Adding Solus and other punk linux boot sequence in GRUB (UEFI only)

grub   uefi   tutorial

Alpha   *Apr '17*

So we all have been there, a linux distro we get interested in but they are just too proud to use the best software available in their disposal and makes thing complicated.

Though manjaro is my primary linux, I am fairly interested in Solus about speed, beauty and development. I recently partitioned my drive to GPT and thought i can spare some space for other distro testing, as now i don't have 4 partitions limitation.

So, my first test drive is Solus and boy should I have chosen something else? For legacy BIOS they use GRUB but for UEFI, mysteriously they use "**goofiboot**".

The problem is solus bootloader does not have the ability to include manjaro and in manjaro GRUB detects solus but can't include "goofiboot" path in the boot sequence. Internet won't be much help because people don't bother with it much only one article helped. Let's get started:

…

Disclaimer: This tutorial is only for who has past experience with GRUB boot sequence editing and it may cause your system disaster if you typo and mess in any step. Besides, it can kill your cat!!

…

Step 1:
The first step is to find out where Solus boot path lies. It is in, so change the directory to **/boot/efi/EFI**. Now list command can help,

```
 ls
 Boot  com.solus-project  goofiboot  Manjaro  Microsoft
```

The problem is **com.solus-project** does not contain the boot sequence but you may have guessed it **goofiboot** directory does!
Enter the directory and voila!

```
/boot/efi/EFI/goofiboot/goofibootx64.efi
```

Step 2:
This is easy, just find out the UUID of the EFI partition. You can find it by:

```
lsblk -f
```

Step 3:
Now, editing grub file do not work so we need to create custom.cfg file and make it executable:

```
sudo touch /boot/grub/custom.cfg
```

Then at the end of the file add the following commands but you need to provide your output at the **STAR** marked sectors:

```
#!/bin/sh
exec tail -n +3 $0
# This file provides an easy way to add custom menu entries.  Simply type th
# menu entries you want to add after this comment.  Be careful not to change
# the 'exec tail' line above.
    menuentry 'Solus***' --class Solus --class gnulinux $menuentry_id_option
        savedefault
        insmod part_gpt
```

```
            insmod fat
            set root='hd0,gpt2***'
            if [ x$feature_platform_search_hint = xy ]; then
              search --no-floppy --fs-uuid --set=root --hint-bios=hd0,gpt2 --hin
            else
              search --no-floppy --fs-uuid --set=root 422A-74D4***
            fi
            chainloader /EFI/goofiboot/goofibootx64.efi
          }
```

- At first star mark use any heading you want for that linux.

- In second star mark write the gpt drive number you have your EFI files in. In my case it is gpt2.

- In third star mark replace the 422A-74D4*** with the EFI partition UUID number you got from step 2.

- Follow same procedure for every other gpt and UUID star mark in the code.

Step 4:
You can just execute thus command but for record this will make the configurable executing permission.

`sudo chmod a+x /boot/grub/custom.cfg`

Finally, `sudo update-grub`

Now, reboot the system you should see your punk linux boot sequence in manjaro GRUB.

References:

1. **http://askubuntu.com/questions/436519/boot-efi-files-from-grub2**

2. **https://wiki.archlinux.org/index.php/GRUB**

3. **https://wiki.archlinux.org/index.php/fstab**

Contributors:
@gohlip & **@kainonergon**

> ✅ Solved by **gohlip** in **post #33**
>
> Looks like we're here as absolution for our sins, kainonergon. Not too far off as an idea. Cheers. Take care everybody.

🔗 **No Bootable Device after install on formatted HDD**

🔗 **New grub entry**

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kainonergon Aficionado	Apr '17

Better use /default/grub.d/40_custom for manual boot entry.

Alpha	Apr '17

Solus has grub installed but it won't let me generate or update grub configuration.

Alpha	Apr '17

is it in the grub.cfg file? i am using both linux without any problem. is there any benefit in it?

gohlip   Apr '17

Thanks for your tutorial.
Need some clarifications.
I take it the first post is about including solus entry in Manjaro grub.
I also take it Manjaro is also booted in uefi. else we'd be mixing boots which will really mess things up.

Q1. Won't Manjaro 'sudo update-grub' automatically make a Solus entry in its grub.cfg?
Of course, if Manjaro is booted in bios-legacy, it cannot include Solus and a manual entry is required, but I assume Manjaro is also booted in uefi, isn't it?
ps: kainonergon suggestion to include into custom rather than editing (manjaro) grub.cfg is because any update-grub will wipe out this entry, (if update-grub cannot include Solus, that is).

Q2. This 'goofiboot' appears to be like the deprecated 'gummiboot' which is replaced by bootctl (systemd boot).
If so, the mechanism is is such that we can also include Manjaro entry by adding (have to be manually done for gummiboot, refind, & bootctl) as manjaro.conf in the 'entries' directory of Solus /boot/loader /entries/xxxx.conf and additionally copy over Manjaro kernel (vmlinuz and initramfs) to Solus $esp. Have you tried this (booting Manjaro from Solus goofiboot) to see if this works?

Q3. You can set bios 'bootorder' to set either Manjaro or Solus as default boot (you can also use efibootmgr to do this).
What is the default bootorder in your case? Right now, I'm assuming (from your post) you're using Manjaro. If so, do you see any benefit in using Solus goofiboot.

Thanks again for sharing and hope to learn more from you.
Cheers.

Alpha   Apr '17

Thanks for asking and i will try to explain from my experience.

Q1. yes, updating grub shows the result but then in boot Solus in not listed as boot option. I will try to use custom and publish the result.

Q2. I didn't know this. Solus don't have much instrcution regarding this but i Installed solus after manajaro so it should include it. I will try ti custom.

Q3. In UEFI i have manjaro, solus and windows boot option. Before the mentioned solution i needed to enter boot and switch loader for toggling manjaro and Solus.

I will try your recommended methods and hopefully post result soon.

Alpha   Apr '17

@philm
Updating grub shows result but not in the boot. Is my workaround the solution or there is something better?

```
sudo update-grub
Generating grub configuration file ...
Found background: /usr/share/grub/background.png
Found Intel Microcode image
Found linux image: /boot/vmlinuz-4.9-x86_64
Found initrd image: /boot/initramfs-4.9-x86_64.img
Found initrd fallback image: /boot/initramfs-4.9-x86_64-fallback.img
Found Windows Boot Manager on /dev/sda2@/EFI/Microsoft/Boot/bootmgfw.efi
```

```
Found Solus (2017.01.01.0) on /dev/sda9
Found memtest86+ image: /boot/memtest86+/memtest.bin
done
```

gohlip　　　　　　　　　　　　　　　　　　　　　　　　　**Apr '17**

There are several vays. I normally don't do this chainload way, if I have to (usually don't have to), I use
multiboot or configfile. Chainload is my least favourable way of booting.
Anyway here's a typical entry

```
menuentry "Chainload" --class recovery{
        insmod chain
        insmod fat
        search --no-floppy --label --set=root LED
        chainloader /EFI/ubuntu/grubx64.efi
}
```

or chainloader /EFI/opensuse/grubx64.efi
or chainloader /EFI/mageia/grubx64.efi
or...

You may have gotten the path wrong.
/efi/EFI/ looks wrong. Check out the path.
.
.
.
.
.

Oh, you did not answer my question above.

> gohlip:
>
> Found Solus (2017.01.01.0) on /dev/sda9
>
> .
> .
> .
>
> This entry won't boot?
> Please show the Solus entry itself in grub.cfg.
> [edit] - together with contents of Solus /boot (need kernel and initrd details)

Would appreciate an answer.

Alpha   Apr '17

sorry, gohlip for late reply. there is simply no data of solus in the grub.cfg. I had to check multiple times for the verification.
I my entry lets me boot solus but after grub update my manual data entry goes away. I may have made mistake in path. Will fix it.

Alpha   Apr '17

No, the path is right. Solus doesn't use grub. it uses goofiboot.

---

gohlip   Apr '17

> Alpha:
>
> there is simply no data of solus in the grub.cfg.

Okay, if you find it, let us know.
Normally, any OS detected by grub will boot, even if that OS does not have grub.
Can't say that for any other bootloader.

If you need help with the path, you'll have to show the contents of /boot down to the solus.efi file. Look at the $esp partition only, no need to look elsewhere. Oh... the search line is for that fat32 partition.
You can use UUID instead, of course, if you do not have labels. I always label all my partitions.

---

gohlip   Apr '17

Try use UUID, do not use /dev/sdxy

Alpha   Apr '17

This is my modified entry:

```
### BEGIN /etc/grub.d/40_custom ###
menuentry "Solus" --class recovery{
        insmod part_gpt
        insmod fat
        search --no-floppy --label --set=root 422A-74D4
        chainloader /EFI/goofiboot/goofibootx64.efi
}
### END /etc/grub.d/40_custom ###
```

I am giving you the info available in EFI:

```
/boot/efi/EFI]ls
Boot   com.solus-project   goofiboot   Manjaro   Microsoft

/boot/efi/EFI/com.solus-project]ls
initrd-com.solus-project.lts.4.9.20-12   kernel-com.solus-project.lts.4.9.20-

/boot/efi/EFI/goofiboot]ls
goofibootx64.efi
```

gohlip   Apr '17

> Alpha:
>
> search --no-floppy --label --set=root 422A-74D4

Quikly this is wrong. When using uuid, it shhould be

>

search --no-floppy --fs-uuid --set=xxxxxxxxxxxxxxxxxxx

gohlip   Apr '17

Depending on whether your $esp is /boot or /boot/efi (we don't know- only you will know) the path is one of

/efi/EFI/goofiboot/goofibootx64.efi

/EFI/goofiboot/goofibootx64.efi

ps: manjaro grub entry for solus should point to kernel kernel-com.solus-project.lts.4.9.20-12 and use initrd initrd-com.solus-project.lts.4.9.20-12 and path is /EFI/com.solus-project/ or /efi/EFI /com.solus-project/