

# How the Foundation's Laptop Support & Usability Project Came Together



BY DEB GOODKIN

For years, we kept hearing the same thing from users: yes, FreeBSD can run on a laptop, but getting there was not always easy. People could make it work, but it often took more troubleshooting, more patience, and more time than it should have. For students, new users, and developers trying to use FreeBSD as part of their day-to-day work, that friction made a difference.

This was not just occasional feedback. We saw it come up in mailing lists, forums, blog posts, social media, and direct conversations with users. We heard it from commercial users too, especially those who wanted their developers to be able to build products on FreeBSD while also using FreeBSD on their own systems. We saw the same thing at the Foundation, with co-op students and interns trying to install FreeBSD on laptops and running into similar problems.

Over time, it became clear this was more than a recurring complaint. It was one of the things making FreeBSD harder for new users to adopt and harder for the community to grow.

## Recognizing the Need

Once we stepped back and looked at the issue more broadly, it was clear that laptop support was an area where the Foundation could make a real difference. Better laptop support would not just improve the experience for current users. It could help students, developers, and new users get started more easily and make FreeBSD a more practical option for everyday use.

That matters because the systems people use every day often shape whether they stick with a platform, recommend it to others, or eventually contribute back to it.

Like many Foundation efforts, this did not start as one large, fully funded project. We started where we could and focused first on the problems that were causing the most frustration. Wireless was one of the clearest examples. Ask almost anyone what they most want fixed on a laptop, and wireless is near the top of the list. That made it one of the first areas we funded.

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## Turning a Broad Goal into Something More Concrete

Around the same time, the Foundation board was talking through long-term strategic goals and the kinds of work that could make the biggest difference for FreeBSD. One of those goals was increasing adoption.

That is a broad goal, and it only becomes useful when you turn it into something more concrete. One way we framed it was by asking a simple question: how do we make FreeBSD easier for a college student to use as a daily driver?

That gave us a much more practical way to think about the work. It also helped shape how we thought about laptop support. This was not just about fixing a few isolated technical issues. It was about improving the overall experience enough that FreeBSD would feel more usable on modern laptop hardware.


## Building the Project

As we started scoping the work more fully, it became clear that the need was much greater than we could fund all at once. Early estimates put the cost at more than one million dollars. That was beyond what the Foundation could take on at the time.

Even so, we knew the work mattered, so we kept moving it forward where we could. We increased funding, brought on a userland developer, and added resources as they became available.

Then we got an email that changed the picture. It was short and straightforward. Someone wrote to say they loved FreeBSD, had been using it for more than 25 years, and wanted to help fund work to address some of the limitations they had encountered. That support became an important factor in allowing the project to move forward in a more substantial way.

The Laptop Support & Usability Project officially started in the fourth quarter of 2024.



How do we make FreeBSD easier for a college student to use as a daily driver?

## What the Project Covers

From the beginning, the project focused on the areas that most directly affect the laptop experience: Wi-Fi, graphics, audio, the installer, and sleep states. Those are the things that make the difference between a system that technically runs and one that works well enough to use every day.

With 2025 as the project's first full year, the Foundation committed more than \$750,000 to the work. That investment led to real progress.

In Wi-Fi, 2025 brought support for Wi-Fi 4 and 5 on key hardware, along with the start of Wi-Fi 6 work. Wi-Fi 4 and 5 drivers for Intel and Realtek are available in FreeBSD 15.0, with additional Realtek and Mediatek support still in progress.

Graphics support also moved ahead in important ways. Graphics drivers were upgraded to Linux 6.10, which is available in 15.0. Linux 6.11 is awaiting final review, and work on 6.12 is underway.

Audio saw important improvements in 15.0 as well. Users now have access to the new `sndctl(8)` and `mididump(1)` utilities, along with bug fixes, broader laptop support, and an initial effort to improve automatic sound redirection for HDA sound cards.

The installer improved in ways that matter to laptop users, too. In FreeBSD 15.0, the installer now supports downloading and installing firmware packages after the base system installation is complete. In 15.1, users can also install the KDE graphical desktop environment during installation.

Sleep states remain another major part of the project. Work on modern standby, or S0i3, is part of 15.1, while hibernate, or S4, remains part of the broader effort. That work also includes related areas, such as transitioning from modern standby to hibernate, handling disk encryption during hibernate, and improving sleep-state behavior for virtual machines.

The work continues in 2026 at a similar level of investment and scope. Current areas of focus include sleep states, graphics drivers up to Linux 6.18, Wi-Fi 6 support, USB4 and Thunderbolt support, HDMI improvements, UVC webcam support, and Bluetooth improvements.

A broader testing effort is also part of the work in 2026. Making individual components work is one thing. Testing how those pieces work together across a range of real hardware is another. That kind of testing matters if the project is going to be genuinely useful in practice.


## What Happens Behind the Scenes

One thing that can be easy to miss with a project like this is how much has to happen behind the scenes before the development work can really move forward. There needs to be a plan. Someone has to help manage the effort and keep it moving. We have to find developers with the right skills who are available and willing to do the work. As a nonprofit, we are always balancing what is needed against limited funding.

That is true for this project and for Foundation-funded work more broadly.

When we decide whether to fund a project, we look at a few basic things. Will it be impactful and beneficial to FreeBSD? Will it be useful and accessible to users? Does it need the kind of infrastructure and support the Foundation can provide? Do we have the funding to take it on responsibly?

That same reality applies to community proposals. Some move forward, and some do not. That is not because we do not care or are not interested. We know people put a great deal of time and thought into those proposals. With limited funding, we must ensure the work fits the bigger picture and has a meaningful impact.



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## Why This Work Matters

The Foundation's budget reflects these priorities. More than 62 percent of the current budget is allocated to software development that goes directly to improving FreeBSD. Another 17 percent supports advocacy and education, including outreach, storytelling, and community education. The Foundation also continues to invest in infrastructure, including the systems and hardware needed to support the Project over time.

The Laptop Support & Usability Project is not just about laptops. It is about making FreeBSD more usable, more approachable, and more practical for the kinds of day-to-day use cases that help bring people into the community and keep them there.

It is also a good example of how this kind of work usually comes together. The need is clear, the community keeps raising it, and over time, the funding, planning, and structure come together to make real progress possible.

At its core, this project reflects what is possible when the community and the Foundation work together. The community kept raising the issues, sharing real-world experiences, testing what worked and what did not, and helping clarify where the need was greatest. The Foundation was able to turn that input into a funded, organized effort and help move the work forward. That kind of progress does not happen in isolation. It happens when community members, developers, donors, testers, and the Foundation all play a role in building something better together.

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