

Boot MX Linux on a Windows PC without using a USB

How-to dual Boot Windows & MX Linux, either on an external USB connected hard drive or using just the PC's hard drive and nothing else.

Normally it is not possible to install MX Linux on the same drive that the Live MX Linux is on.

[viewtopic.php?p=766760#p766760](#) is Post 82 showing how to boot into a Live MX-23.2 without using a USB, etc. This post is about Windows using Grub2Win which is a boot manager that allows other operating systems to be used. It does not touch the Windows master boot record and is located on the system's primary partition. It can boot into an ISO file.

That post showed that it is possible to boot into a Live MX-23.2 as well install MX-23 into another drive, such as an internal SSD connected to the motherboard with a SATA cable or an external drive (HDD or SSD, etc.) connected to a motherboard USB port via a USB connector/UASP adapter. But this post did not show how to install using the same drive where Windows and the extracted MX-23 ISO files are located. That is the purpose of this post.

FYI: Post 87 is about the MX-Installer not recognizing the device or partitions where Windows and the extracted MX-23.2 ISO files are.

This post shows how to install a Live MX-23 onto an empty partition (there are actually two) of the same drive that Windows and the Live MX-23 extracted ISO files reside on. This post is divided into two sections. The first is a step by step guide on how to do this and the second has some points I thought were important to keep in mind.

1. After being able to boot into a Live MX-23 as shown in Post 82 above there are a few things that need to be done in Windows. At this point I will presume that Grub2Win has been installed and setup (all that essentially means is that it has been installed) and the extracted MX-23.2 files have been put into a dedicated FAT32 partition (it only takes up about 2GB so 5GB should be enough).
2. In order for the Live MX-23 to be installed on a partition where Windows and the Live MX-23 files are located, it will be necessary to create at least two partitions (I am not sure and have not tested, but using Full Disk Encryption will require a partition for the /boot files; 500MB – 1GB would be the size).
3. The MX Installer is going to want at least two partitions. I created the test Windows installation using the entire disk so I shrank the primary partition (C:\) twice to create two partitions.

One is for the root (/) that I made FAT32 (that doesn't really matter) and labeled "ROOT" for easy identification. I made it 20GB for this test.

The other is for the EFI partition (/boot/efi). Make it FAT32 (important) and make it 100MB (this size is important). I labeled it "EFI" for easy identification.

If you want a SWAP partition then make another partition, format it FAT32 only for consistency and make it the desired size (the MX-23 Installer can create either a partition or file for SWAP, so I did not use the partition for SWAP in this test).

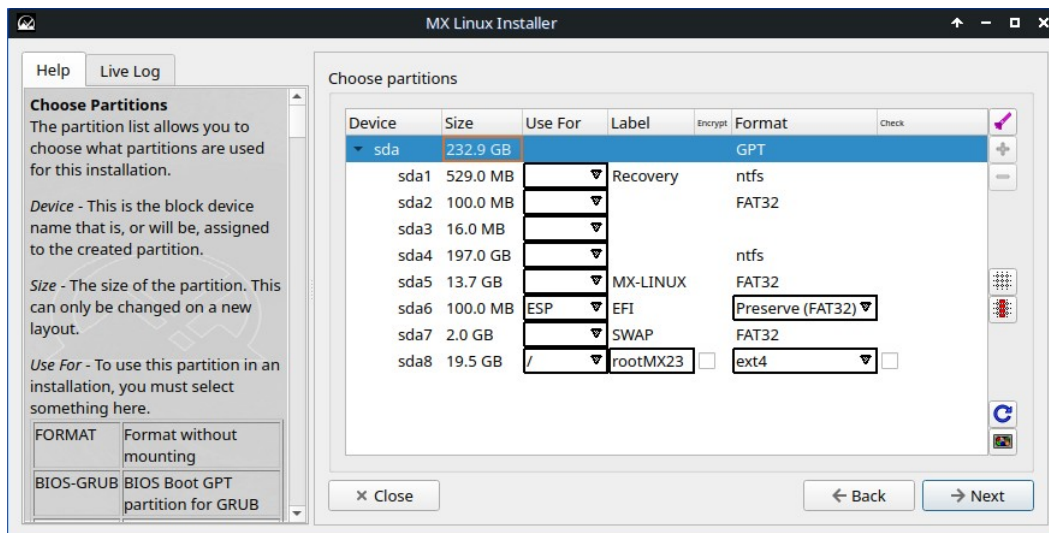
- This step is a change from what was said in my Post 82 and is very important or the installation will fail. The Live MX-23 must be booted up to RAM. That is done by adding the “toram” option to grub (kernel parameter).

In other words, my Post 82, Step 5, gave some text to add to the end or bottom of the `C:\grub2\grub` file. The `grub2` is created when Grub2Win is installed. The “toram” option would be put after the line ending “nosplash”. The below code windows shows the complete text that should be put at the end of the grub file:

```
menuentry "MX 23.2 Libretto manual Frugal Install" {
    insmod part_msdos
    insmod fat
    search --no-floppy --set=root --label MX-LINUX
    linux /antiX/vmlinuz bdir=antiX blab=MX-LINUX quiet splasht nosplash toram
    initrd /antiX/initrd.gz
}
```

- Now restart Windows which will boot up to the Grub2Win boot-selection window.
- Select the “MX 23.2 Libretto manual Frugal Install” option to boot up to the Live MX-23.2. Because MX-23 is now booting up to RAM you should see a nice progress bar as everything is being loaded into RAM. If you do not see this progress bar then something is wrong and the installation will almost certainly fail.
- Now that you are in MX-23.2 that is loaded into RAM, launch the MX Installer but do NOT use the Installer Icon on the Desktop. Rather, use the Terminal and use this command (otherwise the installation will fail):
`sudo minstall --brave`
- When at the installation point where selecting the drive and partitions, only a custom selection is allowed. The “Regular install using the entire disc” is greyed out in this case. That is okay since we only want to install on specific partitions.

Choose a custom installation to choose the partitions to use. In my testing I created three for the installation: EFI, SWAP, and MX23. The below screenshot shows all the partitions on the SSD where Windows10 is installed.



sda1 to sda4 are all Windows partitions.

sda5 (MX-LINUX) is the 14GB FAT32 partition for the extracted Live MX-23.2 ISO files are located

sda6 (EFI) is the 100MB FAT32 partition for booting into MX-23

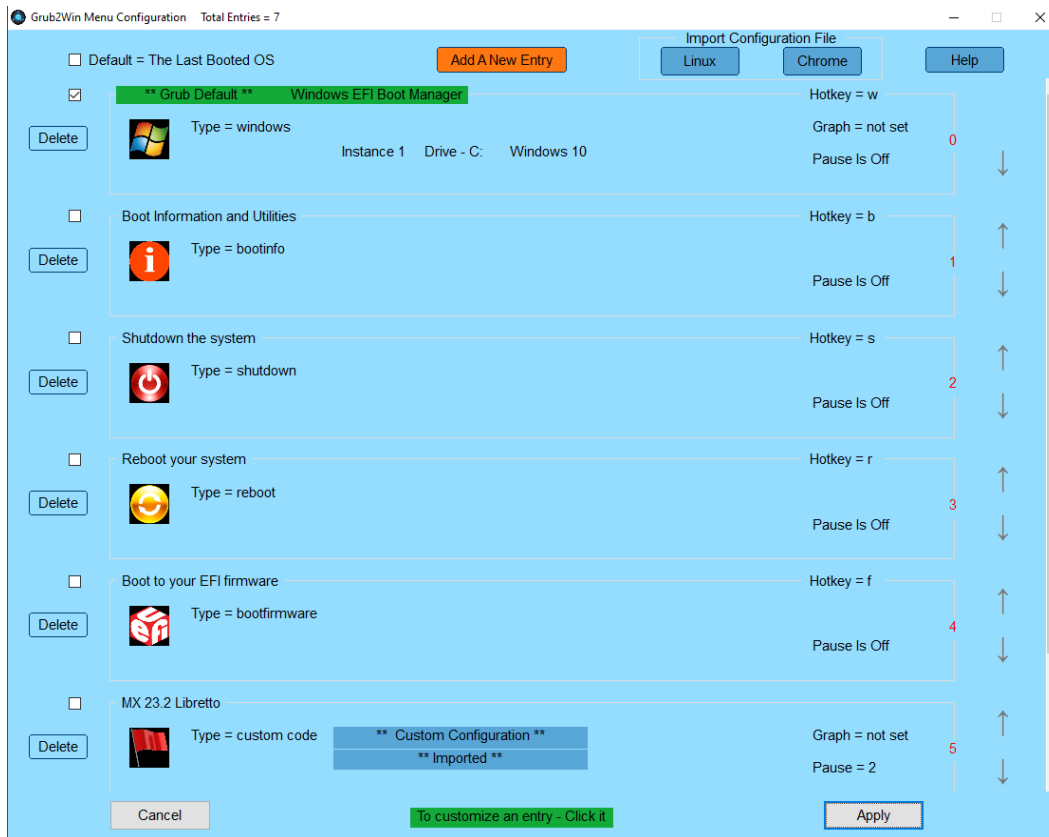
sda7 (SWAP) is a 2GB partition that I never used in this test (MX-23 can use a SWAP file)

sda8 (rootMX23) is a 20GB ext4 partition for MX-23 root and home

By the way, all of those partitions are unmounted. You can confirm by opening "Disk Manager" in MX Linux (from the Whisker menu) and you should see all of the check boxes on the left side, under "Enable", should be empty, indicating that that partitions is not mounted.

Continue as with a normal installation.

9. The installation should now be complete. Restart the computer, boot up to the Grub2Win menu and boot into Windows10.
10. Now that MX-23.2 has been installed, a Grub2Win menu entry needs to be created in order to boot into the MX-23.2 installation. First a copy of the MX-23 grub file will be needed so in MX-23, use a file manager, e.g. Thunar, and go to /boot/grub/grub.cfg and copy it to a FAT32 file system. You could also get this from the Live MX-23.2.
11. Now that you have the grub.cfg file from MX-23, go back to Windows and open Grub2Win. In the window that opens, named "Grub2Win Menu Configuration", click on the blue "Linux" button on the upper-right side (see below screenshot). That will open Windows "File Explorer" to import the Linux grub.cfg file. As soon as that is done there will be three options to appear on the grub menu. I selected the first two, "MX 23.2 Libretto" and "MX 23.2 Libretto, with Linux 6.1.0-17-amd64". The third was MX-23.2 using systemd, which I did not test. The first two worked but I can delete the second since I don't need it. The below screenshot shows the second page where the different operating systems are (I did not get the entire page as shown by the scroll bar not being all the way down). The order of appearance can be changed (arrows on the right side) as well as other configuration settings.



Click “Apply” and “OK” on the next page that that should be it. The below is a screenshot showing the page where the “MX 23.2 Libretto” menu item can be configured.

The grub menu window can be configured. The similar grub menu screenshot I used in Post 82 was using all the defaults. The below is a little different.

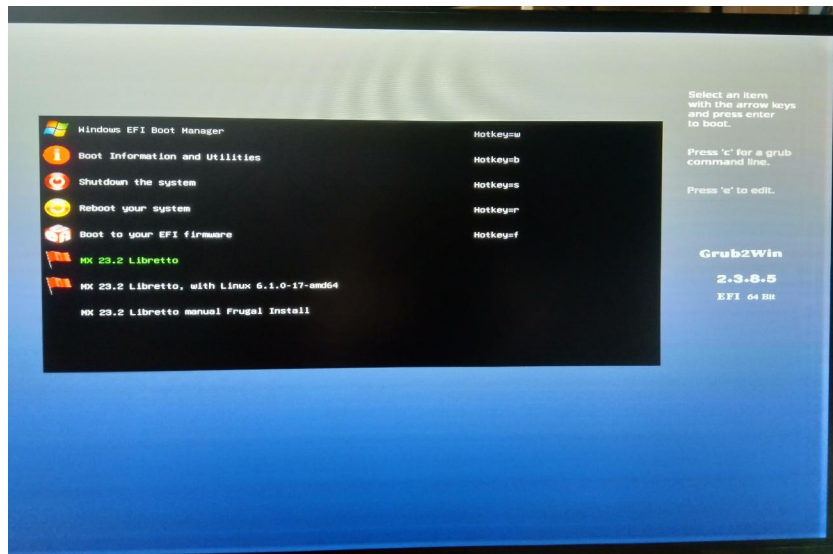
I removed the turquoise highlight bar for the selected entry (it only changes to green like before but it clashed with green)

background was changed to solid black

text on right changed to white

clock on right changed to progress bar on bottom (neither show – I stopped the countdown)

Grub screen resolution can also be changed (I tested several, up to 1920x1080)



12. Now Restart and the grub menu should appear to select where you want to boot into.

Second Section

The following are some points I thought are important and may help in troubleshooting.

- If the Grub2Win menu does not appear when booting up then there are two likely reasons.
 1. Grub2Win is not the highest priority to boot into. To change go into the BIOS and check the boot order. There is often a second place. My MSI motherboard calls this secondary area BOOT PRIORITY. They both sound like the same thing but there are a lot of on-line pages that also talk about the boot priority in addition to the boot order. I spent hours on that problem.
 2. The second reason that might happen is the text that was added to the end of the Grub2Win grub.cfg file (located under the “grub2” folder) has gone away. See step If that happens, just paste it back in. See step 4 above. Please note that anytime a change is made to the Grub2Win boot menu configuration, the text that was added to the grub.cfg file (Step 4) will VERY OFTEN disappear. Not always, but almost always.
- The Grub2Win boot menu screen can be configured, e.g. it can be all black, etc. To change the background color of the menu screen, when in the Grub2Win application, just click on the image of its screen in the upper-right of the window.
- Windows10 doesn't have an easy or at least obvious (meaning I never found one) way to extract ISO files. But a very easy way to do this is, in Windows, double-click the ISO file. That will automatically mount it to a virtual DVD drive. Simply copy the now extracted and shown files into the “MX-LINUX” partition. Done.

Question/comments/errors welcome.

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