

# Making a bootable external USB drive with MX Linux installed

Compatible with both Legacy aka MBR aka CSM and modern UEFI systems.

This How-To guide outlines the steps needed to create this 'Hybrid disk' without a need to change the BIOS/Firmware of other PCs each time to boot from this drive. Minimally these PCs *may* need to be setup for allowing USB booting via the One Time Boot Menu.

Installing both bootloaders may also be useful for an internal drive installation. Experience has shown that Windows Update will, at times overwrite the ESP or change the Boot Order, causing a boot failure. This allows a PC to boot in BIOS mode until repaired.

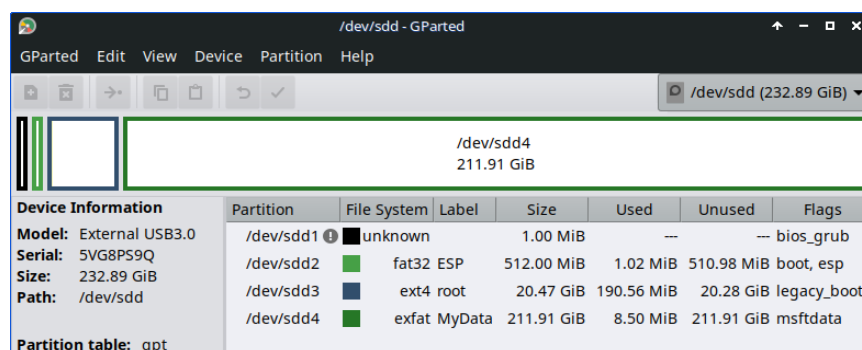
## 1.0 Preparation

Use MX Live USB Maker to create a boot USB. Accept all the defaults as nothing special is needed here.

### 1.1 Preparation of external drive

If given a choice boot in UEFI mode. More on this later. **Note for KDE users** - install GParted to make all flag settings.

1. Boot with Live USB created before.
2. Run GParted. It will ask for your/root password 'demo'.
  - In the 'Device' Menu choose 'Create Partition Table...' and click Create a 'GPT' Partition Table...'
  - In 'Select new partition table type:' select 'gpt' and click '✓ Apply'.
  - Create the following partitions:
    - 1 Mb format 'cleared'. Set 'Label:' and name to 'bios\_grub'.
    - 512 Mb size, FAT32 format. Set 'Label:' to ESP.
    - Root partition, ext4 format. Set 'Label:' to root. — minimum size 20 GB.
    - Optional 'MyData' partition exfat format. Set 'Label:' to 'MyData'. created from the remaining space.
    - Click the check ✓ ('Apply All operations') on the toolbar and click '✓ Apply'.
    - Set flags by right clicking on a partition and selecting 'Manage Flags'.
      - For the 'bios\_grub' partition set flag to 'bios\_grub' and click 'Close'.
      - For the 'ESP' partition set two flags: 'esp' and 'boot' and click 'Close'.
      - For the 'root' partition set flag to 'legacy\_boot' and click 'Close'.
    - Set the 'bios\_grub' 'Partition name:' to 'bios\_grub' and click 'Close'.
    - Click the check ✓ ('Apply All operations') on the toolbar and click '✓ Apply'.



An external drive before MX Linux has been installed.

## 2.0 Installing MX Linux

### 2.1 Disable the OS-prober

The OS-prober needs to be disabled so the Grub menu will only list own entries (vs the PC's internal drives).

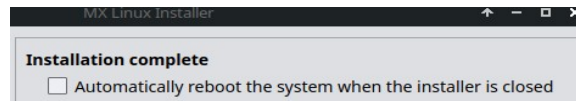
1. Type Ctl-Alt-T to open a terminal window. Type in the terminal window:

```
sudo chmod -x /etc/grub.d/30_os-prober (password demo)
```

**NOTE:** The removed execution bit (-x) will be carried over into the installed system. The GRUB menu as was generated during the installation, would only have entries for this one system and not the systems internal drives.

## 2.2 Start the MX Installer

1. Choose the EFI partition created above on the external drive as the ESP target - **VERIFY!**
2. Set the root partition just created above to the one on the external drive - **VERIFY!**
3. **DO NOT** reboot! Uncheck the 'Automatically reboot the system when the installer is closed' checkbox.

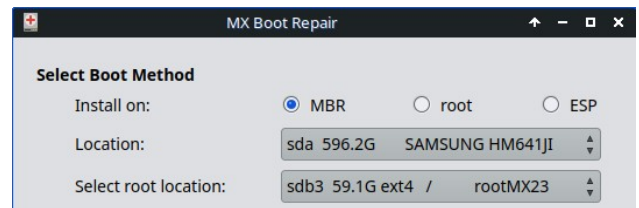


4. Click '► Finish' on the MX Installer.

## 2.2 Install GRUB for Legacy/BIOS/MBR boot

To make the drive usable for Legacy/BIOS boot mode:

1. Open MX Boot Repair.
2. Select 'Reinstall GRUB bootloader...' and click '▼ Apply'.
3. Enter 'demo' for the password prompt.
4. For 'Install on:' Choose 'MBR'.
5. Set 'Location:' set it to the external drive. The drive make and model is included as a hint.
6. Set Select root location to the / partition of the external drive. The partition 'Label:' is included as a hint.
7. Click '▼ Apply'. When asked 'do you want to exit MX Boot Repair?' click '▼ Yes'.



## 2.3 Install GRUB for UEFI boot

**Do this only if your external drive was made on a Legacy/CSM/BIOS PC.** The MX Installer would not have offered the ESP choice as a Grub location. FYI in MX Boot Repair the volume Label 'ESP' is included as a hint.

To make the drive usable for UEFI boot mode:

1. Run MX Boot Repair.
2. Select 'Reinstall GRUB bootloader...'
3. For 'Install on:' Choose 'ESP'.
4. Set 'Location:' set it to the external drive ESP partition.
5. Set 'Select root location:' to the / partition of the external drive.
6. Click '▼ Apply'.
7. When asked 'do you want to exit MX Boot Repair?' click '▼ Yes'.
8. Close the terminal window by typing 'exit' and pressing enter.

