

Easy & Advanced Arcade



Under construction.

If this article is designed for beginners, it should probably be a bit shorter.

Introduction

This page is dedicated to beginners for helping them to easily play arcade games on Batocera.

Arcade has long been the most complicated of emulations due to its very own nature: arcade machines don't all use the same hardware, so they all have to be emulated independently. Imagine you want to play 5 different arcade games, you could have to use 5 different hardware emulators, whereas playing 5 different SNES games will only need the one and only SNES emulator.

That's why MAME has been invented: MAME is kind of a meta-emulator, it brings all the different emulated hardwares of arcade machines into one system, making it simpler for the user to play arcade games without any knowledge of the underlying arcade machine on which the games are launched. It is no small feat and this is why MAME is so complicated to use.

MAME is a fantastic piece of software, that evolved from being a **M**ulti **A**rcade **M**achine **E**mulator into a [framework whose goal is to emulate as many arcade machines and vintage computer systems as possible](#).

MAME's focus is emulation accuracy, rather than performance. As a result, it emulates **a lot** of gaming systems, but often times, the performance is better when you use other specialized cores, like FBNeo or dedicated Naomi/Atomiswave emulators.

General MAME principles

There are only two main principles to know to get a good grasp of how to use MAME on your Batocera system: romsets and BIOS/driver files

What is a romset

A romset is a set of all the different game roms emulated by a MAME version.

A romset contains parent game roms which are roms corresponding to the 'main' version of a game and clone game roms which are 'alternative' versions of a parent rom. As you can guess, in most cases we will discard all clone roms and only use the main (or parent) ones.

Most of the code used to make those game roms playable is included in the MAME emulator. Sadly this means that there is a strong and close relationship between a MAME version and the game roms

versions : When MAME releases a new version, game roms may need to be updated to fit to the new emulator version.

To keep it simple: if you use a certain MAME emulator, say version 0.78, you also have to get your hands on and use the 0.78 version of the romset.

Some games from another romset may work with your version but **the only way to be sure that the most games are working is to use only a MAME version in conjunction with the romset of the same version.**

For recent versions (such as the one used by FBNeo, see below) there are less and less modifications of game roms, so it is sometime possible to use an older set and still have most of the games playable, but once again : **the only way to be sure that the most games are working is to use only a MAME version in conjunction with the romset of the same version.**

This is because with each new versions, MAME can take new ROM dumps as their reference for emulators. A ROM dump that worked with an earlier version of MAME might not work with a recent version any longer.

So each version of MAME has its specific romset, see the table in Advanced section for a full list.

Types of romsets

In addition to having a version number, romsets can be found in three different flavours :

- **Full Non-merged** (a.k.a. reference set): All ROMs can be used standalone because each zip contains all the files needed to run that game, including any files from 'parent ROMs'. This is the recommended format.
- **Non-merged** (a.k.a. reference set): All ROMs can be used standalone because each zip contains all the files needed to run that game, including any files from 'parent ROMs'. This is different from the full non-merged as it contains certain common BIOS files in the set as a single file shared by multiple ROMs, but is otherwise a bit smaller. This is also recommended, but may result in BIOS ROMs appearing in your game list.
- **Split**: Some ROMS that are considered clones, translations, or bootlegs also require a "parent ROM" to run. The parent ROM is often the first or most common variant of a game. In some cases the parent is not the most popular or best working version of the game, however. For example, in a Split set pacman.zip (a clone), will not work without puckman.zip (its parent).
- **Merged**: Clones are merged into the parent ROM zip, meaning that more than one game is stored per file. Merged ROM sets are not recommended.



For Batocera the recommended type of romset is the non-merged version.

BIOS/Drivers

Some of the game roms from a romset may additionally need BIOS files, the most well known case being neogeo games.

Let's use that as an example: If you want to use NeoGeo games, you'll have to copy the needed

BIOS/driver file (in that case _neogeo.zip_) in the same folder as the game. (example?)



That's all!

Off course if you use different subfolders for your games (genre subfolders or hardware type subfolders for instance) you'll have to copy the BIOS file in every folder containing games which may need it.

Given that they are pretty small files, it's better to copy them all in each of your subfolders.

Where do I find the BIOS files do you say? Well it's very simple : they are included in your romset! (



mention this earlier?)

So if a game doesn't launch and goes back right away to the Emulation Station screen, just try to find the relevant BIOS file and copy it in the game folder.

Arcade Emulation on Batocera



What does this title even mean? What are we describing here?

Default emulators

There are several arcade emulators included in Batocera, but just using the default one will be enough for running the majority of games on your Raspberry Pi. For weaker SBCs, those two systems are:

- Mame 2003Plus
 - mame/romset version: 0.78Plus
 - ROMs folder: mame
- FBNeo
 - FBNeo is kind of an alternative version of MAME (emulating less arcade machines), but it follows exactly the same principles which I just explained
 - FBNeo romset version: FBNeo 1.0.0.0 this corresponds to MAME 0.187 more or less but not entirely, once again it's better to use the FBNeo 1.0.0.0 romset
 - ROMs folder: fbneo

Now some games will only work on Batocera with MAME and some others only with FBNeo.

For PC, the default emulator is regular latest stable MAME, available at the time of release.


Here is a table of all the versions of MAME, FBNeo and RetroArch (



why is

RetroArch even here?) included in the stable versions of Batocera:

Batocera version	Latest MAME core	Latest FB Neo core	RetroArch version
Batocera 34	MAME standalone 0.242 + LR-MAME 0.242	LR-FBNeo 1.0.0.3	RetroArch 1.10.3
Batocera 33	MAME standalone 0.239 + LR-MAME 0.238	LR-FBNeo 1.0.0.3	RetroArch 1.9.14
Batocera 32	MAME standalone 0.232 + LR-MAME 0.228	LR-FBNeo 1.0.0.2	RetroArch 1.9.9
Batocera 31	MAME standalone 0.229	LR-FBNeo 1.0.0.2	RetroArch 1.9.1
Batocera 30	LR-MAME 0.228	LR-FBNeo 1.0.0.0	RetroArch 1.9.0
Batocera 29	LR-MAME 0.225	LR-FBNeo 1.0.0.0	RetroArch 1.9.0
Batocera 5.27	LR-MAME 0.223		RetroArch 1.9.0
Batocera 5.26	LR-MAME 0.220		RetroArch 1.8.6
Batocera 5.25	LR-MAME 0.219		RetroArch 1.8.4
Batocera 5.24	LR-MAME 0.214		RetroArch 1.7.9.2
Batocera 5.23	LR-MAME 0.212		RetroArch 1.7.7
Batocera 5.22	LR-MAME 0.212		RetroArch 1.7.7
Batocera 5.21	LR-MAME 0.206		RetroArch 1.7.6

For further details on all the different arcade emulators in Batocera, see the list in the advanced section ( link?).

Managing the romset

No matter which set you use, you should always copy the full set to ensure that it will all work correctly.

You may rather only copy over each game one by one because full romsets are quite large, but it's usually very difficult to find individual ROMs and to be sure that they are in the right version. Full romsets are the only way to avoid headaches! If you'd rather *just* have the games you'd like to play, it's recommended to copy over the full romset anyway and then clean it to just the playable ROMs using a tool like [BestArcade](#) or [clmamepro](#), from which we will copy later.

The romset files must be in zip format, 7z is not supported and in the next section, when you are told to copy your bios or roms, you must copy the zip files without decompressing them, otherwise, it will not work.

Copy your BIOS/drivers

First we are going to copy BIOS/drivers files from our romsets. Contrary to other systems, these files must not be copied into the bios folder but inside the dedicated roms folder (except for when it isn't).



When copying over the ROMs, keep them in their ZIP format! MAME and FBNeo expect ZIP files, not the raw data.

- Get these BIOS/Drivers files from your MAME 0.78 romset and copy them into the mame roms folder: acpsx.zip, cpzn1.zip, cpzn2.zip, cvs.zip, decocass.zip, konamigx.zip, megaplay.zip, megatech.zip, neogeo.zip, nss.zip, pgm.zip, playch10.zip, skns.zip, stvbios.zip, taitofx1.zip, tps.zip
- Copy these BIOS/Drivers files from your FBNeo (1.0.0.0) romset and copy them into the fbneo roms folder, I only needed three of them: neogeo.zip, pgm.zip and skns.zip

Copy games

- Copy your MAME ROMs from the complete 0.78 romset to the MAME ROMs folders
- Copy your FBNeo ROMs from the complete complete FBNeo romset into the roms/fbneo folder or arcade-specific system folder (like roms/neogeo).
- Play!

You can also use this list to see if a given MAME works on a given emulator or not: [BestArcade list](#) and determine more easily which emulator is the best for the game you want to play.

Further Tricks

- If you want to hide your BIOS files in EmulationStation, edit their metadata with the select menu, add a tag `<hidden>true</hidden>` to your game.
- Remember, if you want to use subfolders in your ROMs folders, just make a copy of BIOS/drivers files into every subfolder and then move your game into the subfolder.

Advanced arcade emulation on Batocera



This section could probably do with an overhaul of its headers.

Changing the arcade emulator on Batocera

There are two ways to change the emulator for a system on Batocera: either through EmulationStation or by editing directly your configuration file located in `/userdata/system/batocera.conf`.

For arcade emulation, you can change the emulator used for system mame or for neogeo, but not for fbneo.

The emulator you chose will then be used for all games of the system.

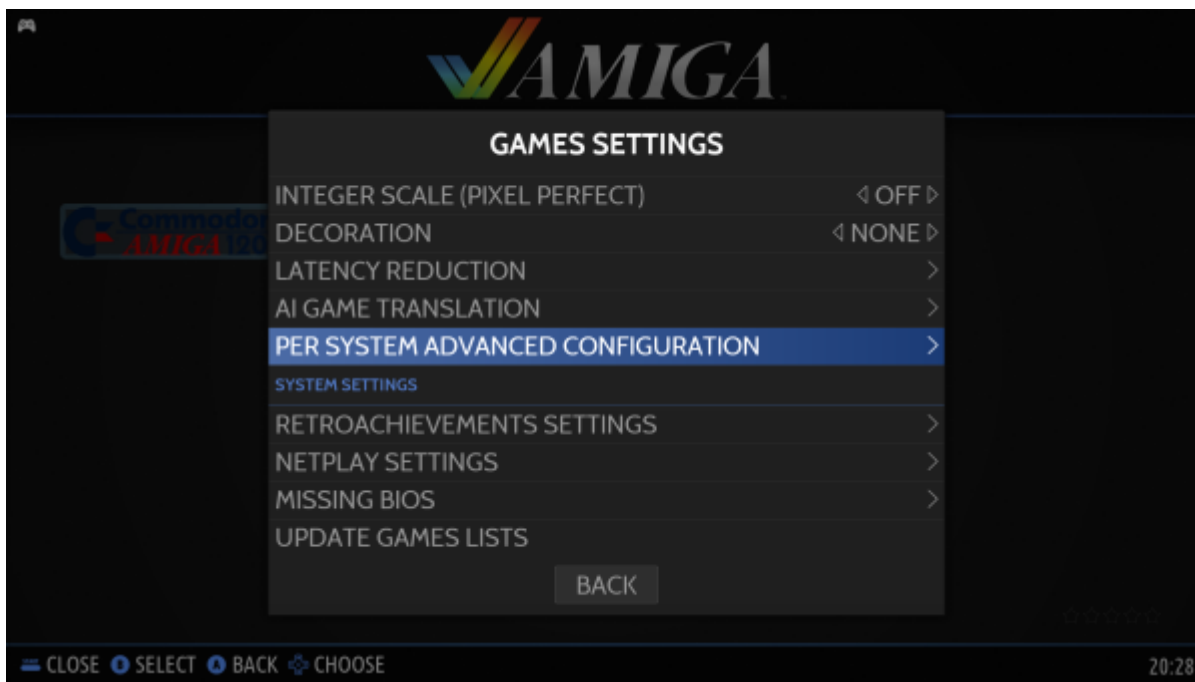
Editing batocera.conf

If you want to change your mame core you need to either modify or add the values for those two lines in `batocera.conf`:

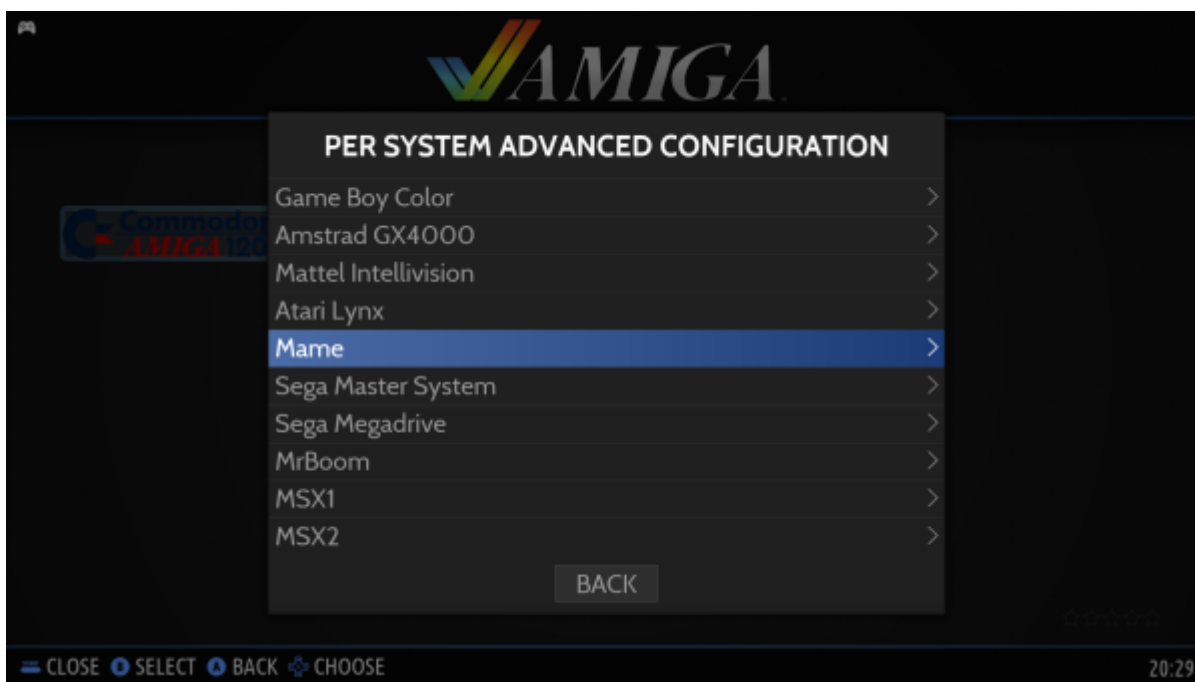
```
mame.core=mame0139  
mame.emulator=libretro
```

Changing the emulator through EmulationStation

Press [START], then go in the **GAME SETTINGS** menu, then choose **Per System Advanced Configuration**



Then seek the MAME or NeoGeo system:



And you will see the list of emulators you can choose from:



All the arcade emulators on Batocera



Too many columns. Information is not accurate. For the actual information here, can it be merged with the table above?

Arcade emulator	Alternative name	Romset	Roms folder	Default on hardware	Purpose	Extras	Notes
MAME (standalone)	Mame	Latest	mame	PC	All arcade hardware	highscores, samples, overlays	The latest and greatest, usually the hardest to run
libretro/mame	Mame	Latest	mame	PC	All arcade hardware	highscores, samples, overlays	Batocera for PC is shipped with the latest stable MAME version available at the time of release, see table up there
libretro/imame4all	iMame4All	0.37b5	mame	RPi0 (<v30)	All arcade hardware	highscores, samples, overlays	Very old version, good for lower devices like pi0, but not many games supported
libretro/mame0139	Mame2010	0.139	mame	PC	All arcade hardware	highscores, samples, overlays	Good core for medium powerful boards like Pi3


Arcade emulator	Alternative name	Romset	Roms folder	Default on hardware	Purpose	Extras	Notes
libretro/mame078plus	Mame2003Plus	0.78+	mame	PC	All arcade hardware	highscores, samples, overlays	Good port for less powerful boards with back porting of more recent developments Romset is a bit specific, it's not the same as standard 0.78
libretro/fbneo	Final Burn Neo	Latest	fbneo	All	All 2D arcade hardware	highscores	1.0.0.X romset is always evolving, it is mostly base on MAME 0.187 romset, but some ROMs are different
libretro/neogeo	Neo Geo	Latest	fbneo	All	All 2D arcade hardware	highscores	can also set to use mame emulators, but fbneo is the recommended way to go
libretro/flycast	Flycast	Latest	atomiswave	All	Atomiswave arcade hardware		AtomisWave roms can be picked from the latest mame romset
libretro/flycast	Flycast	Latest	naomi	All	Naomi arcade hardware		Naomi roms and CHD can be picked from the latest mame romset
Hypseus	Daphne	Specific	daphne	All	Daphne arcade hardware		Emulator for laserdisc arcade games like Dragon's Lair, uses a very specific non-mame based romset

Arcade emulator	Alternative name	Romset	Roms folder	Default on hardware	Purpose	Extras	Notes
libretro/fbalpha2012	Final Burn Alpha	FB Alpha 0.2.97.29	fbneo / neogeo	RPi0 (> v31)	All 2D arcade hardware		Emulator that performs well on low-power boards. Retropietest's excellent page on it (note we aren't using the same romset version).

CHD

Some more recent arcade games can use extra files called CHD, a copy of the harddrive the game was using at the same time. To use CHD for a game, just place the CHD folder alongside your rom zip, at the same level.

NeoGeo system

The NeoGeo system is not an emulator itself, but uses the FBNeo emulator. ( Why do we have this? This doesn't work like this for any other system. This section is also confusing, are we no longer defining systems by their folder? Are settings retained from the general mame and fbneo folder?)

You can use this system to visually separate the NeoGeo games from the other arcade games, they will appear as a dedicated system in EmulationStation.

It uses the same romset as the FBNeo emulator.

Setting a Rotary Joystick with libretro mame2003plus

If you have a special stick like the [Happ Rotary Arcade](#) you need to configure both joystick and keyboard at same time:

```
Dial : AZERTY keyboard: "^" (between "P" and "Enter") -- QWERTY keyboard: "[" (leftbracket)
Dial : AZERTY keyboard: "$" (between "P" and "Enter") -- QWERTY keyboard: "]" (rightbracket)
Dial 2 : AZERTY keyboard: "*" (between "m" and "Enter") -- QWERTY keyboard: "/" (slash)
Dial 2 : AZERTY keyboard: "!" (between "m" and Right) -- QWERTY keyboard: "\" (backslash)
```

You must launch your game, open the *Retroarch menu* with **Hotkey + B**, go to **Input Interface** and

activate the option **Simultaneous**. Then you can use your joystick and keyboard keys at the same time.

Samples

Some games needs extra samples files, place them in :

- For FBNeo: /userdata/bios/fbneo/samples
- For MAME2003plus: /userdata/bios/mame2003-plus/samples
- For MAME2010: /userdata/bios/mame2010/samples

Highscores

Highscores can be tracked and kept through the use of `highscore.dat` which must be in the right version for each emulator / emulator version, they can be found or must be placed here :

- For FBNeo : /userdata/bios/fbneo
- For mame2003plus : /userdata/saves/mame/mame2003-plus/hi
- For mame2010: /userdata/saves/mame/mame2010/hi
- For mame: see temporary solution in following [post](#)

Configuration menus

This is the per-game menu for accessing the machine's advanced configuration such as its dip switches, service mode and diagnostic input.

For FB NEO, the default combo is [START] + [L1] + [R1] (old versions (what older versions? Be specific): Hold [START])



7-1. SYSTEM CONFIGURATION

- * 1. COIN MODE 1 COIN 1 CREDIT
- 2. CHUTE TYPE 2 PLAYERS 1 CHUTE SINGLE
- 3. CONTINUE ON
- 4. MONITOR NORMAL
- 5. DEMO SOUND ON
- 6. SOUND MODE STEREO (0 SOUND)
- 7. EXIT

SELECT OPTION = 1P UP or DOWN
 MODIFY SETTING = 1P LEFT or RIGHT
 = 1P SHOT1 or SHOT2

7. CONFIGURATION MENU

- 1. SYSTEM
- * 2. GAME
- 3. DEFAULT
- 4. SAVE & EXIT

SELECT = 1P UP or DOWN
 START = 1P SHOT1

7-2. GAME CONFIGURATION

- * 1. DIFFICULTY EASY <---4---> HARD
- 2. EXIT

SELECT OPTION = 1P UP or DOWN
 MODIFY SETTING = 1P LEFT or RIGHT
 = 1P SHOT1 or SHOT2

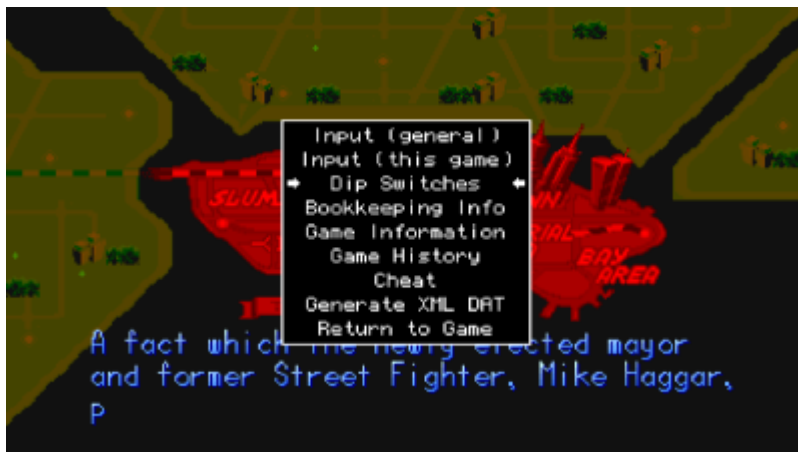
TEST MENU

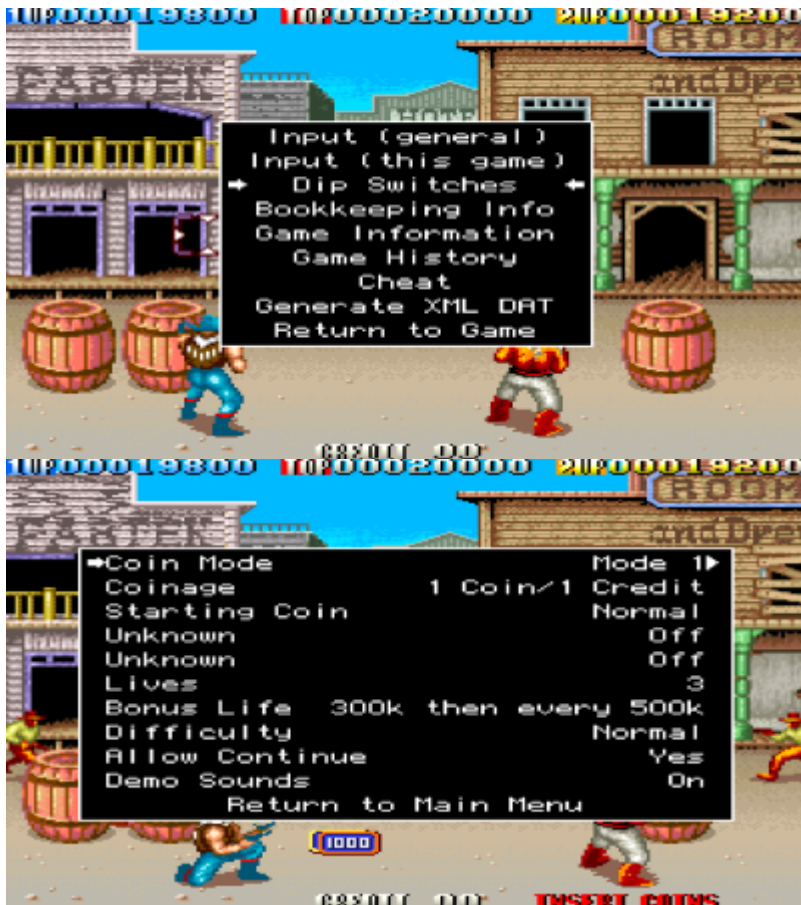
- 1. INPUT
- 2. OUTPUT
- 3. SOUND & VOICE
- 4. COLOR
- 5. DOT CROSS HATCH
- 6. GAME DATA
- * 7. CONFIGURATION
- 8. MEMORY CHECK
- 9. EXIT

SELECT = 1P UP or DOWN
 START = 1P SHOT1











For MAME, the default combo is pushing in [L3] + [R3] (old versions (what older versions? Be specific. I also don't think this was even removed, ie. you can still press Tab on the keyboard to access the dip switch menu): [Tab] on the keyboard)

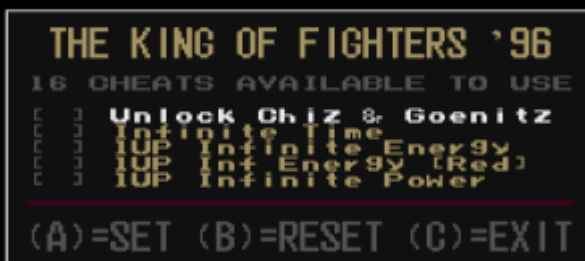
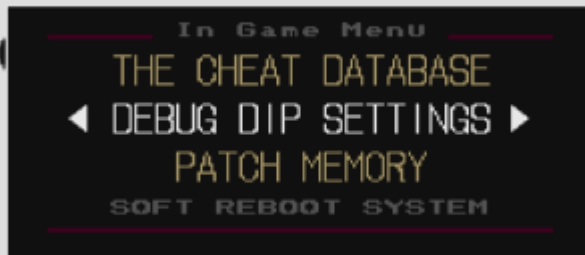
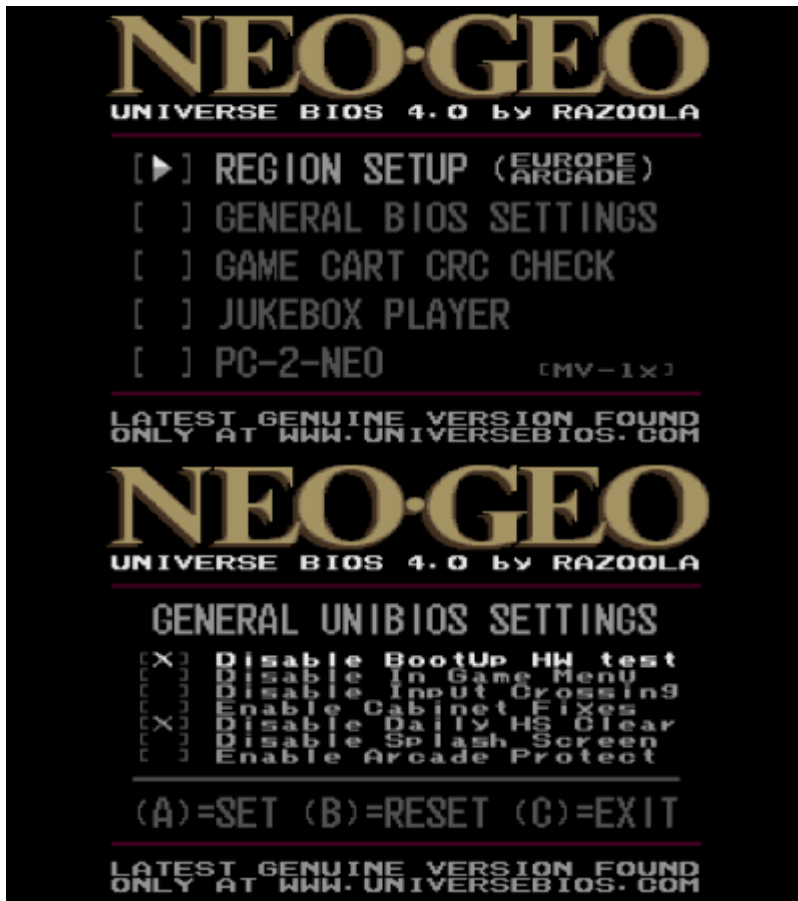




For NEOGEO:

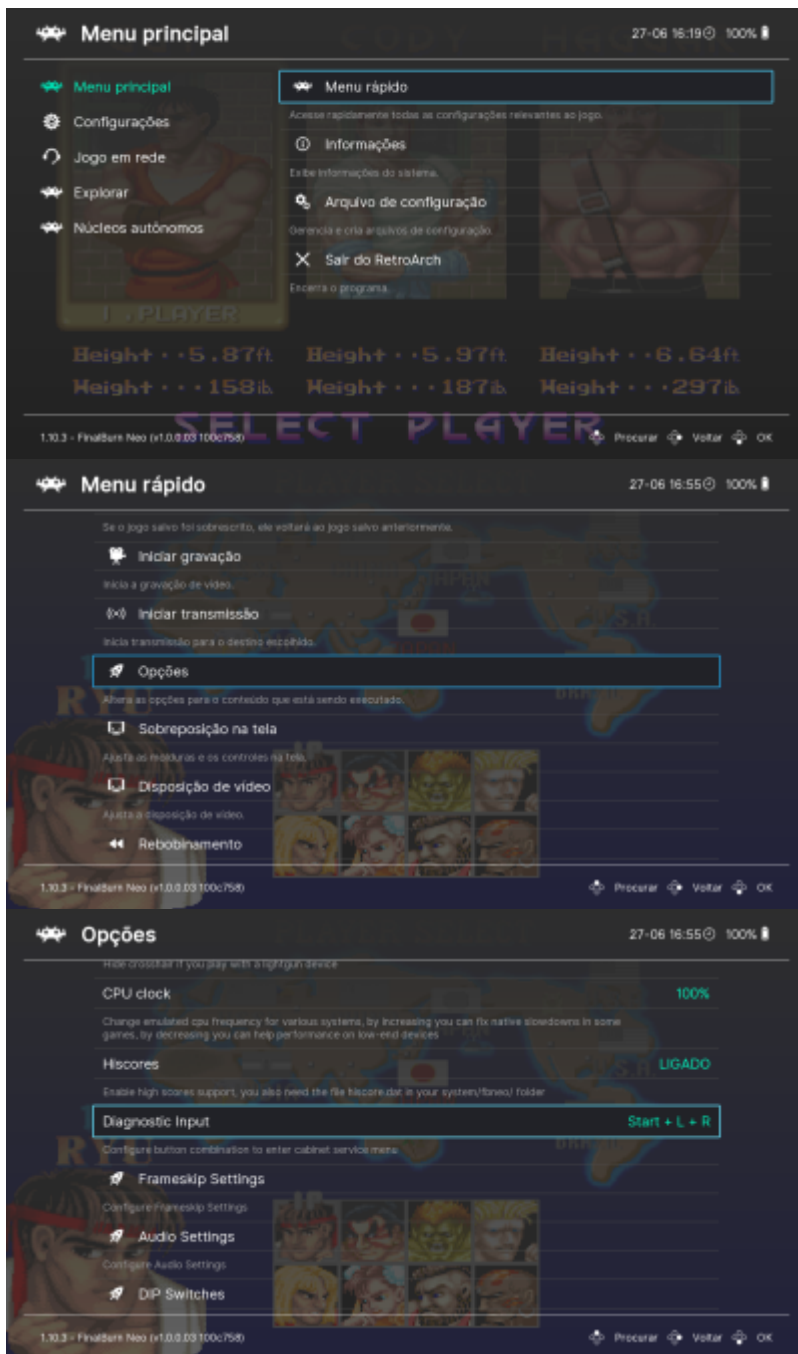
- For the default ( **Fix Me!** factory?) NEOGEO BIOS, the default combo is [START] + [L1] + [R1] (old versions ( **Fix Me!** what older versions? Be specific): Hold [START])
- For the universal BIOS:
 - At the boot screen, the default combo is holding down  +  + 
 - During gameplay, the default combo is holding down [START] + [SELECT] or holding down [START] +  +  + 




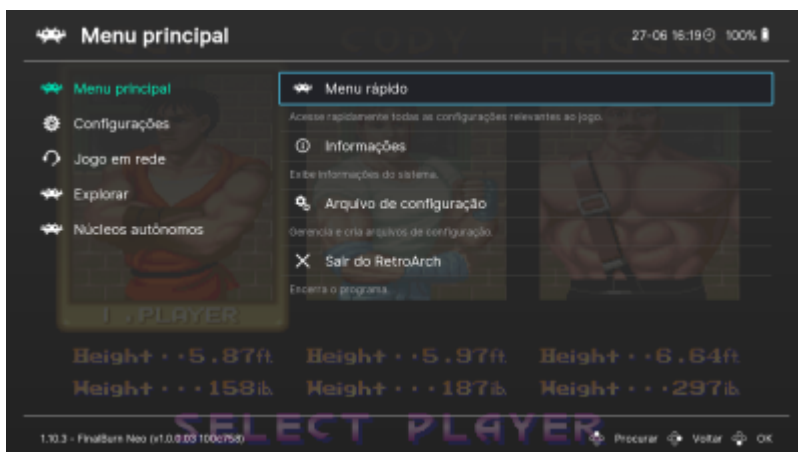


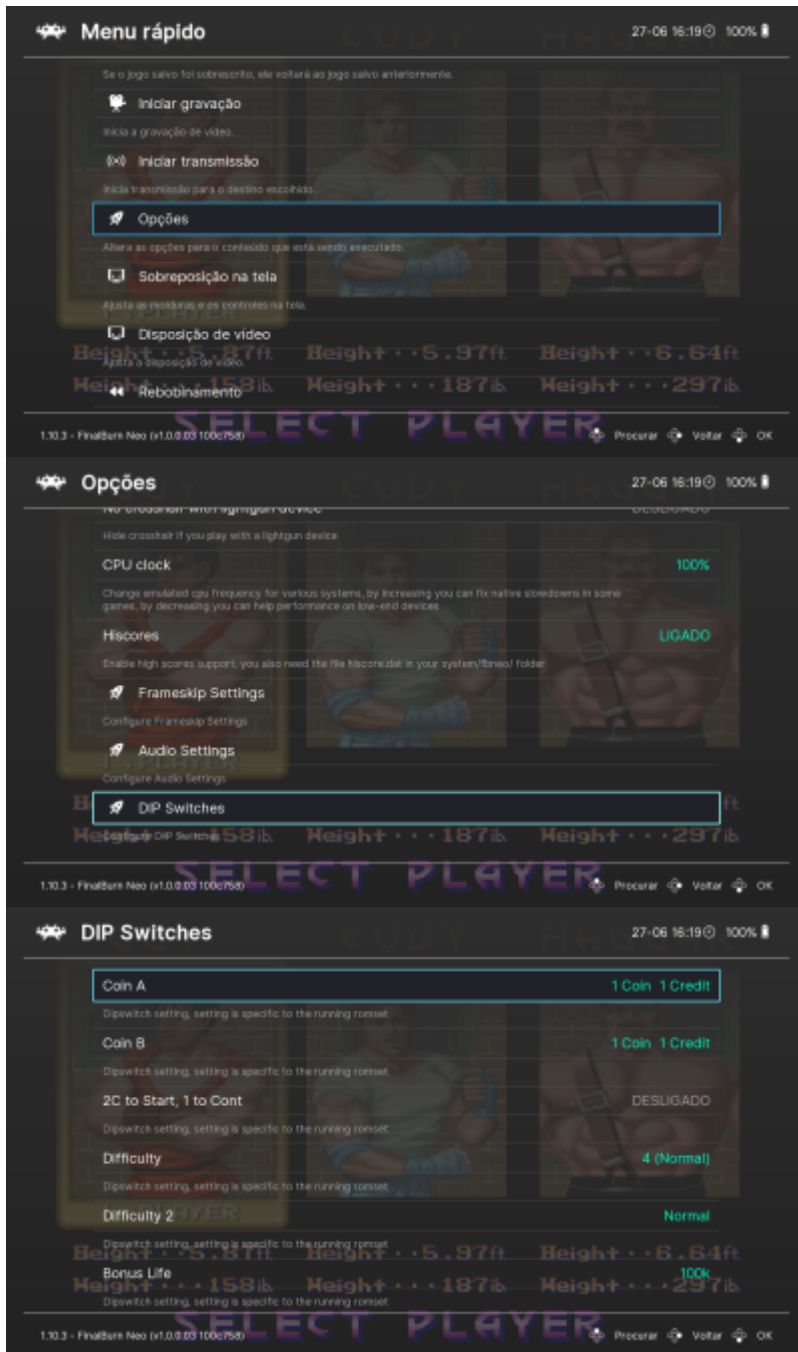
Setup a new shortcut via RetroArch:

[HOTKEY] +  → Quick Access → Options → Diagnostic Input



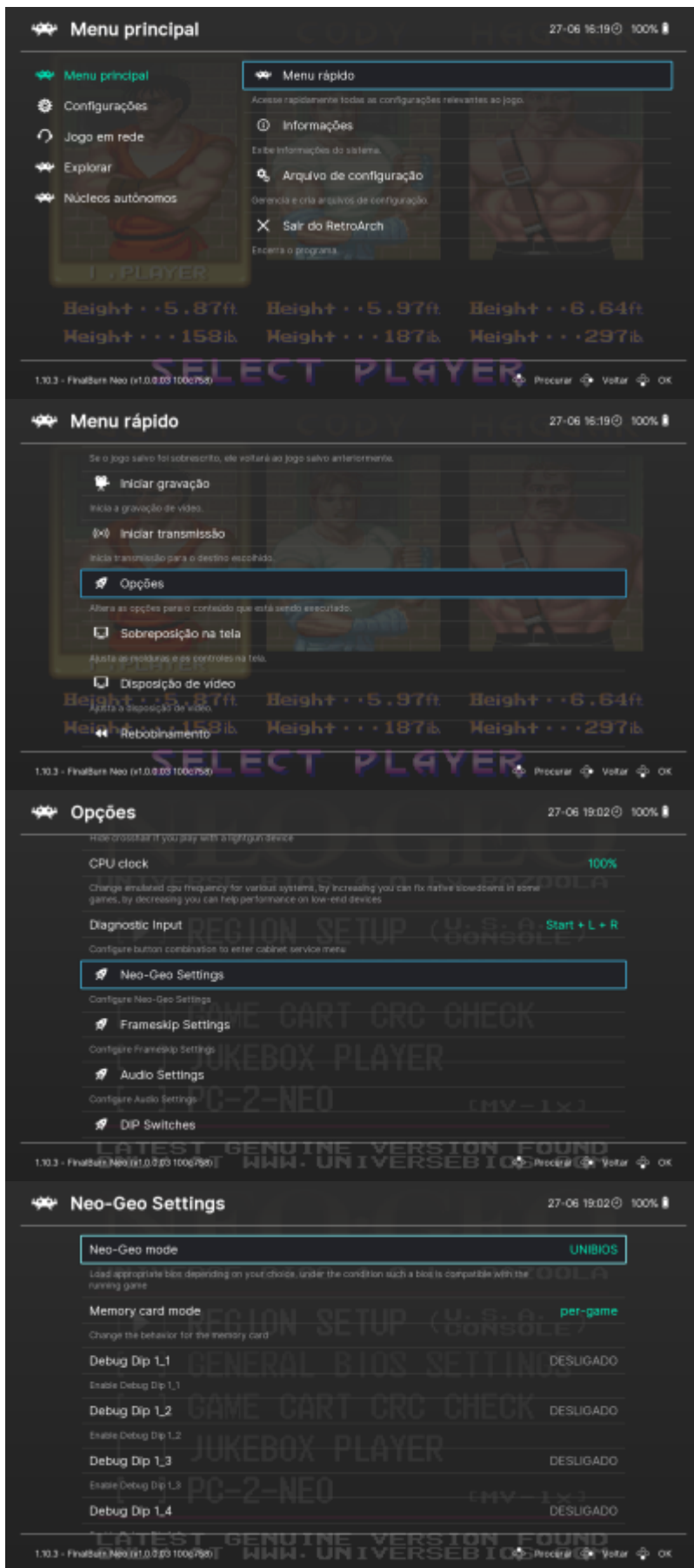
Setup DIP Switches via RetroArch: [HOTKEY] +  → **Quick Access** → **Options** → **Dip Switches**

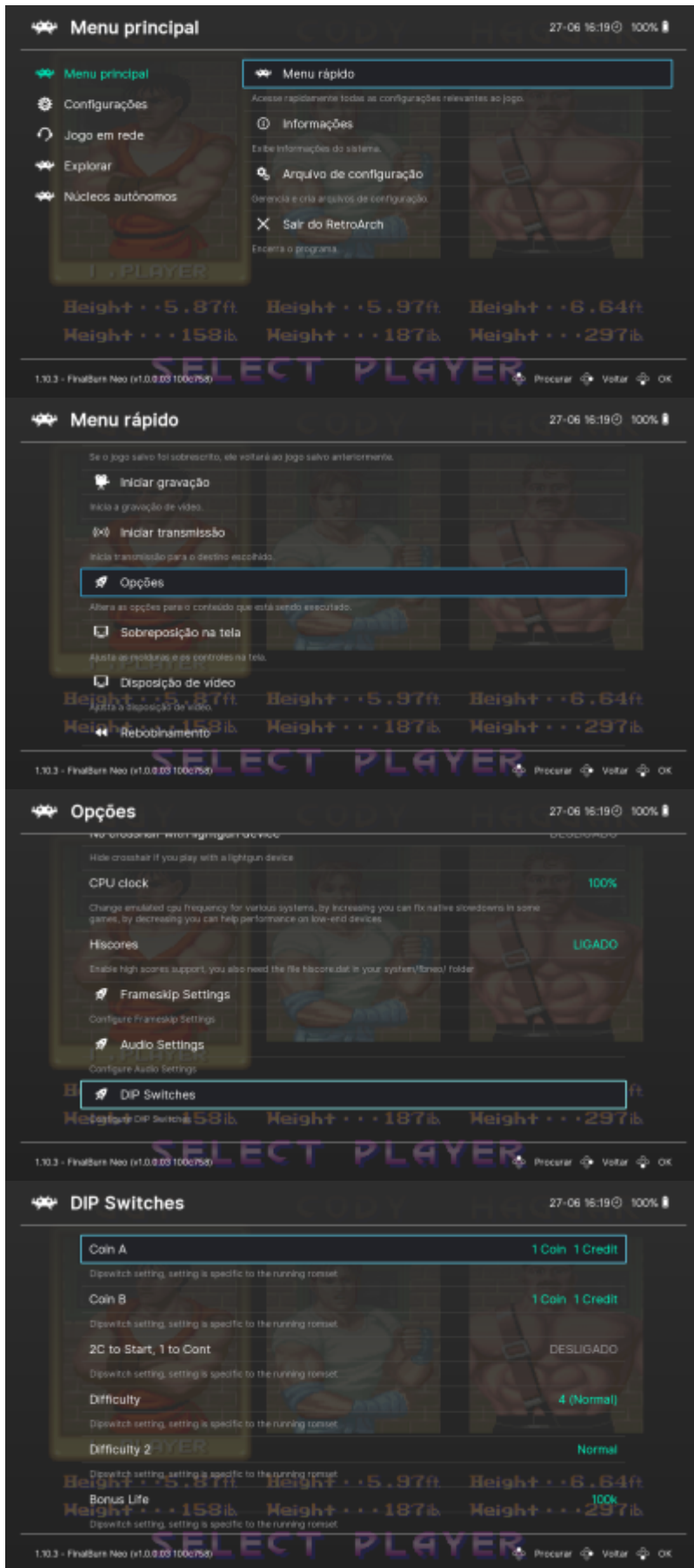


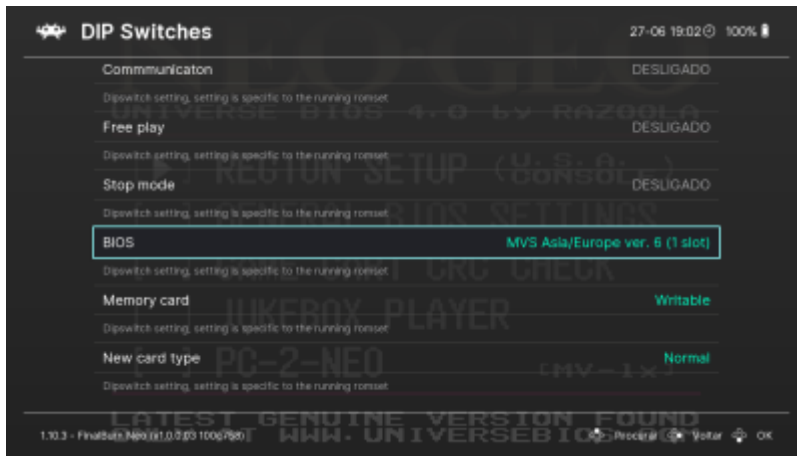


Setup NEO-GEO BIOS via RetroArch:

[HOTKEY] +  → **Quick Access** → **Options** → **SPECIFIC NEO GEO BIOS** → **UNIBIOS** or **SPECIFIC BY DIP SWITCHES** (UNIBIOS)







Not all games have a dip switch menu, and may crash when using these commands.



Here you can change number of players, get more lives, switch for arcade or console mode, setup subtitles, or even active the free mode!

Options available (Defaults)

- Diagnostic Input (shortcut combination):
 - None
 - Hold Start
 - Start + A + B
 - Hold Start + A + B
 - **Start + L + R** (Default)
 - Hold Start + L + R
 - Hold Select
 - Select + A + B
 - Hold Select + A + B
 - Select + L + R
 - Hold Select + L + R
- DIP Switches (settings) - may differ from game to game:
 - Autofire: Off* or On
 - Coin Mode: Mode 1*, Mode 2
 - Coin A / Coin B | Coinage | Coin setting : 4 Coins 3 Credit, 2 Coins 1 Credit, 1 Coin 1 Credit*, 1 Coin 2 Credits, 1 Coin 3 Credits, 1 Coin 4 Credits, 1 Coin 6 Credits, Free to Play
 - 2C to Start, 1 to Continue: Yes or No* | Starting Coin: Normal, 2x
 - Difficulty: 1 (Easiest), 2, 3, 4 (Normal)*, 5, 6, 7, 8 (Hardest)
 - Difficulty 2: Easy, Normal*, Hard, Hardest
 - Bonus Life: 100K*, 200K, 100K and every 200K, None
 - Number of Players: 1, 2*, 3, 4
 - Change Lives: 1, 2*, 3, 4, 5
 - Free to play: Yes or No*
 - Freeze: : Yes or No*



- Flip: Yes or No*
- Demo Sound | Attractive: Yes* or No
- Allow Continue: Yes* or No
- Game Mode: Game* or Test
- Sound Output: Mono or Stereo
- Unknown: Off* or On
- Region: Europe, USA or Japan
- Mode: ARCADE or CONSOLE-AES
- Subtitles: English, Japanese, Korean or Portuguese
- Jukebox

←-

MAME input remap files



Is this heading really required?

MAME machines can be remapped in-game by pressing [L3] + [R3] (old versions: [Tab]) to open the MAME configuration screen, then go to "Input for this game". Press [Enter] or . Inputs can be cleared by double-tapping [Enter]/ instead.

Remap configuration files are stored at `\userdata\saves\mame\mame(version)\cfg\`

Automatic Controller Mapping

Standalone MAME and libretro/MAME have options to automatically map the controls for certain games and controller types. For more information, see [Automatic Controller Layouts](#)

Further Reading

This concludes the introduction to Arcade ROMs. However, should you be interested in learning more, you can read the following articles:

- [RetroPie's excellent documentation on the same thing.](#)
- [Libretro's excellent guide for Arcade emulation for beginners \(explains more what version of MAME/FBN you might want to use\). Evidentially this only pertains to the Libretro versions of those arcade emulators, Batocera also features the standalones which have a different feature set.](#)

Troubleshooting

You can find some emulator-specific troubleshooting information in the respective system page in the [Arcade section](#) on the systems page.

For further troubleshooting, refer to the [generic support pages](#).

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