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# Fix for game controllers on Big Sur!!!

## TL;DR

Valve's driver is getting automatically blocked, so we need to boot into Recovery mode and manually accept it. To do that, we'll add their Apple Developer Team ID to a list of allowed developers. This is very targeted and extremely safe, the opposite of doing something like disabling System Integrity Protection for the whole computer.

- Boot into Recovery mode (hold ⌘-R at boot).
- Open Terminal (Utilities -> Terminal).
- Type

```
spctl kext-consent add MXGJJ98X76
```

and press return.

- Type

```
kmutil trigger-panic-medic --volume-root "/Volumes/Macintosh HD"
```

(replace "Macintosh HD" with whatever your drive is named; press Tab at the end of typing "/Volumes/" to get a hint).

- Reboot.

## The Details

This nerd sniped me for a few hours and I'm really disappointed in Valve. This is 100% on them. Apple has very clearly signaled they don't care about Mac games, but this is making it very apparent Valve doesn't, either. Personally, I'm moving most of my gaming to PS4/5. End of venting.

The problem is that Valve's SteamInput kernel extensions, which they use to standardize controls across games, aren't getting loaded under Big Sur. The reason we're told to install an "update" from 2018 is because Valve is using the answer to the question "are my extensions running?" as if it is the answer to the question "have you installed the game controller extensions?". So it just puts you in a continuous loop of installing the extensions, but it's completely irrelevant.

Why aren't the extensions loading? The OS thinks they should work. If we run

```
kmutil print-diagnostics -p /Library/Extensions/SteamInput.kext
```

we get

```
Kext at: /Library/Extensions/SteamInput.kext appears valid and loadable.
```

However, if we try to load it with

```
sudo kmutil load -p /Library/Extensions/SteamInput.kext
```

we get the error

```
Extension with identifiers com.valvesoftware.SteamInput-DS4v1,com.valvesoftware.SteamInput not approved to load. Please approve using System Preferences.
```

And when we go to System Preferences, it isn't in the list for approval. I found out that is because it is getting automatically blocked, which we can see if we reset the extension approvals. I'm not sure why, I didn't pour over the logs. Most of the other examples I have of blocked extensions are 32-bit ones that can't run. It's possible Valve is doing something dumb; there's a careless bug in their installer's post-install script that tries to modify the extremely-read-only system partition, so maybe the driver is doing something that deserves an automatic ban. Or maybe it's an OS bug that Valve never bothered to raise with Apple (it is definitely a bug that kmutil reports it as loadable when it isn't).

Luckily, there is a way to automatically accept Valve's extensions. Apple has a tool that allows you to add Apple Developer Team IDs to an accept list. But to prevent abuse, you can only make changes to the list when you're in Recovery mode. First we'll run

```
codesign --display --verbose /Library/Extensions/SteamInput.kext
```

to get Valve's Team ID, which is `MXGJJ98X76`. Now we can reboot and add it to the list. When we do, any kernel extension that is signed with one of Valve's certificates that is installed will be allowed to run. So the security risk we are creating by doing this is that a hacker gets you to download and install a kernel extension that they've signed with a stolen Valve cert, which... ͡(ಠ\_ಠ) ͡/ You've already lost at "download and install". On to the fix!

- Boot into Recovery mode (hold ⌘-R at boot).
- Open the Terminal (Utilities -> Terminal).
- Type

```
spctl kext-consent add MXGJJ98X76
```

and press return. Now any extension from Valve will run automatically with no consent required. Except, Apple checks the naughty (blocked) list before it checks the nice (accept) list and Valve's extensions are already on the naughty list, so we need to reset that.

- Type

```
kmutil trigger-panic-medic --volume-root "/Volumes/Macintosh HD"
```

The "Macintosh HD" part is the default name of your boot drive, but you can change it. You can hit Tab after typing "Mac" and it should auto-complete. If it doesn't, backspace to just "/Volumes/" and hit Tab a couple of times to see what the options are.

This also can only be run from Recovery mode. It is typically used when an extension is causing your computer to crash ("panic") immediately and puts you in a reboot loop. This resets that status of all third party extensions. You'll get a warning from the OS about a third party extension causing problems when you login and you'll have to re-approve all of your third party extensions, but otherwise it is completely harmless.

- Reboot out of Recovery mode.

That's it. You can test this in the Terminal by running the command

```
sudo kmutil load -p /Library/Extensions/SteamInput.kext
```

It should return nothing (success!), but it might say you have to reboot before the extension can be loaded. Or you can just go play something like Hades again.

Merry Christmas!

Edit 1: Made "trigger-panic-medic" mandatory per Charmander's feedback.

Last edited by florean; Dec 25, 2020 @ 9:37am