Chromebooks become a valid cheap computing alternative for productivity

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Typically you would consider a device around $400-600 to be a budget purchase when it comes to laptops, but have you ever considered going cheaper? A recent solution to the cheap-but-functional laptop need that I've personally experienced actually involves Chromebooks. I know what you'll tell me next: Chromebooks are very limited and require the internet to be useful. This is mostly true, if you choose to run Chrome OS as it is. There are essentially two options here, and it can vary depending on your Chromebook model. The first option is to install Linux in a self-contained environment within Chrome OS, referred to as crouton, the "Chromium OS Universal Chroot Environment." This is in some ways the simpler method, and is as easy as following a list of instructions, which is explained in a wonderful guide on the project's GitHub page. The other option is to install a custom BIOS such as SeaBIOS and then install a Linux distribution from a flash drive. Yes, this is a little more of a time commitment and often will require you to open up the underside of your Chromebook briefly, but it can be worth it depending on your use case.

I figure at this point in time it would be good to point out a few potential use cases for a full Linux installation. One of the downsides to using ChromeOS is being sandboxed in essentially a giant version of the Chrome browser, and while it makes for a generally smooth experience, it's also a rather limited experience. For example, ChromeOS is really not a development platform, meaning if you want to do even basic Python or other language development, you're generally out of luck. In response to this, you could either try to find an online integrated development environment (IDE) or buy a whole new laptop, but why do that when you can just run a full Linux environment? The answer is that you wouldn't, because running an OS like Ubuntu

on your existing laptop will save you money and allow you to develop offline, which is not a word you would often hear associated with a usable Chromebook. Of course, for all the productivity benefits that are being suggested, there are many entertainment and social application benefits. One of the first things I was able to do on my Chromebook running Linux was install the Spotify desktop client, which provides significantly more options

Photo by David Sobel

than the web client. Another benefit I had was being able to install Pidgin, which is a great messenger program that allows you to connect multiple social media chat accounts, including Facebook messenger. For the gamer in me, I was able to install emulators for a multitude of game systems. With these examples in mind, it should be clear what sorts of benefits you can gain by ditching ChromeOS. So what reason should you have to run Linux alongside versus replacing ChromeOS as a whole?

The simplest reason to use something like crouton is to avoid opening up

your Chromebook and modifying the system, simply adding the basic functionality of a full Linux desktop right there in Chrome OS (to be reached by a keyboard shortcut). That said, I have encountered some problems in terms of graphics acceleration and media playback using crouton, so your mileage may vary with it. Another thing of note with crouton is that by default it will install Ubuntu 12.04, which is notably old at this point in time. With this in
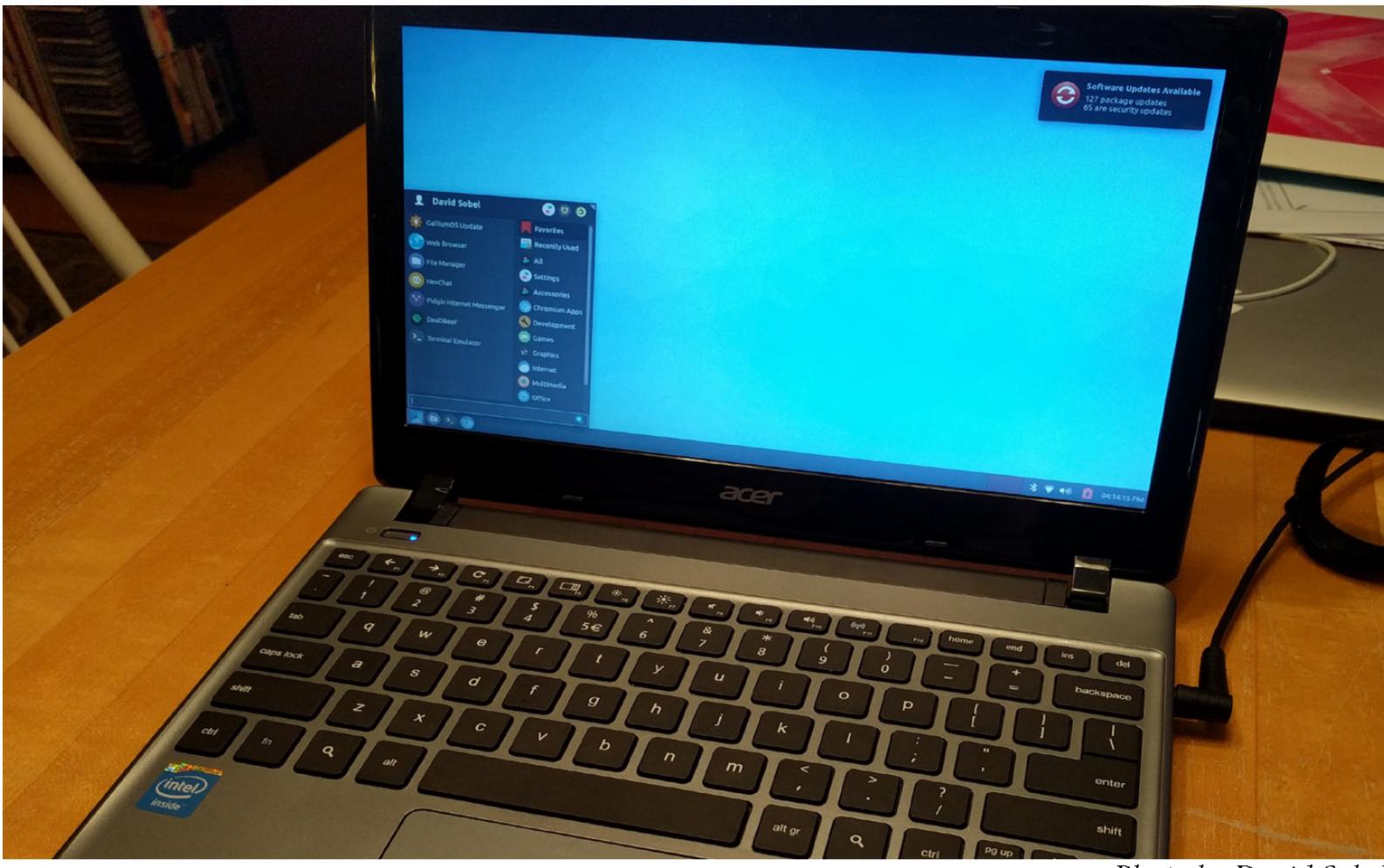
mind - as the guide will tell you - it's possible to change which Linux distribution and version is installed with crouton. Essentially, if your goal is to simply gain the freedom of running Linux and its basic features and easily remove it if need be, then give crouton a try. However, if your goal is to take full advantage of all Linux has to offer, I might suggest the modification method, which I will detail a few options for.

From experience, if you want a bit more consistent and stable functionality and have a bit more technical know-how, you should replace Chrome OS entirely. Chrome

OS, as it happens, is Linux-based, but the amount of it that the user sees is very minor and you could hardly call the whole thing a Linux distribution. That said, there are a few options here in terms of distributions. The first option is to opt for the normal Linux experience and run an OS like Ubuntu or, as I use, GalliumOS. Ubuntu is a well-known Linux distribution, with an amazing amount of hardware support right "out-of-the-box." GalliumOS, which runs on top of the same system as Ubuntu (Debian), is noted as being highly optimized for Chromebooks and, from my usage, has been rather consistent with that statement. Another, notably different, option is Remix OS, which is a desktop-compatible version of Android that, as expected, allows you to run Android apps natively on your device yet also have a full desktop experience. The last time I tried the OS, it was in beta, but at this point it's apparently ready for prime time, so perhaps it'll be in your future. In the end, though, it comes down to your personal preference, because most features will generally work with either crouton or a full install, but mileage may vary.

A few words of warning: if you care about your warranty, the mod method may not be for you. In this case, go with crouton. If you don't care, then go with the full install, because I've found that after replacing ChromeOS I have had no reason to go back. It's also a good idea to have a Chromebook model with 4GB of RAM and at least an Intel Celeron, such as the Toshiba Chromebook 2, in order to get solid performance. For more information on the installation methods involved, either Google them to find out for yourself or ask someone else to help you out, because there's nothing better than getting the most out of your cheap device. If for some reason you mess up, it's a simple process to restore your Chromebook back to its factory state. So, what do you have to lose?