

# Installation Guide

For those who prefer video guides, here are some excellent ones by ETA Prime: [Turn An Old Cheap PC Into An Emulation Dream Machine!](#) for [x86\\_64 computers](#) (the controller configuration for standalone emulators at 18:27 is outdated, Batocera now handles controller configuration for you. For customizing controls per emulator, [check this page](#)) and [Install Batocera On The Raspberry Pi 4 Full Setup Guide - Retro Gaming Goodness!](#) for [single-board computers](#).



You can check out which devices Batocera supports running on at [the supported devices page!](#)

Generic instructions for most platforms are as follows:

1. Download [Balena Etcher](#) for your operating system.
2. Download an image file from the [download section on the Batocera website](#) that matches the architecture you want to use for Batocera (x86\_64 for most PCs, other devices usually have their own specific image).

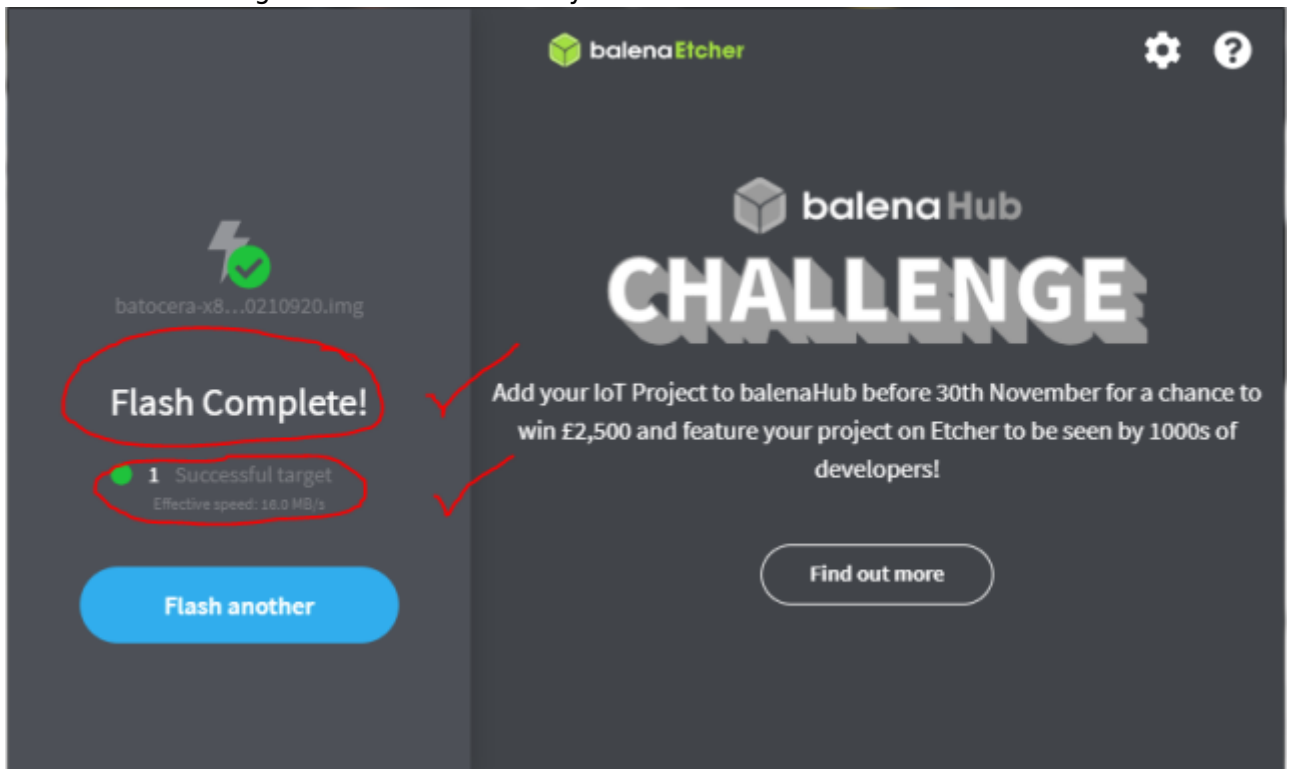


Some browsers like Chrome/Opera/Safari may take the liberty to unzip the file by themselves and poorly rename them. If the file is more than 1 GB, it is already unzipped. If your download fails, use another browser. Yes, Chrome sucks, that's a fact, use another browser.

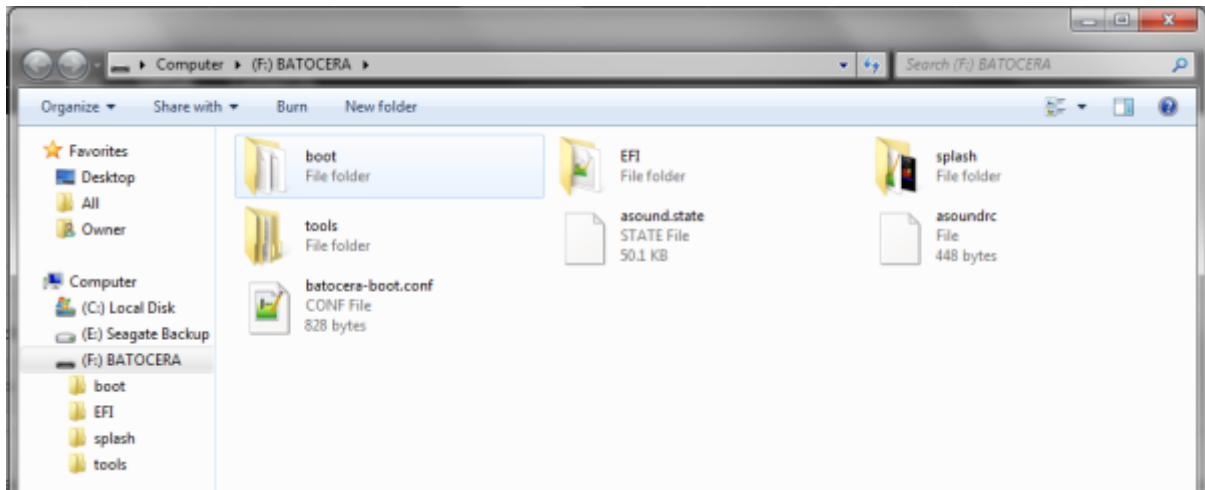
3. Install and run Etcher.
4. Insert the intended USB drive, SD card or hard-drive into your computer. 8 GB is the minimum for v30 and up, 16 GB and above is recommended for full functionality (can't download certain updates with only 8 GB).
5. In Etcher, select the image `batocera - (version) - (arch) - (date) .img.gz` that you just downloaded, and then the target drive like on the following screenshot, and click on Flash! You don't even need to unzip the file, Etcher will take care of it. In case verification fails, try unzipping the file and try again.



6. Etcher may ask for administrator permissions (to unzip the file). Click “Yes”. Upon finishing, check that the image has been successfully flashed and validated.



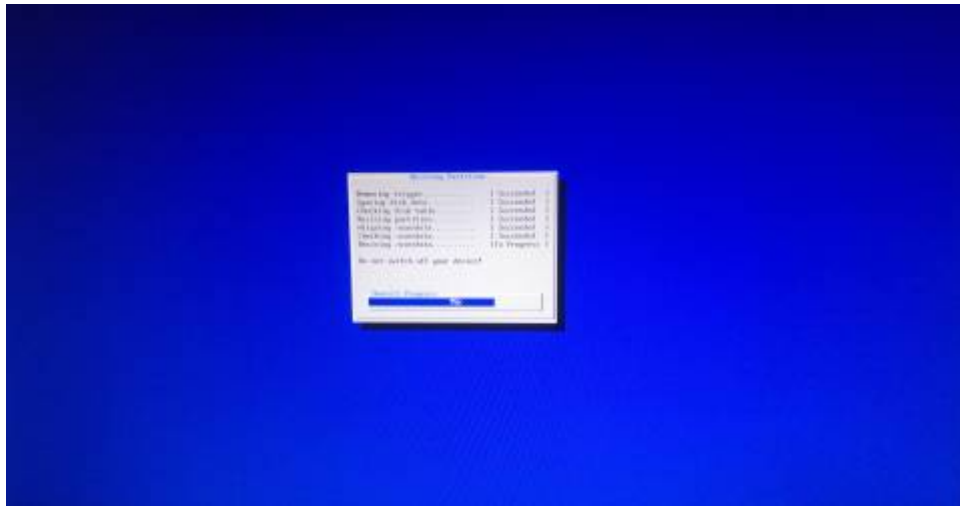
7. Once finished, reinsert your USB drive/SD card/hard-drive and check that it contains a boot folder (files differ depending on architectures).



8. Shut down your computer and insert your USB drive/SD card/hard-drive into the machine you want to boot with Batocera and turn it on.
9. Ensure your device will boot into the USB drive/SD card/hard-drive by default.
  1. Most single board computers will automatically boot to the appropriate USB drive/SD card if only one is inserted into the system.
  2. If on a recent PC using an x86 build, you may need to [disable Secure Boot in your BIOS settings](#).
  3. If on a PC, you may need to enter the boot selection menu with [F10], [F11] or [F12] and select the Batocera drive. UEFI is preferred if available, but not necessary.



10. Boot the Batocera drive and let it automatically expand the partitions (could take a few seconds or a few minutes, depending on your drive size/speed), it will reboot again once done. Don't turn off the device during this step or you might risk data corruption!



11. Enjoy! 😊



Be sure to check out [how to add game ROMs/BIOS files required for certain emulators](#). Batocera's front-end is driven by a modified version of EmulationStation (sometimes referred to as ES). Check out [its overview page](#) to learn how to navigate it!

If using a Nvidia GPU, you may want to [activate the official drivers for it to increase its performance](#), but Batocera can run fine using the default nouveau drivers if that isn't working for your machine.

## BIOS settings (if Batocera fails to boot)

Batocera should boot fine with UEFI, if that option appears you should select that. However, sometimes Legacy (or MBR as it's sometimes referred to) is the only option, depending on the motherboard.

Since there's no consistency between motherboard manufacturers, no step-by-step instructions can be provided. You can refer to [University of Wisconsin Division of Information Technology's knowledge base page](#) for your particular manufacturer's board on how to enter the BIOS settings on various motherboards during boot. Typical keys are [F12], [F11], [F10], [Del] or [End]. Typical keys for entering the boot selection screen are [F12], [F11], [F10], [F9] or [Del]. The manual that came with your motherboard can provide further clues, or you can try exploring all the sub-menus of the BIOS yourself.

To access the BIOS settings from Windows, hold the Shift key while selecting **Restart** and go to **Troubleshoot > Advanced Options: UEFI Firmware Settings**. Alternatively, go to **Settings > Change PC settings > Update and Recovery > Recovery > Advanced Startup: Restart now**, and then upon restarting go to **Troubleshoot > Advanced Options: UEFI Firmware Settings**.

Here are other known aliases BIOS's may use for various settings and what they may need to be set to:

- **Secure boot** a.k.a. secure keys, clear keys, secure key generation, ownership, UEFI with CSM, etc. *Typically in the "security" category, but can also appear in the "boot" or "authentication" category.* You may need to disable secure boot/clear keys, regenerate keys and/or enable the compatibility support module (CSM) to allow other operating systems (such as Batocera) to boot.
- **Legacy boot** a.k.a. allow legacy ROM booting, EFI, MBR, load legacy options, show insecure targets, etc. *Typically in the "boot settings" category, but sometimes also has its own section.* Some motherboards will force any UEFI boots to use Secure Boot with the keys for the original operating system, blocking other operating systems (such as Batocera) from booting. If this is the case for your motherboard, a typical workaround is to use/force Legacy Boot. If neither of these options work, refer to the manufacturer of your motherboard for support.
- **Boot order** a.k.a. boot priority, ROM order, boot options order, UEFI Hard Disk Drive BBS Priorities, etc. *Typically in the "boot" category, but sometimes also has its own section.* Some motherboards may treat UEFI as one entry in boot selection, so you'll need to go to the specific UEFI BBS Priorities menu in the BIOS settings to switch the order to your Batocera drive first. In other cases it's not strictly required, but can make the Batocera drive the 'default' booting option when plugged in; ie. you won't have to manually select the Batocera drive to boot off it of every time.

If you'd like to see a real-world example, check out this external link:

<https://www.tenforums.com/tutorials/85279-enable-disable-secure-boot-windows-10-pc.html>

If attempting to run Batocera on a computer that ordinarily runs Windows, you may have to also disable these settings:

- **Fast boot** a.k.a. quick boot, quick resume, hybrid sleep, etc. *Typically in its own "Windows" category.*
- **Windows 8/8.1/10/11 compatibility** a.k.a. CSM (note no UEFI, yeah), compatibility mode, legacy support (for older systems), etc. *Typically in its own "Windows" category.* This should be disabled for alternative operating systems, though turning this off will mean you'll probably have to switch Windows itself to support legacy booting (should do so automatically).
- **TPM** a.k.a. Windows 11 compatibility (yeah), TPM Security Module 2.0, USB security, etc. *Typically in "security" category.* This is a modern "feature" that can prevent alternative operating systems from booting up. All computers with Windows 11 preinstalled going forward will have this activated by default. Turning this off will likely render Windows 11 and above unbootable until it is switched back on, as it is a "system requirement".

Laptops typically have more restrictions on what they will load compared to tower PC motherboards. Google is your friend here.

If all else fails, refer to [the boot section on the troubleshooting page](#) for more things to try and console output.

## Mac boot order selection

To access the boot selection screen on Mac, hold the [Option] ([Alt] on ASCII keyboards) key while booting. On newer UEFI Macs, you may first need to turn Secure Boot to “No Security” and enable “Allow booting from external media” from the recovery mode (accessed by pressing and holding [CMD] ([Win] on ASCII keyboards)+[R] immediately after you see the Apple logo while booting).



Some keyboards may require you to hold the [Fn] key as well!



If you hold down the [Ctrl] key on this screen, the arrow will change to a circular one;



This indicates that your machine will default to booting from this device. Hold [Ctrl]+[Return] ([Enter] on ASCII keyboards) to confirm.

## Install Batocera from Batocera

Perhaps you'd like to spread the love and install Batocera onto a machine from an already set-up USB stick? Or maybe you just want to install Batocera directly to your hard-drive. Or maybe you want to prank someone. This is for that. There are two things to know first:



This is not the recommended way to use Batocera. Doing this on your SBC or handheld could permanently brick it! Batocera and all of its functions work perfectly fine when booted off a USB/SD card, and speed is nearly identical. If you'd like to use your large hard-drive to store all of your ROMs/BIOS's/saves, refer to [using external storage](#) instead.



When Batocera is installed onto your computer's internal hard-drive this way, all of your data will be overwritten and your computer may fail to boot. If this is your only computer, you could be put into an unrecoverable situation. Again, it is recommended to just use Batocera off a removable storage instead.

This method, when successful, is identical to flashing the Batocera image using Etcher. If you have the expertise and tools required, you should instead connect your drive directly to a running computer and flash Batocera using Etcher, so as to save downloading the image from the servers again.

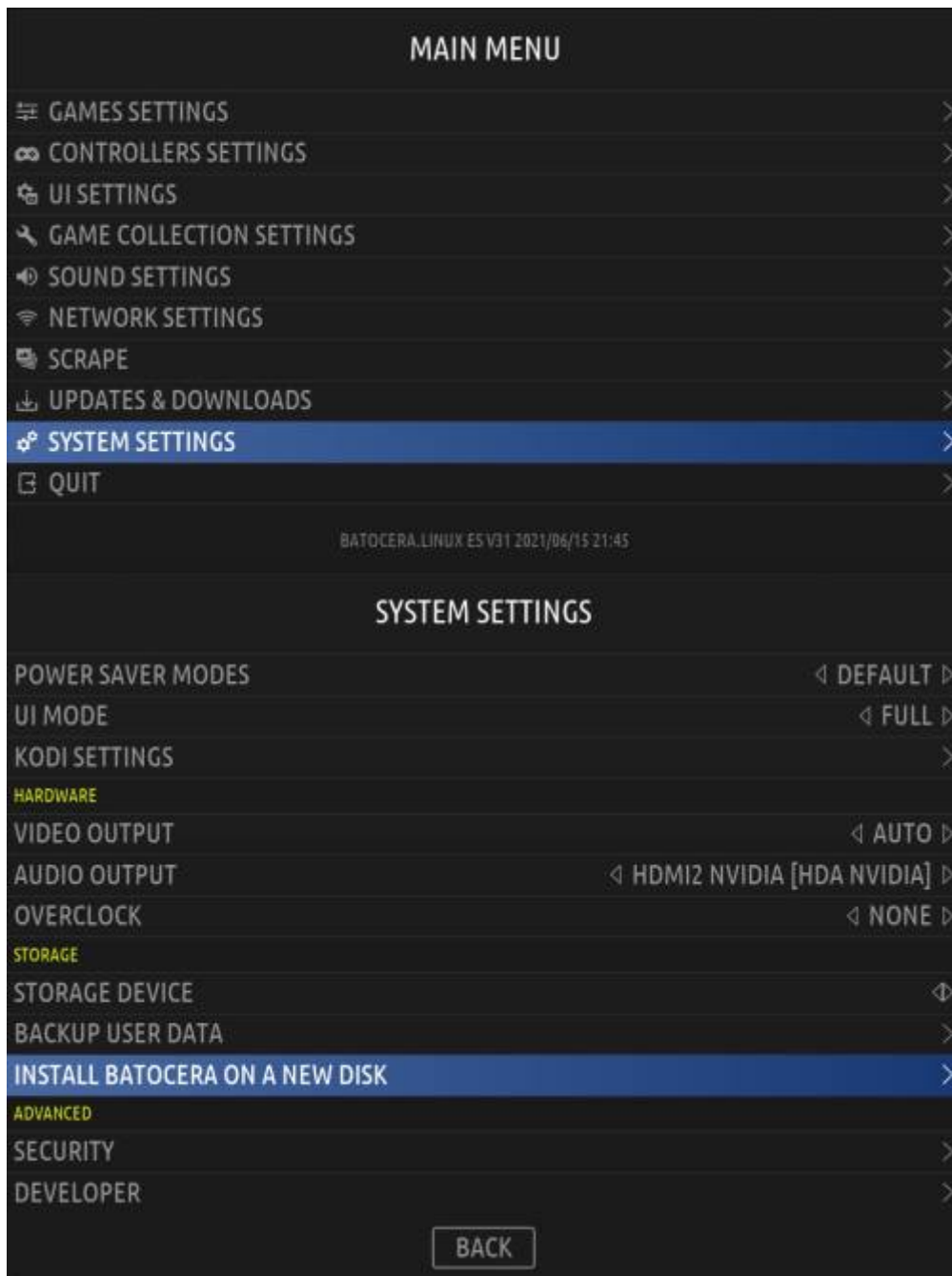


Batocera does not install itself by copying system files over from the USB/SD card like other live distros might. It has to download, extract and install the image as a whole.

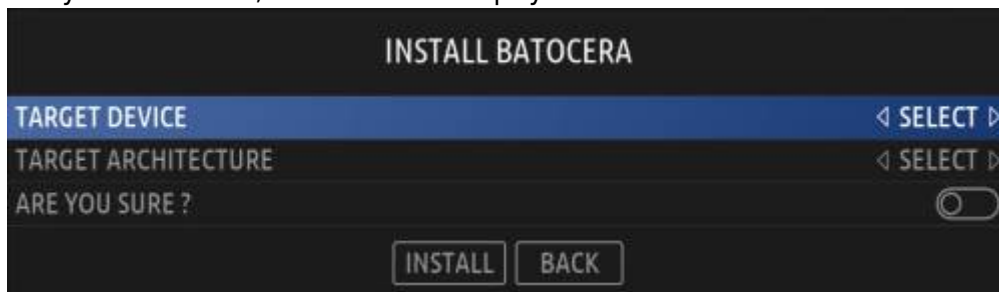
1. Make sure you are connected to the internet and that your USB stick has enough free storage to download the Batocera image.
2. Boot into Batocera and press [START] to open the **Main Menu**.



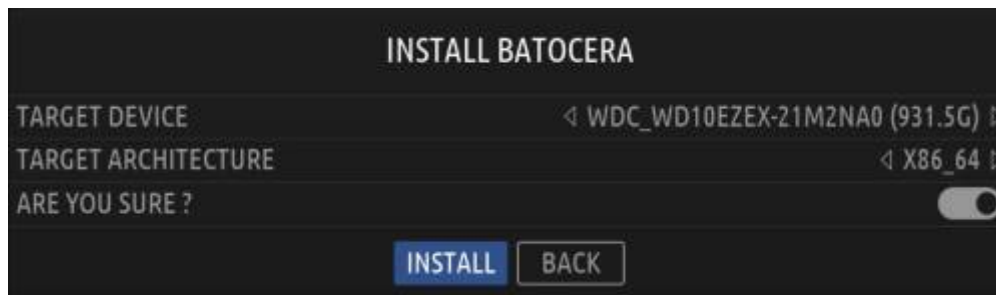
3. Navigate to **SYSTEM SETTINGS > INSTALL BATOCERA ON A NEW DISK**.



4. Select the destination you'd like to install Batocera onto. Make sure it's not the same drive you're currently booted off of, as that will corrupt your USB stick!



- 5. Check that you've selected the right drive. This is very easy to mess up and its actions are irreversible.
- 6. Take a deep breath and check a third time. This is really important.
- 7. Select your target architecture. It should be the same as what you selected on the [download page](#) when you first installed to your USB (most of the time, this will be X86\_64).
- 8. Make sure that you're sure about this. Your menu should look similar to this:



9. Press **INSTALL**.

Depending on your internet connection, it may take a while to download and install. You cannot use your Batocera system while this is happening.



If you need to install a specific version of Batocera onto your internal drive, and you have no way of just plugging that drive into another computer to flash the version you want onto it, you can always install the latest Batocera and [manually downgrade](#).

## Batocera no boot from internal hard-drive!

Welp you were warned. A few things you can try:

- Configure your motherboard's BIOS settings to allow loading the `bootx64.efi` file. This may involve going into a specific EFI boot-order submenu. As above, every motherboard is unique in this regard.
- [Manually install Batocera](#) onto an already existing bootable EFI partition.

If you're still having trouble, ensure you've also tried [the above troubleshooting](#) section or [the boot section on the troubleshooting page](#). If it still fails, revert to booting from USB.

From:

<https://wiki.batocera.org/> - **Batocera.linux - Wiki**

Permanent link:

[https://wiki.batocera.org/install\\_batocera?rev=1652902210](https://wiki.batocera.org/install_batocera?rev=1652902210)

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