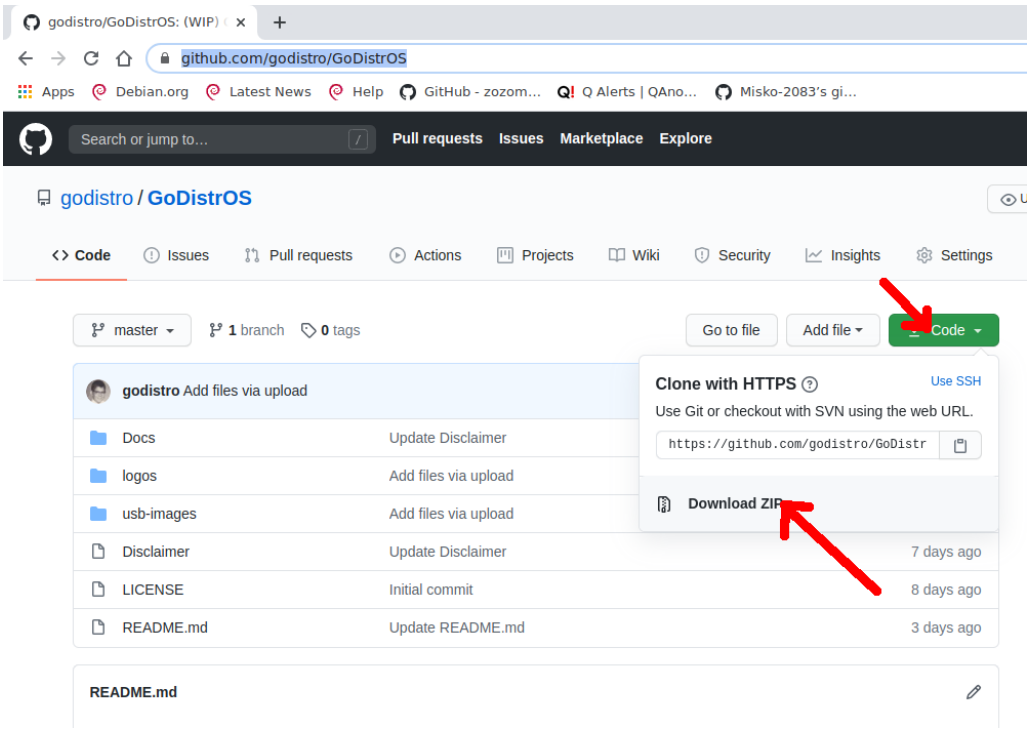
Optonally you can manually create your own USB BASE Stick using Gparted & Grub2. See Appendix A for this procedure.

Using the pre-build GoDistrOS BASE Boot image file:

Obtain the GoDistrOS Base USB Stick image - Download from github.com

1. Open your browser go to this https:// link below:

   https://github.com/godistro/GoDistrOS

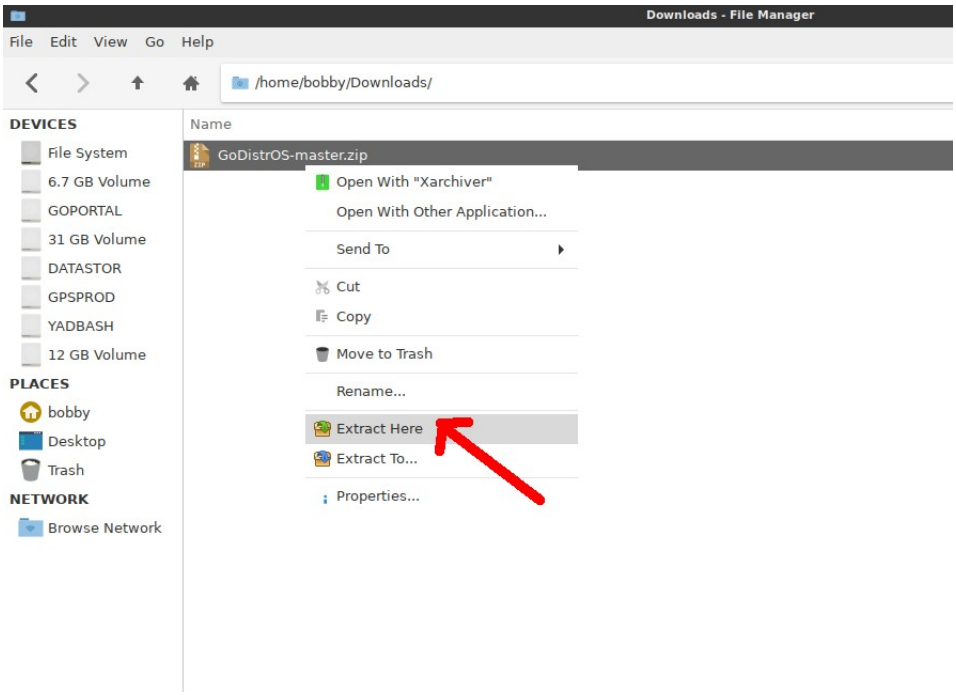
2. 

Click "Code" --then-click-> "Download ZIP"

Extract the compressed file:

Change to folder that contains GoDistrOS downloaded file --> Open Terminal:

Right click → Click "Extract Here"



If using teminal: Use cd /path/ then unzip GoDistrOS-master.zip file:

```
sudo unzip ./GoDistrOS-master.zip
```

Files will be unzipped to a directory (folder) with the name of:

GoDistrOS-master

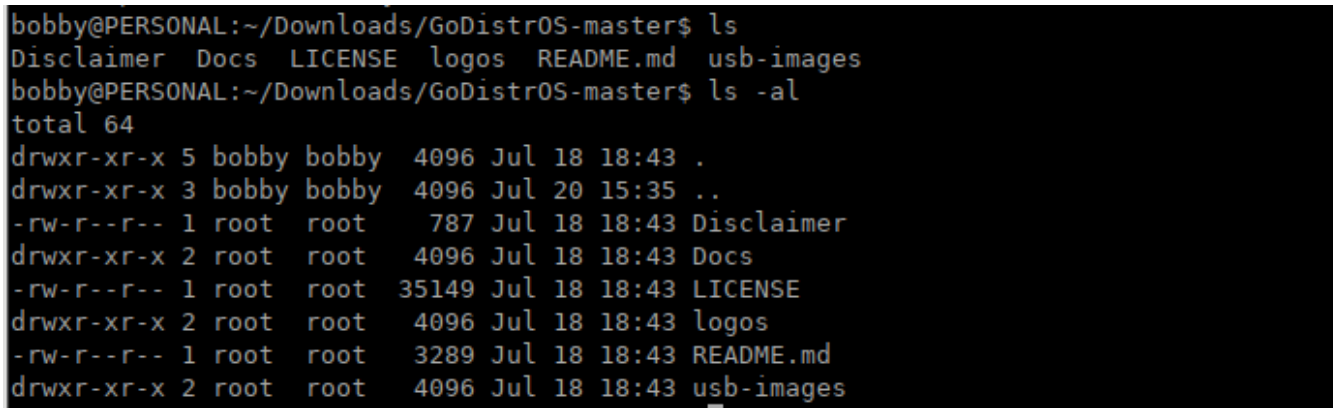
Open Terminal:

(Continued on next page)

Remove root ownership of unzipped file (if necessary:)

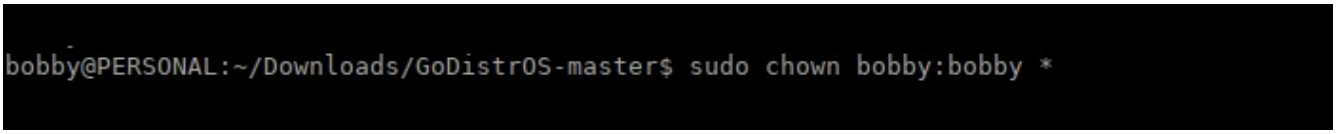
1. Find your user:group naming.

A. Open Terminal → ls -al → If root root is shown. Proceed to Step B. elow

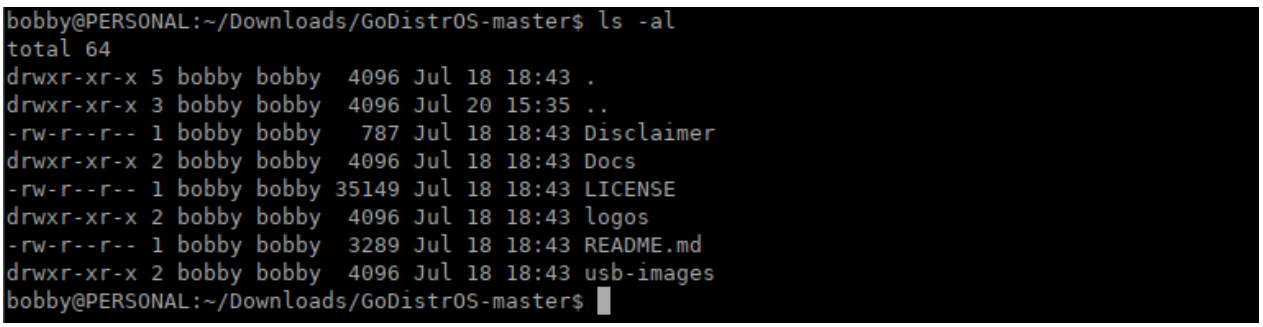


B. In above image, root root is owner:group permission for GoDistrOS file. This does happen on some systemes and we need to correct this to your login name (owner) and the group you are in (usually same as your login name). In above example, mine is bobby:bobby. Run below command in Terminal to change to your correct owner:group (Replace owner:group with your correct owner:group name.

sudo chown owner:group *****



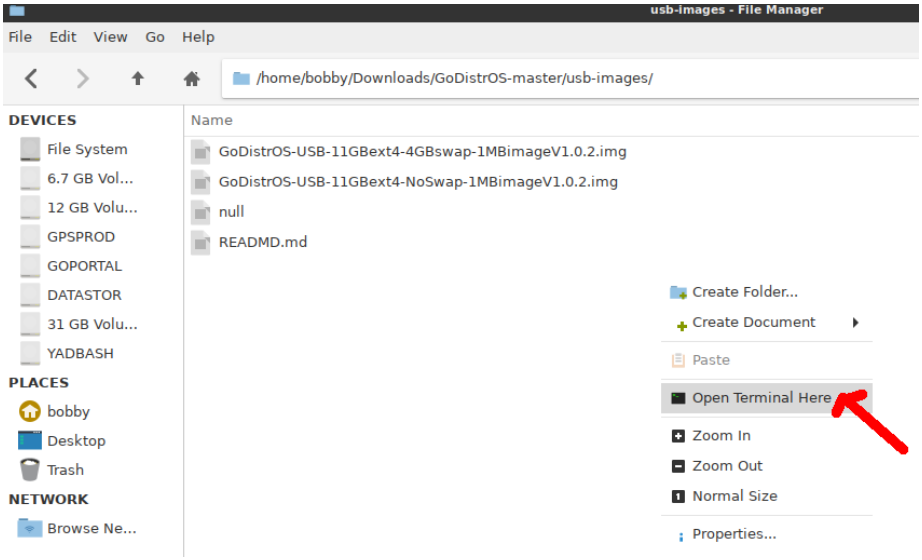
sudo chown user:group ./BaseUsbMbrGrubExt4Swap.img



File is now correct owner:group in my case bobby:bobby

Prepare new USB Stick for GoDistrOS BASE USB image install

1. If using Filemanager - Open Terminal from GoDistrOS folder:



2. Open Gparted accessing *USB Stick:*

sudo gparted /dev/sdx

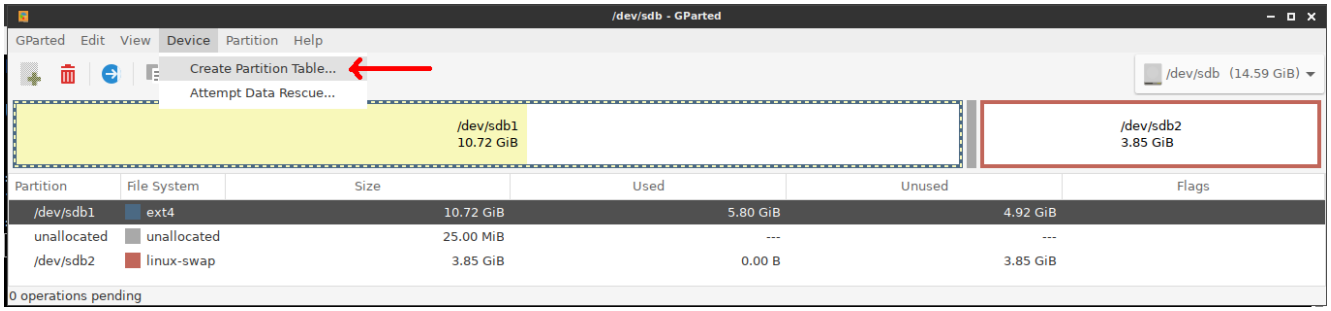
enter your sudo password & press the Enter Key

(continued on next page)

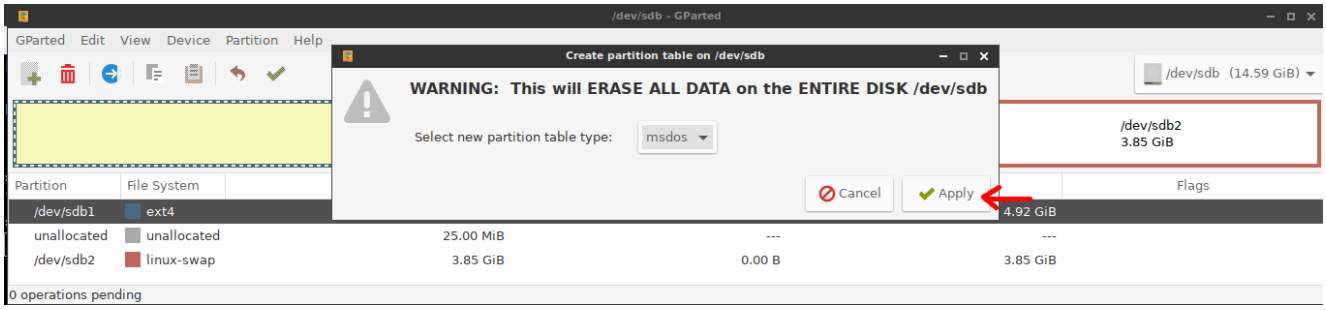
Use Gparted to Prepare USB Stick for GoDistrOS Base Image

1. Erase USB Stick Partition information:

    A. Click “Create Partition Table”



    B. Click “Apply”



USB Stick is now setup for to accept your filesystem copy of image.

Exit Gparted

Write GoDistrOS BASE image to USB Stick using dd command

1. Write the debian-usb-boot-grub-ext4-swap.img file to USB Stick - 16GB+

sudo dd if=./GoDistrOS-USB-11GBext4-4GBswap-1MBimageV1.0.2.img of=/dev/sdb bs=4M status=progress && sync

```
bobby@PERSONAL:~/Downloads/GoDistrOS-master/usb-images$ sudo dd if=./GoDistrOS-USB-11GBext4-4GBswap-1MBimageV1.0.2.img of=/dev/sdb bs=4M status=p
rogress && sync
0+1 records in
0+1 records out
1048576 bytes (1.0 MB, 1.0 MiB) copied, 0.0631008 s, 16.6 MB/s
bobby@PERSONAL:~/Downloads/GoDistrOS-master/usb-images$
```

2. Use Gparted to format the ext4 11GB parttion so, system can tell its valid.

    sudo gparted /dev/sdx

    --> Select ext4 Partiton --> Right Click --> Format to --> ext4 --> Click Apply

    --> Click Close --> Exit Gparted.

NOTE: Your new GoDistrOS BASE USB Stick is now ready for a Debian filesystem to be imaged using dd to the /dev/sdx1 partition on the USB Stick.

There are a few options how to make an image of your Custom Distro Build and how to directly transfer your filesystem to the GoDistrOS BASE USB Stick root parttion /dev/sdx1. In either case, we need to know the total space used on the source (Custom Distro) partition.

1. Using Gparted to tell us how much space is used by source partition.

- Open Gparted;
- Select Source Partition
- Click Resize/Move Icon
- Click and hold arrow right of bar and drag it all the way left. The new size listed is the Megabytes of used space. We will add 100 to this number.
- We really don't want to resize this partition, so click "Cancel"
- Exit Gparted.

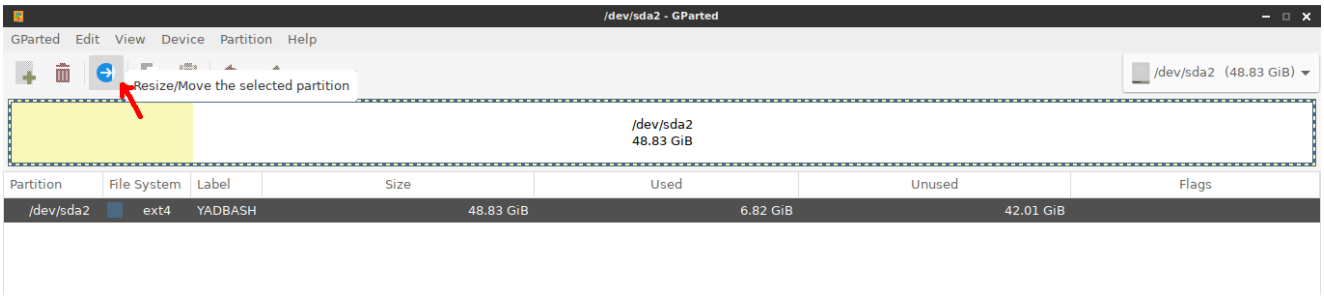
Now that the used space in MB is known for the source partition, you can:

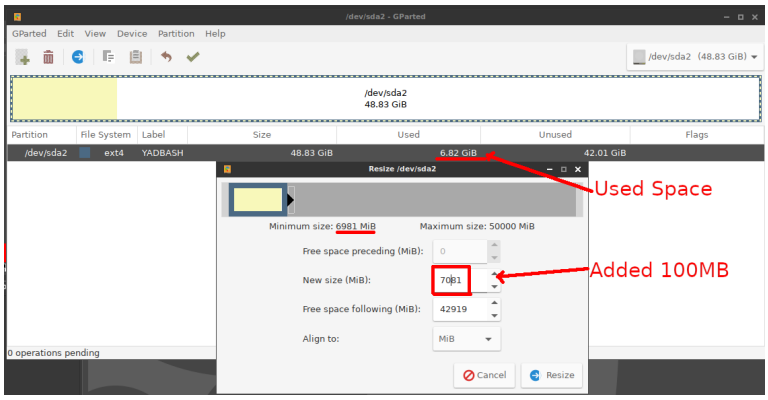
- use this MB number in a dd command to create of your Custom Distro Build; or
- you can directly transfer your Custom Distro Build to the root partition of the GoDistrOS USB Stick.

Use Gparted to Shrink partion of your Custom Distro Build:

In termial open Gparted: sudo gparted /dev/sda2

Select ext4 partition & Click Resize/Move Icon





Write Custom Distro image file to GoDistrOS USB root partition

Use dd to write Custom Distro image to GoDistrOS BASE USB root partition /dev/sdx1

```
sudo dd if=/dev/sda2 of=./my-distro.img bs=4M count=1775 status=progres && sync
```

In the above Gparted screen we see the hard drive /dev/sda2 partition has about 6.9GB used.

I drag arrow on right all the way left and add 100 (MB) to the New size. The use space an 100 MB additional is close to 7100. We can use this size number to truncate your Custom Distro Build partition.

7.1GB is 7100MB: 7100 (divided by) 4 (bs=4M) = 1775

```
sudo if=/dev/sda2 of=./my-distro.img bs=4M count=1775 status=progress && sync
```

Most accurate way to get all data plus 1000 block sectors (always extra)

- Use Gparted and shrink your Custom Distro Partition as much as possible
- Run command: `df -m --output=used /dev/sda9`

```
Used
4649
```

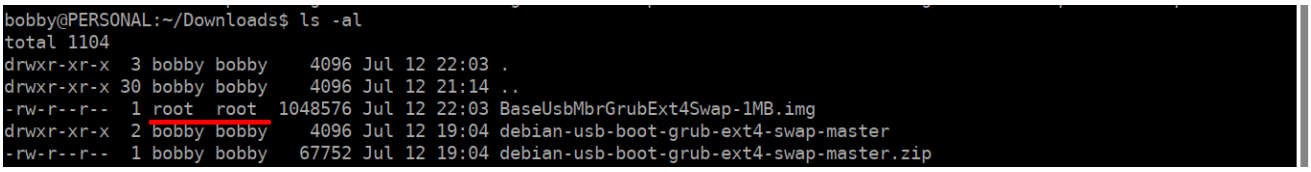
  This command shows us the total block sectors in Megabytes for /dev/sda9.

  We add 100 (MB) = 4749 and run this dd command to create image.

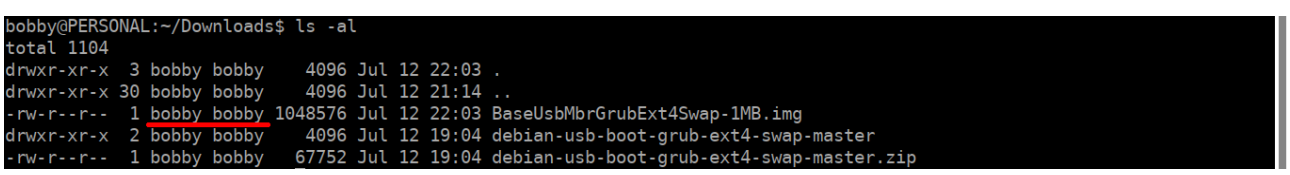
```
sudo dd if=/dev/sda9 of=./my-distro.img bs=1M count=4749 status=progress && sync
```

The Custom Distro image has been written to the my-distro.img file. (Size=4.6GB)

When you do this, root:root is set as the user:group setting so we need to make this your user:group



So run this command: `sudo chown bobby:bobby ./my-distro.img`



Write Custom Distro image file to GoDistrOS USB root partition

Use dd to write Custom Distro image to GoDistrOS BASE USB root partition /dev/sdx1 *

```
sudo dd if=./my-distro.img of=/dev/sdx1 bs=4M status=progres && sync
```

* Note: "x" in/dev/sdx1 is special to your Debian system. Use your x in command

Compress your Custom Distro image using gzip compression

```
bobby@PERSONAL:~/Downloads$ sudo gzip -k -9 ./my-distro.img
```

```
sudo gzip -k -9 ./my-distro.img
```

```
bobby@PERSONAL:~/Downloads$ ls -al
-rw-r--r--  1 bobby bobby 4979687424 Jul 13 14:08 my-distro.img
-rw-r--r--  1 bobby bobby 1895437669 Jul 13 14:08 my-distro.img.gz
```

```
my-distro.img        Original Size: 4.6GB
my-distro.img.gz     Compressed Size: 1.8GB
```

How to mount GoDistrOS USB Stick to be able to edit 3 configuration files (Pre-Boot)

```
bobby@PERSONAL:~$ sudo fdisk -l
```

When you execute the above command, you will get the output similar to below. you will find the USB device probably at the end of the output labeled as sdb, sdc or sdd, etc.. Note down the device name and the file system. In our case, it is /dev/sdb

```
Disk /dev/sdb: 14.6 GiB, 15664676864 bytes, 30595072 sectors
Disk model: Cruzer Glide
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: 0xc3aa4a0b

Device     Boot    Start      End  Sectors  Size Id Type
/dev/sdb1           2048 24240127 24238080 11.6G 83 Linux
/dev/sdb2       24250368 30595071  6344704    3G 82 Linux swap / Solaris
```

So we will mount root /dev/sdb1

```
bobby@PERSONAL:~$ sudo mkdir /media/usb
bobby@PERSONAL:~$
bobby@PERSONAL:~$ sudo mount /dev/sdb1 /media/usb
bobby@PERSONAL:~$
bobby@PERSONAL:~$ cd /media/usb
bobby@PERSONAL:/media/usb$ ls
bin   etc         initrd.img.old  lib64       media  proc  sbin
boot  home        lib             libx32      mnt    root  srv
dev   initrd.img  lib32           lost+found  opt    run   sys
bobby@PERSONAL:/media/usb$
```

Section 5. Preboot configuration of GoDistrOS BASE USB Stick

1. Update uidd numbers in 3 files: resume / fstab / grub.cfg

A. Insert correct uuid numbers for your new GoDsitro USB Stick.

```
sudo blkid /dev/sdx1 && sudo blkid /dev/sdx2
```

```
/dev/sdb1: UUID="37ab1ca9-78a7-4d21-b2f9-65fe9bab34eb" TYPE="ext4" PARTUUID="c3aa4a0b-01"
/dev/sdb2: UUID="066dbf55-036b-47c1-8418-44f518d5014e" TYPE="swap" PARTUUID="c3aa4a0b-02"
```

B. /dev/sdb1 root uuid ->/etc/initramfs-tools/conf.d/resume & /etc/fstab

```
RESUME=UUID=37ab1ca9-78a7-4d21-b2f9-65fe9bab34eb
```

C. /dev/sdb1 root & /dev/sdb2 swap partiton uuid -> /etc/fstab file

```
# /etc/fstab: static file system information.
#
# <file system> <mount point>   <type>  <options>       <dump>  <pass>

# root /dev/sdb1
UUID=37ab1ca9-78a7-4d21-b2f9-65fe9bab34eb       /       ext4    errors=remount-ro,defaults
# swap /dev/sdb2
UUID=066dbf55-036b-47c1-8418-44f518d5014e       none    swap    sw      0       0
# cdrom
/dev/cdrom      /media/cdrom0   udf,iso9660     user,noauto,exec,utf8   0       0
```

To edit files: use cursor keys / backspace / copy & paste / CTRL+o / CTRL+x

```
sudo nano /media/usb/etc/initramfs-tools/conf.d/resume
```

```
sudo nano /media/usb/etc/fstab
```

/media/usb is the mout to /dev/sdb1 (created on previous page)

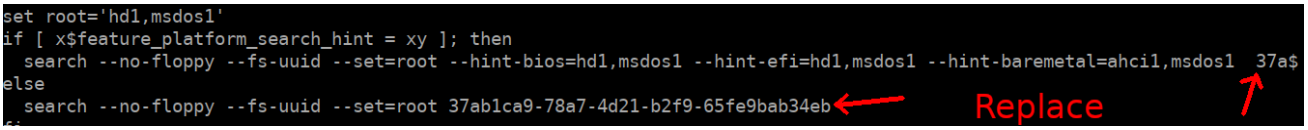
```
bobby@PERSONAL:~$ sudo blkid /dev/sdb1
/dev/sdb1: UUID="37ab1ca9-78a7-4d21-b2f9-65fe9bab34eb" TYPE="ext4" PARTUUID="c3aa4a0b-01"
```

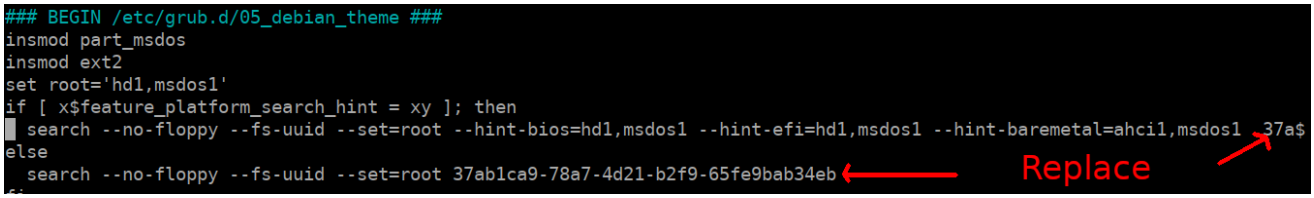
D. Insert correct uuid number for /dev/sdb1 /boot/grub/grub.cfg

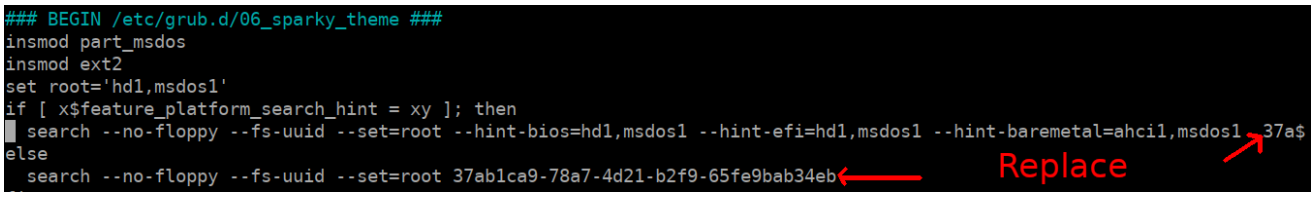
Open Terminal --> `sudo nano /media/usb/boot/grub/grub.cfg`

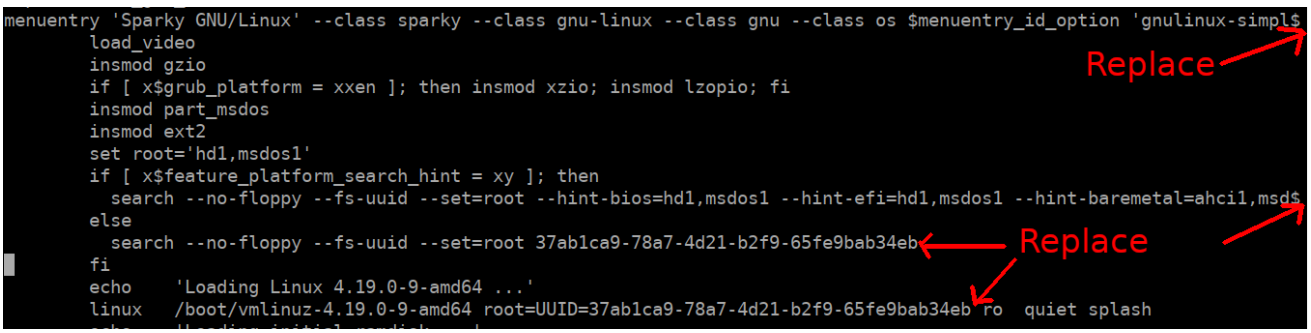
Insert correct root uuid number in the 1st "menuentry" section and above this section but, any sectoin below 1st menuentry section.

If using nano of vi editor: use cursor keys / backspace / Copy & Paste. To save in nano: CTRL+o & exit nano: CTRL+x









Disable 30_os-prober of Grub2 bootloader.

This will prevent hard drive partitions being listed on USB Stick

Open Termianl --> `sudo chmod -x /etc/grud.d/30_os-prober`

Reboot Computer

Boot from USB Stick

Login as you normally do on your custom distro & Open Terminal

```
sudo update-initramfs -u

sudo update grub (Since)
```

DONE !

Distribute your Custom Distro USB to friends and family or use gzip to reduce the size of your my-distro.img

Note: Do not distribute custom logos or images of your base LinuxOS and include the required License files for all non-free programs. Do not distribute Google-Chrome --> Use Chromium. See terms of "ALL" required licenses as well. If you choose to a Respin of Sparkylinux, you are required to include this statement where is obvious:

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This is an experimental process for installing a modified Debian based LinuxOS build on to a USB Stick. As such, you must not use this process unless you accept 100% responsiblity for your actions and any and all possible consequences that could result known and unknown now or in the future. You must agree to release author, Robert J. Cooper, Nevada, USA from any and all responsibilty for your use of any part of this process. This Disclaimer and document is subject to change without any prior notice of anykind. Any possible claims to be arbitrated under the laws of Nevada, USA. You must read and accept terms of GPL 3.0 License
License Granted: GPL 3.0 --> https://www.gnu.org/licenses/gpl-3.0.en.html

Appendix A

Creating a BASE USB Stick using Gparted & Grub

1. Open Terminal

2. Install Gparted if necessary
   A. Connect to Internet
   B. Open Terminal & Run this command:
   sudo apt update
   sudo apt-get install gparted

2. Start Gparted from Terminal: sudo gparted /dev/sdx
   “x” is correct letter assigned to your USB Stick

3. Using Gparted to create BASE USB Stick (Example is for 16GB USB Stick)

   A. Click “Device” > “Create Partition Table” > “Apply”
   B. Click “Partition” > “New” > New Size= 12000 Type= ext4 > “Apply”
   > Click “Close” (when Gparted done with task)
   C. Click “Partition” > “New” > Keep Size Shown Type= linux-swap > “Apply”
   > Click “Close” (when Gparted done with task)

4. Install Grub2 Bootloader to MBR of USB Stick (Example used is /dev/sdb)

   A. Open Terminal: sudo grub-install /dev/sdb

   B. Unmount /dev/sdb1

   C. Remove USB Stick from computer

   D. Insert USB Stick in computer

   E. DONE !

Now use dd command to transfer img image or hard drive partition filesystem to USB Stick /dev/sdx1

"x" in sdx1 refers to the correct letter assigned to your USB Stick.

   sudo dd if=/dev/sda1 of=/dev/sdx1 bs=4M status=progresss && sync

         OR

   sudo dd if=./my-hda1-image.img of=/dev/sdx1 bs=4M status=progress && sync

Go to Section 5. "Preboot configuration of GoDistrOS BASE USB Stick" to finish your creating your Custom GoDistrOS.