

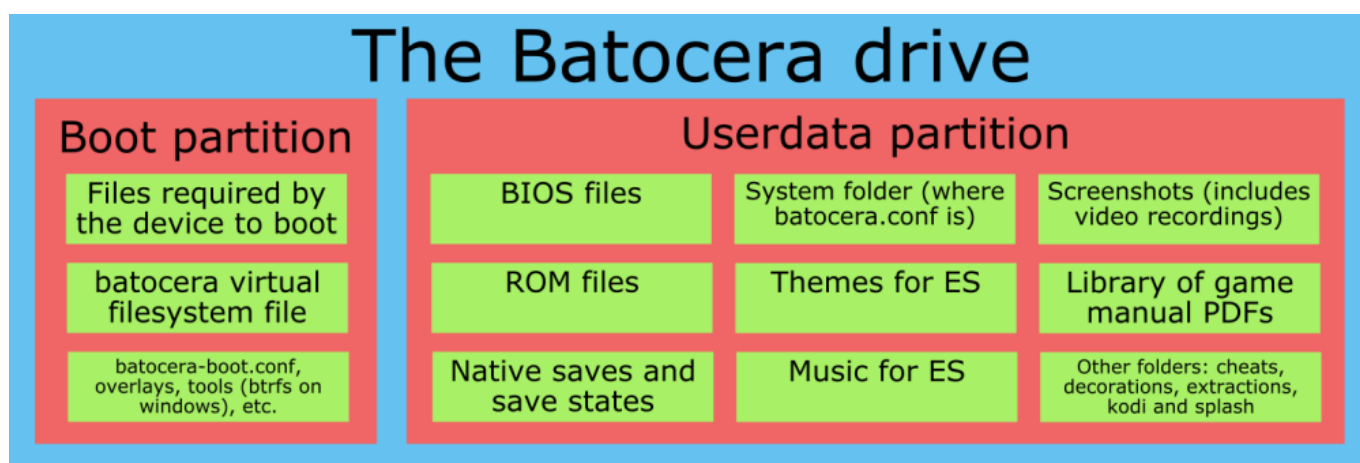
Batocera's File Partitions

Buildroot

Batocera.linux is based on [buildroot](#). You can see buildroot as a minimal Linux distribution while it maintains base packages. However, it's a tool to build root file systems (like a firmware). Batocera.linux mainly includes extra packages not available on buildroot (emulators, front-end, additional drivers for devices...) and configuration.

More information about buildroot can be found here : <https://buildroot.org>.

System mount points / firmware / overlays



Technically, batocera.linux has 2 partitions. 1 for the system, 1 for the user data. The partition named BATOCERA visible on any computer under Windows, MacOS or Linux is the **system**. It is a partition formatted in FAT32, which is kind of a universal format, supported by almost every OS, and boot system (BIOS or UEFI).

It contains mainly 3 files :

- linux, the technical system (about 10 MB)
- batocera, the software system containing all the programs (about 1.1GB compressed)
- initrd.gz or uInitrd, the loader (about 600 kB)

Upgrading the system means mainly that these 3 files are getting upgraded. There are some other files depending on the architecture.

The file batocera can be seen like a firmware, you cannot modify it. However the architecture is a bit more complex and allows you to modify the firmware without recompiling everything : batocera.linux supports and uses by default [overlaysfs](#). The real system is the firmware (the file batocera) + a filesystem in memory initialized with the file overlay if it exists. The overlay is an in-memory filesystem and not directly the overlay file because under linux, you cannot properly unmount the root filesystem, mainly when it's a complex root from several filesystems.

As a general rule, the file overlay doesn't exist, unless it's created by the script batocera-save-overlay if a user or developer customizes the system.

```
+-----+
| TMPFS, writable          | --> must be saved explicitly on
| /boot/overlay           |
+-----+
| firmware (squashfs), read only |
+-----+
```

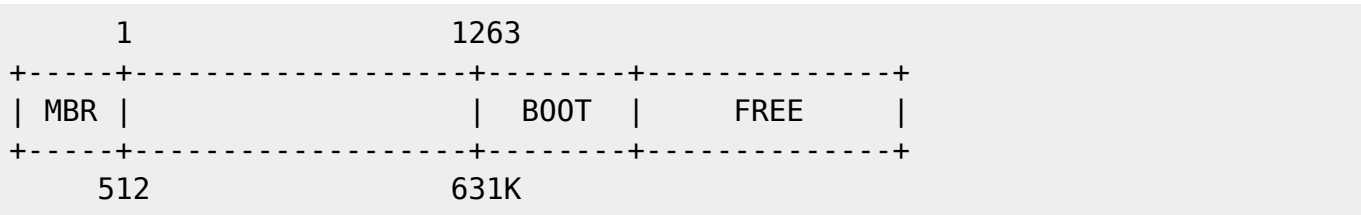
More details on overlays can be found here : <http://embedded-computing.com/guest-blogs/understand-what-an-overlays-is-and-how-it-works>

Sdcard / EMMC / Usb key / Hard drive

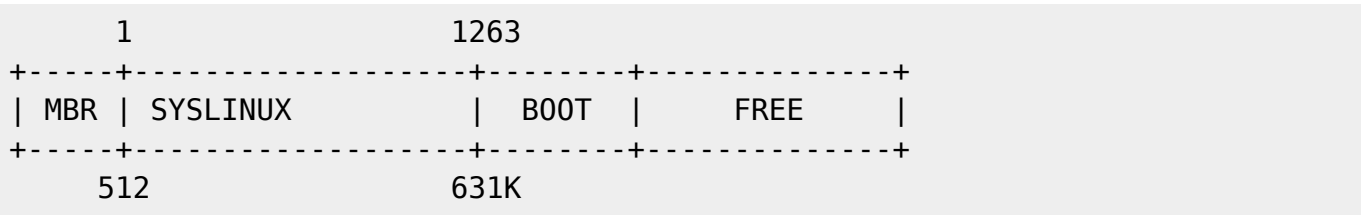
When you create the card to run batocera.linux, the card is more complex than a basic card, and it's dependent on the architecture. It's why you need a special tool to burn it.

- BEFORE BOOT : these are technical files to be able to access the BOOT partition and run the Linux kernel.
- BOOT : this partition is visible on Windows. This is where the batocera.linux system is.
- FREE : this free space is filled with a SHARE partition on the first boot to save all the user data (ROMs and ancillary files like screenshots, video snaps and so on).
- SHARE : this partition replaces FREE at the first boot. It is partitioned as EXT4 by default, but you have other options depending on the usual OS you have on your other computers. See the chapter "Userdata file systems" below.

RPI SD CARD



X86/X86_64 USB KEY / HARD DRIVE



XU4 SD/EMMC CARD

1	31	63	719	1231	1263		
MBR	bl1	bl2	uboot	tzsw		BOOT	FREE
512	15K	31K	359K	615K	631K		1.2G

C2 SD CARD

1	97	1281		
MBR	bl1	uboot	BOOT	FREE
512	48K	640K		

User data file system

You have several options to host your user data file systems. Refer to the [add games and BIOS page](#) to get some guidelines to make your decision. Be careful with this choice: in most cases, if you need to change the file system, **you will lose all your ROMs, BIOS files and other userdata.**

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