

Foundation Spotlight

By Deb Goodkin

I love living here in Boulder, Colorado. We're based at the foothills of the Rocky Mountains, and every day (ok, almost every day) there are many opportunities to be active outside. My typical workday includes working many hours to run the Foundation and support the Project, but it always includes going on a long run or bike ride. It's a great opportunity to take a break from my computer, get in a good workout, and process Foundation work in my head.



Sometimes, getting outside helps me take a broader view of the work. On a recent run, while I was trying to distract my brain from the heat, I started thinking about some recent emails I received from our people in the FreeBSD community. We receive a lot of emails from people asking for help from us—it might be a request for some software development work, or managing something for the Project. Some of the messaging have made me realize there are misconceptions on how big/small we are, and what we are able to do.

I thought I'd take this opportunity to tell you who we are, what we do, highlight our activities that have recently helped FreeBSD, and talk about our path going forward.

Our Roots

Back in 1999, Walnut Creek CDROM wanted to transfer the FreeBSD trademark ownership to the FreeBSD Project. However, the Project was made up of individuals, and wasn't a legal entity. Justin Gibbs, who was on the core team at the time, began researching ways they could legally own the trademark. He found that creating a non-profit would not only allow ownership of the trademark, but also ownership and protection of all the FreeBSD intellectual property. So in early 2001 he founded the FreeBSD Foundation.

For our first five years, we were run by the

minimum required number of volunteers to make up our board of directors—three people. Since we didn't have a lot of funding and everyone had day jobs, we focused on a few directed funded projects, supported emerging BSD conferences, and engaged in license agreements with companies like Sun to provide FreeBSD Java binaries.

Over time, Justin realized the current situation wouldn't be sustainable, and in 2005, he hired me to run the organization. We grew our board, and I became the board Treasurer/ Secretary. We were all board members, so when people wanted to contact us, they just emailed board@freebsd.foundation.org (Note: This email address is no longer supported!). The Foundation and the board were basically synonymous.

Foundation Grows!

Fast forward to 2016. We now have six staff members and seven volunteer board members. The board helps set our strategic direction, engage with our constituents, fundraise, and has fiduciary responsibilities. The staff is responsible for implementing our strategic plans, actively running our organization, and supporting the Project.

Who Are We?

We are a team of six staff members located around the world. Our headquarters are based in

Boulder. You can read our bios [here](#).

Let me introduce you to each one of us, so you can become familiar with the work we do, and know who to go to when you have questions or need support.

I (**Deb Goodkin**) joined the Foundation in 2005 as the Executive Director, and have full responsibility for the Foundation. My responsibilities include overseeing and guiding all aspects of the Foundation, such as software development projects, fundraising and donor engagement, budget and finances, staff management, and developing our vision and strategic plans with staff and board members.

Ed Maste joined the Foundation as our Project Development Director in 2013. He also served on the board of directors for two years prior to that. He is responsible for managing our software developer team, overseeing outside funded projects, and helping to guide our technical direction, including features, platforms, and which functionality we should support.

Anne Dickison joined the Foundation as our Marketing Director in 2014. She is responsible for marketing and advocacy for FreeBSD and the Foundation. She does a lot more than that, including heading up the Code of Conduct efforts for the Project. Not only is she producing tons of high-quality FreeBSD literature to promote and teach people about FreeBSD, she also works on community engagement by helping to get FreeBSD representation at conferences around the world.

Glen Barber joined the Foundation as our Systems Administrator in 2013, and continues in his roles as release engineering team lead, and cluster administration team member.

Kostik Belousov joined the Foundation in 2013 as a software developer. He had a long history of maintaining and improving critical kernel subsystems in FreeBSD, and as a Foundation employee continues to work on different projects, adding features, functionality, and bug fixes in FreeBSD.

Sabine Percarpio joined the Foundation as our Administration Manager in 2016. She handles donation processing, overseeing accounting, managing our office, assisting with human resources and employee benefits, managing travel grants, and is most likely the first person to respond to your call or email to the Foundation.

That's the team! We are passionate about supporting FreeBSD, but we are limited in how much support we can provide with such a small staff. The



requests we are receiving, such as asking to fill more holes in Project, are telling us that we need to scale up to support these efforts. However, it can only happen if we get the donations to support this growth.

What Are We Doing to Help FreeBSD?

Our mission is to support the FreeBSD Project and community worldwide. As you can imagine, this covers a lot of areas. Therefore, we focus on what support we can provide, based on the funding we have, to both grow the community and continue to make FreeBSD a stable, secure, innovative, and reliable operating system. Here are some highlights of what we did to help FreeBSD over the past couple of months.

Fundraising Efforts

First, I want to point out that our work is 100% funded by your donations. As of June 30, we've raised \$257,570 and spent \$459,900, with a 2016 fundraising goal of \$1,250,000. Our Q1-Q2 financial reports will be posted in early August, so you'll be able to see how we are spending our money. For us to continue this level of support, we need your donations. Please consider making a donation [here](#).

OS Improvements

The Foundation improves FreeBSD by funding software development projects approved through our [proposal submission process](#) and our internal software developer staff members. We recently completed a project to improve the stability of the vnet network stack virtualization infrastructure. Another project, still in progress, is bringing new functionality, and stability and performance enhancements, to the 64-bit ARM port of FreeBSD. We are also sponsoring work to bring blacklistd to FreeBSD, a practical approach to con-

Getting lots of work done at our Foundation headquarters staff retreat in Boulder, CO. Staff members (Left to R) Anne Dickison, Ed Maste, Deb Goodkin, Glen Barber, and Sabine Percarpio.

nection-based security control.

In addition, on an ongoing basis, our software developers make many improvements, implement new features, and fix bugs to keep FreeBSD reliable and stable. Here is a list of some of the work done over the past few months:

- Implemented robust mutexes support, as part of ongoing efforts to bring our threading library into POSIX compliance and feature completeness.
- Documented kernel interfaces used by the threading library and produced almost 30 pages of technical text.
- Completed and committed the elimination of the `pvh_global_lock` from the `amd64 pmap`, which removed a bottleneck of a highly contested lock.
- Added filesystem throughput resource control limits (RCTL).
- Committed iSER initiator support.
- Added support for rerooting into NFS.
- Added `iscsictl`, which makes it possible to enable and disable iSCSI sessions.
- Investigated the state of reproducible builds in the ports tree, with work in progress to address identified issues.
- Updated ELF Tool Chain with bug fixes and improved handling of malformed input.
- Investigated using `lld`, the linker from the LLVM family, to link the FreeBSD base system. Investigated and tested fixes for the issues found.
- Managed the arm64 development project and investigated and fixed a number of bugs.
- Imported `llvm libunwind` and prepared it for use in FreeBSD.
- Investigated and reviewed the `blacklistd` proposal and patches.
- Facilitated biweekly calls for network transport, `DTrace`, and the graphics stack to help coordinate efforts in these areas.

Release Engineering

As I mentioned earlier, the Foundation employs a full-time person, Glen Barber, to work on release engineering to ensure releases are reliable, stable, and on time. Last quarter, Glen helped with the 10.3-RELEASE and starting the 11.0-RELEASE cycle.

Getting Started with FreeBSD Project

We kicked off a new Getting Started with FreeBSD Project. The purpose of the project is to develop how-tos and getting-started guides and videos for new people interested in trying out FreeBSD for the first time. While promoting

FreeBSD at events, we found many people interested in trying out FreeBSD, so we decided as part of our education initiative that we should provide easy-to-follow tutorials to get these people on board quickly!

For this project, we brought on an intern with no FreeBSD, Linux, or any command line operating system experience, to figure out on his own how to install and use FreeBSD. We did this to get a new person's perspective on using the current documentation and what made learning about FreeBSD and installing it on his desktop easy/difficult. With occasional help from members of the community, he is writing easy-to-follow how-to guides to make it easier for new users to get started. These will also be perfect guides to use at hackathons to help beginners get started with FreeBSD.

You can check out our how-to guides [here](#).

FreeBSD Advocacy and Education

A large part of our efforts are dedicated to advocating for the Project. We do this in a number of ways, including promoting work being done by others with FreeBSD, and producing advocacy literature to teach people about FreeBSD while helping to make the path to using FreeBSD or contributing to the Project easier. We also attend FreeBSD and non-FreeBSD events, and work with other FreeBSD contributors to volunteer to run FreeBSD events, staff FreeBSD tables, and give FreeBSD presentations.

Some of our recent accomplishments include:

- Creating a [FreeBSD page](#) on our website to promote FreeBSD derivative projects and showcase FreeBSD users.
- Promoting FreeBSD research by creating a [research page](#) on our site and conference handout.
- Creating guidelines and a [repository](#) for using Project and Foundation logos.
- Showcasing FreeBSD contributors by publishing two new Faces of FreeBSD stories about [Michael Lucas](#) and [Kris Moore](#).
- We publish this magazine, which is another platform for providing informative and interesting articles about FreeBSD.
- On the FreeBSD education front, George Neville-Neil and Robert Watson continued teaching and developing open-source FreeBSD teaching materials at [teachbsd.org](#).

Microsoft Loves FreeBSD!

We've worked with Microsoft over the last two years, to get FreeBSD in the Azure Marketplace. Microsoft will maintain their own FreeBSD images, and provide FreeBSD support to their customer base. This is an exciting partnership between the FreeBSD Project and Microsoft. You can read more about FreeBSD on Azure [here](#).

Conferences and Events

The FreeBSD Foundation sponsors many conferences, events, and summits around the globe. These events can be BSD-related, open-source, or technology events geared toward underrepresented groups.

We support the FreeBSD-focused events to help provide a venue for sharing knowledge, to work together on projects, and facilitate collaboration between developers and commercial users. This all helps provide a healthy open-source ecosystem. We support the non-FreeBSD events to promote and raise awareness about FreeBSD, to increase the use of FreeBSD in different applications, and to recruit more contributors to the Project. Lastly, we provide travel grants to FreeBSD contributors to have face-to-face opportunities to share knowledge, work on projects, and to learn more about FreeBSD by attending talks, presentations, and tutorials.

In April, board member Benedict Reuschling helped organize and run a hackathon in Essen, Germany, April 22–24. He then attended the Open Source Datacenter conference in Berlin, with FreeBSD contributor Allan Jude, to speak about [“Interesting things you can do with ZFS,”](#) which highlighted OpenZFS features and how well they work on FreeBSD.

During the last quarter alone, we promoted FreeBSD at:

- [Flourish](#): April 1–2 in Chicago, Illinois.
- [LFNW](#): April 23–24 in Bellingham, Washington.
- [OSCON](#): May 18–19 in Austin, Texas.
- [USENIX ATC](#): June 22–23 in Denver, Colorado.
- Deb Goodkin and Dru Lavigne attended the [Community Leadership Summit](#), May 14–15 in Austin, Texas.
- Our team attended BSDCan and the Ottawa Developer Summit. We held our annual board meeting to vote on officers, board members, and work on our strategic planning. Most of us attended and participated in the developer/vendor summits. Board member Kirk McKusick presented [“A Brief History of the BSD Fast Filesystem.”](#)
- Ed Maste gave a presentation on [Reproducible Builds in FreeBSD](#). Board member George Neville-Neil helped run the vendor summit and gave a talk called

[“Through the Wire.”](#)

- We provided travel grants to five FreeBSD contributors to attend BSDCan.

Legal/FreeBSD IP

The Foundation owns the FreeBSD trademarks, and it is our responsibility to protect them. We continued to review requests and grant permission to use the trademarks. We also provided legal help for questions the core team had about specific patents.

FreeBSD Community Engagement

We launched our first Community Survey. The purpose was to get input to help us determine our direction and how we should support the Project. Thank you to everyone who provided feedback!

Code of Conduct—Anne Dickison, our Marketing Director, has been overseeing the efforts to rewrite the Project's Code of Conduct to help make this a safe, inclusive, and welcoming community.

Going Forward!

We accomplished a lot these past few months, and we plan on increasing our support. We've held two all-day board meetings where we spent time working on our strategic plan and identifying areas we believe we need to support to keep FreeBSD relevant and sustainable.

Over the next year or two, you'll see the Foundation helping with security and improving developer tools. We'll be reaching out to more commercial users to help us fund these efforts.

We Need Your Help!

We are a small, yet mighty, organization. We are passionate about what we do and work hard to support FreeBSD, but we can't do this work without your help.

Please consider making a donation so we can continue and increase our support to make FreeBSD the best operating system available!

<https://www.freebsdoundation.org/donate/> •



DEB GOODKIN is the Executive Director of the FreeBSD Foundation. She's thrilled to be in her 11th year at the Foundation and is proud of her hardworking and dedicated team. She spent over 20 years in the data storage industry in engineering development, technical sales, and technical marketing. When not working, you'll find her on her road or mountain bike, running, hiking with her dogs, skiing the slopes of Colorado, or reading a good book.