

# Dual boot Batocera

It is recommended to boot Batocera off of a USB/other external drive and to [use your BIOS boot selection menu](#) to switch between Batocera and other operating systems that may already be on other drives. You can still [use drives with other operating systems on them](#) to host your userdata such as ROMs, BIOS files, saves, etc. However, some people prefer to have Batocera directly installed on the main hard drive alongside another pre-existing OSes, this page is for that.

Ordinarily, Batocera utilizes [Syslinux](#) to boot, which is configured to only boot Batocera. Thus, for most dual boot setups we will be utilizing [GRUB](#) to show a boot selection menu after BIOS has loaded instead.




In case you install Batocera on your hard-drive, you may want to rename the BATOCERA partition to something unique like BATOPC. If you do, edit the `grub.cfg` file below to have `label=BATOPC` instead of `label=BATOCERA`. This allows you to still boot using Batocera installed on a USB without worry that the hard-drive will always take priority due to sharing the same label.

## Dual boot Batocera and Windows

You will likely have to wipe your hard drive's contents to do this, so no data can be carried over from a pre-existing Windows installation. To dual boot Windows and Batocera on the same drive:

1. Partition your intended drive to begin with a large physical NTFS partition for Windows. It is recommended to use a GPT partition table. The rest of the free space will be used for Batocera.
2. Install Windows via your preferred method. It will re-partition the existing NTFS partition into smaller logical partitions, but should retain its total size.
3. In the empty space, add a new physical FAT32 partition around 8GB in size (can be larger if you want, but not smaller) labelled "BATOCERA". This will be used for Batocera's boot files.
4. Immediately after the BATOCERA partition, create another partition to fill up the rest of the drive. This will be used as the "internal" userdata. [Check out which filesystem to use](#). If you'd like to allow Windows to access the userdata partition, it is recommended to use exFAT or NTFS. BTRFS can also work, but requires kernel drivers for Windows to be installed to allow access to it.
5. Rename the folders in Windows' EFI partition from `EFI/Boot` to `EFI/Boot_backup`
6. Download [this ZIP file](#) and extract it.
7. Copy the contents of `EFI_WINDOWS` to Windows' EFI partition. The `BOOT` folder should be in the same spot as the old `Boot` folder was.
8. Boot into Batocera from a USB drive, run `blkid /dev/sda#` (where `sda#` is the Windows EFI partition) and note down the ID of the partition.

-  **Fix Me!** (confirmation needed) To do this on Windows itself, open an administrator command prompt and run `diskpart, list disk, select disk=#` (where `#` is the number of the disk with Windows EFI on it, usually 0), `uniqueid disk to`

get your disk ID (add the hyphen in the middle).

```
C:\Windows\system32>diskpart

Microsoft DiskPart version 6.1.7601
Copyright (C) 1999-2008 Microsoft Corporation.
On computer: AMD-BUILD

DISKPART> list disk

   Disk ###  Status              Size               Free              Dyn  Gpt
   -----  -
   Disk 0    Online              931 GB              0 B
   Disk 1    Online              465 GB             1024 KB
   Disk 2    Online               14 GB               0 B                *

DISKPART> select disk=0

Disk 0 is now the selected disk.

DISKPART> uniqueid disk

Disk ID: 4859B611

DISKPART>
```

9. Open `ubuntu/grub.cfg` and change `2AD8-4A0C` to the ID of the partition.

The final `grub.cfg` file should look like this:

### [grub.cfg](#)

```
set default=0
set timeout=5

menuentry 'Windows 10' {
    search --fs-uuid --no-floppy --set=root 2AD8-4A0C
    chainloader (${root})/EFI/Microsoft/Boot/bootmgfw.efi
}

menuentry "batocera.linux" {
    search --set=root --label BATOCERA
    linux /boot/linux label=BATOCERA console=tty3 quiet loglevel=0
    vt.global_cursor_default=0
    initrd /boot/initrd.gz
}
```

## Dual boot Batocera and other Linux distributions

Here are some examples on how to dual boot Batocera with popular Linux distributions like Ubuntu or Linux Mint.

## Ubuntu Linux

### Install Ubuntu

Follow your favorite method for the initial Ubuntu install, leaving extra unpartitioned space for Batocera and its userdata.

### Batocera partitions

After the Ubuntu partition, create two consecutive partitions:

- Partition 1: Type = fat32, name = BATOCERA
- Partition 2: Type = ext4, no special labels or flags required, it must be created and placed right after the BATOCERA partition

Then download [boot.tar.xz](#) and unzip it on the BATOCERA partition.

### Configure the Ubuntu GRUB

1. While booted into Ubuntu, create `/etc/grub.d/50_batocera` with the following content:

#### [50\\_batocera](#)

```
#!/bin/bash

cat << EOF
menuentry "batocera.linux" {
    search --set=root --label BATOCERA
    linux /boot/linux label=BATOCERA console=tty3 quiet
loglevel=0 vt.global_cursor_default=0
    initrd /boot/initrd.gz
}
EOF
```

2. Run `sudo update-grub`
3. Reboot

You will now be presented with the GRUB menu upon booting, allowing you to select either Batocera or Ubuntu to boot into.



Older versions of Ubuntu may need `grub-customizer` to do the above. More info on [this earlier version of the page](#).

Alternatively, try the [Linux Mint section below](#).

## Linux Mint/MX Linux

For other distributions like Linux Mint 19.03, you can use the following method. It also works for MX Linux, all mentions of Linux Mint also refer to MX Linux in this section.

### Install Linux Mint

Follow your favorite method for the initial Mint install, leaving extra unpartitioned space for Batocera and its userdata.

### Batocera partitions

Create 2 consecutive partitions on your hard drive:

- Partition 1: type = fat32, name = BATOCERA
- Partition 2: type = ext4. It must be created and placed right after the BATOCERA partition.

Then download [boot.tar.xz](#) and unzip it on the BATOCERA partition.



Since it's been set up manually, you can remove the `autoresize` flag from `batocera-boot.conf`. It may interfere with booting if it's still on and there's no more space to expand to.

### Configure the GRUB boot loader

1. Download the following file and save it to `/etc/grub.d/15_batocera`:

#### [15\\_batocera](#)

```
#!/bin/sh

BATOCERA_UUID=$(lsblk --fs --noheadings --pairs -o TYPE,LABEL,UUID
|
                grep -E '^TYPE="part" LABEL="BATOCERA"
UUID="[^\"]*$' |
                sed -e s+'^TYPE="part" LABEL="BATOCERA"
UUID="\ ([^\"]*\)"$'+'\1'+ | head -1)

if test -n "${BATOCERA_UUID}"
then
    echo "Image batocera found on ${BATOCERA_UUID}" >&2

    cat <<EOF
menuentry "batocera.linux" {
```

```
insmod fat
    search --no-floppy --fs-uuid --set=root ${BATOCERA_UUID}
    linux /boot/linux label=BATOCERA console=tty3 quiet loglevel=0
vt.global_cursor_default=0
    initrd /boot/initrd.gz
}
EOF
fi
```

- The file can also be automatically downloaded with the following command:

```
sudo wget https://batocera.org/upgrades/grub/15_batocera -O
/etc/grub.d/15_batocera
```

2. Then run the following commands:

```
sudo chmod a+x /etc/grub.d/15_batocera
sudo update-grub
```

Eventually, it will output the following:

```
[...]
[] Image batocera found on 3377-44C4
[...]
```

3. Reboot

You will now be presented with the GRUB menu upon booting, allowing you to select either Batocera or Linux Mint to boot into.

## Ventoy

<https://www.ventoy.net/en/index.html>

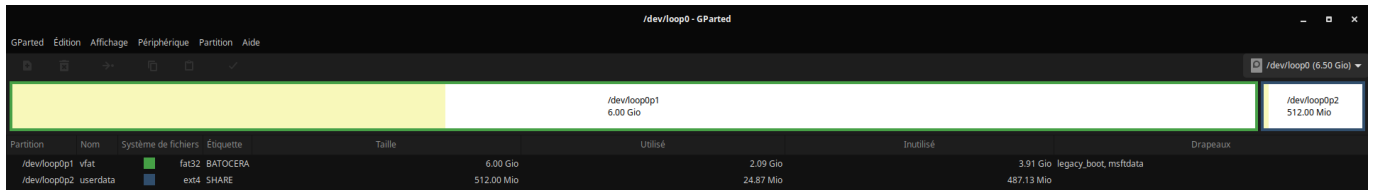
Technically, this isn't really dual-booting, but booting a static image already loaded onto your drive's filesystem as its own mounted filesystem. It can ease the process of updating the image, however this is probably unnecessary as Batocera itself has [its own updating tool](#). Nonetheless it could be useful for machines that otherwise don't have an internet connection and have to rely on another one to update or machines that absolutely refuse to boot via conventional manners.

By default, Batocera's userdata partition is only 512MB before expanding, obviously not large enough to do anything. Ventoy's boot process prevents Batocera from seeing the drive as having any available free space, so auto-expansion on the first boot never occurs. This can be solved by either *only* mounting Batocera's boot partition (thus making the next immediate partition the userdata partition, whatever that may be) or by running the following (replace # with the number of GB you want in **total**, including the boot partition):

```
qemu-img resize batocera.img +#G
```

```
sudo losetup --find --show batocera.img
```

and expanding the userdata partition with Gparted or something similar.



If you want to keep using [the command line for Gparted](#):

```
gparted /dev/loop *
```

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