

FreeBSD Foundation September Update



The
FreeBSD
FOUNDATION

Dedicated to supporting the
FreeBSD Project and Community

Upcoming Events

[EuroBSDcon 2015](#)

October 1-4, 2015
Stockholm, Sweden

[BSDCon Brazil 2015](#)

October 9-10, 2015
Fortaleza, Brazil

[GraceHopper 2015](#)

October 14-16, 2015,
Houston, Texas

[OpenZFS Developer Summit 2015](#)

October 19-20, 2015
San Francisco, CA

[November 2015 FreeBSD Developer and Vendor Summit](#)

November 2-3, 2015
Sunnyvale, CA

[USENIX LISA '15](#)

November 8-13, 2015
Washington, D.C.

FreeBSD Journal



The [July/August](#) issue of the

Message from the Executive Director

Dear FreeBSD Community Member,

September not only brings the start of autumn, but also marks the beginning of one of the busiest periods on the Foundation calendar.

From sponsoring and attending a number of new events, to kicking off our new middle school FreeBSD class and reaching a milestone with the FreeBSD Journal, it's been a big month. Plus, that's just the beginning of what we have in store for Fall 2015. Please take a minute to read up on what we've been up to and thank you for all you do to support the Foundation and the Project.

Deb

Development Projects Update

Wow, September seems to have passed by incredibly quickly, a consequence of a few back to back conferences. I attended vBSDCon, hosted by Verisign in



Washington, DC along with Foundation board and staff members Dru Lavigne, George Neville-Neil and Glen Barber. George and I shared a talk titled "Supporting a BSD Project," where we examined the ways in which the Foundation supports the FreeBSD Project, and imagined some ways we could grow our support in the future.

The conference also featured a talk by Willem Toorop of NLNet labs on "getdns, A New Stub Resolver." It implements a "modern asynchronous DNS API" that supports DNSSEC secured DNS. It can likely be extended to complement the ongoing application of Capsicum to FreeBSD base system and third party software. One of the Foundation's goals is improving security on FreeBSD and in other operating systems, and increasing the reach of Capsicum sandboxing is of great interest.

We have good progress to report on the Foundation-sponsored 64-bit ARM FreeBSD port. Semihalf has completed support for the single-socket Cavium ThunderX 48-core CPU and it is now available in the FreeBSD Subversion repository and weekly snapshot builds. Dual-socket support and a driver for the onboard Ethernet interface is in

FreeBSD Journal is now available! Don't miss articles on FreeBSD in the enterprise, and more. Not a subscriber? [Sign up](#) today!



The FreeBSD Journal Reaches a New Milestone!

The FreeBSD Foundation is pleased to announce that the FreeBSD Journal has over 10,000 subscribers! Thank you to everyone who helped us reach this 2015 goal ahead of schedule. Find out more [here](#).

See what others are saying about the Journal:

"Awesome! This is the best way to popularize FreeBSD!!" San Jose, California

"I've found it really practical, and great reading...it caters to all levels of users." Brooklyn, NY

Why Choose FreeBSD?



"ScaleEngine is a global video streaming and content delivery network. We specialize in delivering live and on-demand video streams to users from servers near them for lower latency to ensure the best viewing experience. Our small team of developers and systems

progress. This work is in the final stages of testing and review and will soon be committed to the main FreeBSD repository.

The Foundation sponsored Andrew Turner's travel to Linaro Connect in San Francisco at the end of September. Linaro Connect is one of the main events in the Open Source ARM ecosystem, which to date has largely been focused on Linux. Having Andy at Linaro Connect raises FreeBSD's profile in the ARM community and helps ensure that changes that affect FreeBSD (like toolchain components and ACPI and boot details) take FreeBSD into consideration.

Foundation staff member Konstantin Belousov has also joined the FreeBSD/arm64 effort. In addition to researching the architecture Konstantin committed a number of bug fixes in trap and exception handling and other areas.

Over the last two years several FreeBSD developers have worked hard to introduce a comprehensive test framework to FreeBSD, and the Foundation is supporting this effort in the arm64 port. We're running the FreeBSD kyua test suite inside of the QEMU emulator and, more recently, on the ThunderX system hosted at Sentex Communications. The initial results are quite good; the suite contains more than 4200 tests and just over 1% are failing. These failing results pinpoint components of the port that need effort as we continue on the path to making AArch64 a Tier-1 FreeBSD platform.

-- contributed by Ed Maste

Conference Recap: BSDCam 2015



BSDCam 2015, the annual FreeBSD Developer Summit in Cambridge, England, took place at the University of Cambridge Computer Laboratory from 17-19 August 2015. Hosted and organised by the University of Cambridge, BSDCam was also

supported by grants from the FreeBSD Foundation and Xinuos. The developer summit was attended by over 50 FreeBSD developers, local PhD students and researchers, and guests from tech companies using (or otherwise interested in) FreeBSD. The Computer Laboratory uses FreeBSD extensively in its research, especially in the areas of security, networking, operating-system, program analysis, and computer-architecture research -- all topics that were raised throughout the summit. Cambridge is also home to ARM Ltd, who develop the ARM architecture; the company was well represented at BSDCam, leading sessions on power management and embedded architectures, as well as contributing to sessions on ABIs, toolchain, and processor-based counters and tracing. Other organisations represented at the event included BAE Systems, EMC, the FreeBSD Foundation, Netflix, Neville-Neil Consulting, Nuxi, ScaleEngine, SRI International, Tarsnap, the University of Texas at Austin, Wheel Systems, and Xinuos.

Run "un-conference-style", BSDCam began with a brainstorming

administrators manage more than 100 servers in 38 data centers spread across 11 countries. Achieving this level of scale with such a small team is only possible because of the extensive level of documentation, observability, monitoring, and automation tooling available for FreeBSD. The ready supply of expertise also made FreeBSD especially attractive.

ScaleEngine uses FreeBSD throughout its entire infrastructure. With more than 1000 TB of storage to manage, access to frequently updated OpenZFS is a critical component to our products. We also make extensive use of bhyve, jails, and the general extensibility of FreeBSD.

ScaleEngine sponsors the FreeBSD Foundation to ensure that we have access to regular timely releases and that the FreeBSD project gets the support it needs to flourish."

– Allan Jude, VP Operations,
[ScaleEngine Inc.](#)

session on topics of interest, giving a schedule with one or two concurrent sessions throughout most of the event. Developers continued chatting well into the evening, whether at the pub or, on the second evening, a formal conference dinner at Murray Edwards College, sponsored by Xinuos. Day-time sessions ran one to two hours, with topics including:



- Future of the storage subsystem
- Network-stack performance
- The package system
- Toolchain/LLVM
- ABI emulation
- Software tracing and debugging
- Testing and QA
- Power management
- Capsicum and CloudABI
- Security, crypto, and the RNG
- Teaching with FreeBSD
- FreeBSD in the cloud
- FreeBSD/RISC-V
- FreeBSD/ARMv8

Detailed writeups of sessions, as well as slides from many of the talks, can be found on the BSDCam 2015 [wiki page](#).

BSDCam would not have been possible without the contributions of Jon Anderson (Memorial University Newfoundland), Pieter Brooks (University of Cambridge), David Chisnall (University of Cambridge), Brooks Davis (SRI International), George Neville-Neil (Neville-Neil Consulting), Robert Watson (University of Cambridge), and Bjoern Zeeb (University of Cambridge).



-- contributed by Robert Watson

Back by Popular Demand: The Faces of FreeBSD Series

For the past two years, we've highlighted many of the people who help make the FreeBSD Project thrive. The Faces of FreeBSD Series gives

members of the FreeBSD community an opportunity to tell their stories on how they got involved in FreeBSD and what they are doing to make the Project even better.



First up in the series reboot is Allan Jude. You can find his full interview on [the blog](#).

Please take a minute and read more about Allan and stay tuned for future interviews with FreeBSD enthusiasts who are advocating for FreeBSD, improving FreeBSD, writing for FreeBSD, running conferences, and helping in other various ways.

Fundraising Update: Recruitment and More

We had another busy month supporting FreeBSD! We kicked off our middle school FreeBSD class, and we sponsored and/or attended a lot of conferences including, SNIA, NGNX, womENCourage, Linaro Connect, and XDC. EuroBSDCon is right around the corner, and some of us are currently in Sweden preparing for this and the FreeBSD developer summit Oct 1-4.



As you may have seen on our social media feeds, the Foundation was a Silver Sponsor for the three-day womENCourage conference that was held this past week in Uppsala, Sweden. We had four FreeBSD contributors who volunteered and paid their own way to attend this conference to promote FreeBSD.

The first day of the conference was a job fair, and we were the only open source project to participate. Even though this was a women in tech conference, there were many men who attended the conference too, and we had both women and men stop by our table to talk about opportunities in the FreeBSD Project. Though we weren't there to offer jobs or internships, we did showcase how the FreeBSD Project offers great opportunities to gain job skills by working on a software project as a developer, coder, writer, administrator, and other areas that someone might want to get involved in. We focused on the fact that working on the Project allows you to work on what interests you; have great mentors to help you; find your own niche; and offers the opportunity for your work to be publically available for companies to see. This is work that you can put on your resume. We also emphasized that students can do their thesis or a research project that can have real world use.



The second day we were on a panel covering Careers in Open Source. All the panelists and the moderator were members of the FreeBSD community. We had a great turn out, and could have talked about the opportunities on an open source project way past our allotted hour. After our panel,

we had a table in the conference hall, so people could stop and talk to us. We had students and professors from all over the world including Russia, United Kingdom, Germany, France, India, Ireland, Greece, and Sweden ask us how to get involved in FreeBSD. Professors were interested in the FreeBSD curriculum and a few wanted to host FreeBSD events at their universities. This was a successful conference for the Foundation and the FreeBSD Project. We talked to people who were truly interested in getting involved in our Project or promoting FreeBSD at their schools. They saw the value of working on our Project. So, we need to take advantage of this interest in getting involved now! I am going to head up a session at this week's FreeBSD Developer Summit on recruiting to the Project. I am hoping to recruit FreeBSD people to help run this initiative. We know in order to grow our operating system and community, we need more people to develop code, write documentation, and support the many areas of FreeBSD that keep the project running smoothly and efficiently.

This is where we need your help.

Your donations will allow us to help make the process getting started with FreeBSD easier. Your funds will help us create more handouts at conferences that highlight the research being done on and with FreeBSD to give to students who are looking for research opportunities. It will help us provide the material to help teachers find out about the curriculum that is available and will be available, with resources listed on how to get up to speed on FreeBSD to be able to teach it.

There are so many opportunities to reach out to people who want to learn FreeBSD, contribute to FreeBSD, and teach FreeBSD. Your contributions can help us to be able to make this process easier, by providing informative documentation and supporting inexpensive platforms like BeagleBone Black and Raspberry Pi that just work with FreeBSD.

With your help, we can work with the community to have more FreeBSD talks and presentations at non-BSD conferences around the world and even cover travel expenses when needed through our travel grant program.

Many of you like to see the development work we do with our internal staff and outside funded projects like the armv8. While we are continuing to grow this area, there is so much we do behind the scenes that is keeping FreeBSD relevant, growing and sustainable. Your unrestricted donations help us sponsor more conferences, promote FreeBSD, fund the FreeBSD infrastructure, fund a full-time release

engineer, provide legal support for the project and protect FreeBSD IP.

We're working really hard to support FreeBSD, but as you can see, there's so much more we can do. Please help us achieve our goal of raising \$1,250,000 by making a contribution today. If you need help on how to ask your company, check out this [letter template](#) that another long-time FreeBSD developer shared with us. This last month has shown me that we are entering a new phase of growth of FreeBSD Project and the Foundation is ready to help reach that next level. But, we can't do it without you.

Please help us continue our support for FreeBSD by [making a donation](#) today!

-- contributed by Deb Goodkin

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