

# Kernel: Guix and Logitech

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- [Creating and using a custom Linux kernel on Guix System](#) [2]

Guix is, at its core, a source based distribution with substitutes, and as such building packages from their source code is an expected part of regular package installations and upgrades. Given this starting point, it makes sense that efforts are made to reduce the amount of time spent compiling packages, and recent changes and upgrades to the building and distribution of substitutes continues to be a topic of discussion within Guix.

One of the packages which I prefer to not build myself is the Linux-Libre kernel. The kernel, while not requiring an overabundance of RAM to build, does take a very long time on my build machine (which my children argue is actually their Kodi computer), and I will often delay reconfiguring my laptop while I want for a substitute to be prepared by the official build farm. The official kernel configuration, as is the case with many GNU/Linux distributions, errs on the side of inclusiveness, and this is really what causes the build to take such a long time when I build the package for myself.

The Linux kernel, however, can also just be described as a package installed on my machine, and as such can be customized just like any other package. The procedure is a little bit different, although this is primarily due to the nature of how the package definition is written.

- [Improved Logitech wireless device support in kernel 5.2](#) [3]

The just released 5.2-rc1 kernel includes improved support for Logitech wireless keyboards and mice. Until now we were relying on the generic HID keyboard and mouse emulation for 27 MHz and non-unifying 2.4 GHz wireless receivers.

Starting with the 5.2 kernel instead we actually look at the devices behind the receiver. This

allows us to provide battery monitoring support and to have per device quirks, like device specific HID-code to evdev-code mappings where necessary. Until now device specific quirks were not possible because the receivers have a generic product-id which is the same independent of the device behind the receiver.

The per device key-mapping is especially important for 27MHz wireless devices, these use the same HID-code for Fn + F1 to Fn + F12 for all devices, but the markings on the keys differ per model. So far it was impossible for Linux to get the mapping for this right, but now that we have per device product-ids for the devices behind the receiver we can finally fix this. As is the case with other devices with vendor specific mappings, the actual mapping is done in userspace through hwdb.



#### [The Better Logitech Wireless Device Support In The Linux 5.2 Kernel](#) [4]

Red Hat's Hans de Goede who was involved in this latest Logitech support improvement work for the Linux 5.2 kernel has now blogged to share additional background information on the effort.

[Linux](#)

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**Source URL:** <http://www.tuxmachines.org/node/124100>

#### **Links:**

[1] <http://www.tuxmachines.org/taxonomy/term/63>

[2] <https://www.gnu.org/software/guix/blog/2019/creating-and-using-a-custom-linux-kernel-on-guix-system/>

[3] <https://hansdegoede.livejournal.com/21731.html>

[4] [https://www.phoronix.com/scan.php?page=news\\_item&px=Better-Logitech-Linux-5.2](https://www.phoronix.com/scan.php?page=news_item&px=Better-Logitech-Linux-5.2)