The Foundation and the FreeBSD Desktop

BY ANNE DICKISON

The Desktop experience can be formative. I got my first PC in 1990 as an 8th Grade graduation gift. (Thanks Dad!) It helped instill my interest in computers and it got me through high school. I used it mostly for playing Zork, Jeopardy and, of course, writing papers on Word Perfect. The interface was rather clunky, but for the purposes of a small-town high school student in the 90s, it worked quite well. Once college came about, a new machine came my way and a GUI that made things work so much better. Using a computer became part of everyday life. In fact, one of the selling points of my university was that every dorm had its own desktop. Fast forward 20+ years, and the standards for a usable desktop are quite high. Intuitive, fast, pretty graphics, and speedy wi-fi are all expected. FreeBSD's desktop experience over the years has had its ups and downs. Twenty or so years ago, FreeBSD and Linux were mostly neck and neck in terms of desktop usability. Unfortunately, as time went on, FreeBSD did fall behind. The desktop experience became a lower priority. However, catch up eventually ensued and within the last 10 or so years, focusing on the desktop has increasingly become of greater importance for many members in the community. To help understand more about the Foundation's work on the desktop experience, we sat down with Ed Maste, Senior Director of Technology.

Unsurprisingly, one question the Foundation often gets is where the desktop experience falls in our list of priorities. The answer: Well, it varies. Because the Foundation's main goal is to support the Project in technical areas that aren't being fully addressed by the community, the desktop sponsored work ebbs and flows. When work stagnated about 10 years ago and the Project began to fall behind in terms of hardware support, the Foundation funded Kostik Belousov to work on Intel Graphics Drivers. More recently though, the Project has moved to using the Linux Kernel Interface (KPI) to help keep drivers up to date. The Foundation funded Bjorn Zeeb to work on the wireless side, and about 2 years ago, it funded Emmanual Vadot to work on graphics drivers.

These days, the FreeBSD community has continued the graphics work via the Linux KPI, while the Foundation is funding Bjorn to do the same on the wireless side. The net result is that generally, you can take a contemporary x86 laptop or desktop system, and the graphics and wireless will just work. The hope with this method is that as each, new generation

of hardware comes out, we'll be able to take the latest upstream drivers and just use them without any sort of significant rework to make them work on FreeBSD. Ed notes that while using the Linux KPI might not be the most popular solution, it does seem to be the most developer-efficient way to keep the drivers up to date.

"In an ideal world, with unlimited resources and an unlimited supply of qualified technical people, I would just have developers create bespoke FreeBSD drivers. While the current method may have its detractors, the result is that FreeBSD has a working driver that is performant and featureful, that should allow us to basically remain up to date."

Speaking of up to date, Ed was quick to mention one caveat when it comes to wireless drivers. While the wi-fi does work out of the box on many desktop systems, the speed is sometimes lacking in comparison to contemporary wi-fi standards. That doesn't mean you can't use FreeBSD as your daily desktop though. It's fast enough for video, conference calls, and web browsing. Ed mentioned how Bjorn's work has made the wi-fi on his Framework laptop stable and reliable. But when it comes to downloading large files, you will notice slower speeds. The Foundation has extended Bjorn's contract into 2023 and he is working on those standards now with the goal of having it available in FreeBSD 14.0, if not 13.2.

However, as mentioned above, FreeBSD can be used as your daily driver, an aspect that is very important to Ed and the Foundation. One of the reasons the Foundation has chosen to support the wi-fi efforts as of late is that there's a huge amount of value in being able to use the operating system that you're developing on as your desktop machine. In fact, Ed sees that as being connected to the Project's long-term viability and the ability to bring on new users.

"Let's take someone who is in university, I think it really is the case that FreeBSD is the best operating system for someone who is interested in learning about operating system internals. Someone who wants to become an operating system developer or wants to explore and learn about operating systems. FreeBSD is advanced enough that it can do what you need, but you can still find a niche and make your own impact. But, without a user-friendly desktop experience, it's hard to make the argument that someone should try FreeBSD if they're already familiar with Linux on their laptop."

Thanks to great work from members of the community along with Foundation supported efforts in key areas, the FreeBSD desktop experience is on a positive trajectory. As we head into 2023, Ed says the Foundation plans to continue to support Bjorn's wi-fi work and take another look at the installer to help make sure that you're able to get a usable graphical desktop environment--out of the box. Of course, that all may change as 2023 progresses, but ultimately, Ed and his team are dedicated to working with other community members to produce a modern and user-friendly desktop experience.

ANNE DICKISON joined the Foundation in 2015 and brings over 20 years experience in technology-focused marketing and communications. Specifically, her work as the Marketing Director and then Co-Executive Director of the USENIX Association helped instill her commitment to spreading the word about the importance of free and open source technologies.