

FreeBSD Foundation December 2016 Update



Dedicated to supporting the
FreeBSD Project and community

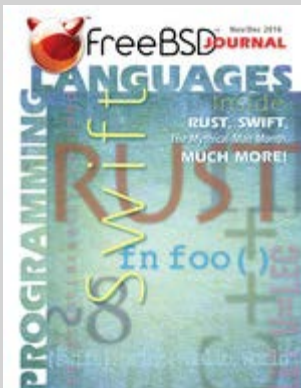
Upcoming Events

[Linux.conf.au 2017](#)
January 16-20, 2017
Hobart, Tasmania, Australia

[FOSDEM '17](#)
February 4-5, 2017
Brussels, Belgium

[FreeBSD Storage Summit 2017](#)
February 27, 2017
Santa Clara, CA

FreeBSD Journal



The [Nov/Dec 2016 issue](#) of the *FreeBSD Journal* is now available! Don't miss the programming languages-focused issue with articles on Rust, Swift, and more.

New Feature! Browser-Based subscribers now have the ability to download and share PDFs of the articles!

Sample Issue! If you've ever wanted to read through an entire issue of the *FreeBSD Journal*, now's your

Message from the Executive Director

Dear FreeBSD Community Member,
Wow, this has been quite the year! As we reflect back on 2016, we are proud of the support we've been able to provide to the FreeBSD Project. This includes providing more operating system improvements, leading the FreeBSD 11 release efforts, providing more FreeBSD advocacy and education support, improving the FreeBSD infrastructure, supporting more face-to-face opportunities, and promoting FreeBSD in new regions, like China and India. In this newsletter you'll find many articles talking about some of these areas we've supported. Please, take a minute to read what the Foundation has done this past year to support FreeBSD. If you haven't made a donation to the Foundation yet, please consider [making one today!](#)

Deb

2016 Development Projects Summary

Over the past year, the Foundation staff and grant recipients completed many projects. A check of the Subversion source repository shows over 950

commits sponsored by the FreeBSD Foundation. [Here](#) is a recap of the major development work undertaken in 2016.



Thank you to everyone who has supported the Foundation to help make this work possible!

-- contributed by Ed Maste

Fundraising Update: Meeting Our Goals

There are only two more days to meet our fundraising goal of 2,000 donors! I'm excited to report that we've exceeded our financial goal for 2016. We are incredibly

chance. [Download](#) the sample issue and be sure to share with your friends and colleagues.

Not a subscriber? [Sign up](#) today!

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?



"Juniper offers high-performance network infrastructure powered by JUNOS (TM) software, one network operating system that integrates routing, switching, security and network services. FreeBSD serves as the basis of JUNOS software, providing many of the essential operating system services of the UNIX-based system. Today, JUNOS software runs on a broad portfolio of Juniper products designed for the diverse and demanding needs of converged networks, from small offices to the largest TeraPop sites in the world.

Juniper benefits from the powerful collaboration between leading universities, individuals, and commercial organizations developing FreeBSD to advance the operating system functionality. The FreeBSD release system provides Juniper with a roadmap for features and a stable base for our code, while its practical licensing enables Juniper to develop intellectual property for advancing high-performance networking. Juniper



grateful for the generosity and support of the FreeBSD community. That being said, you may wonder why we're still talking about meeting goals for 2016. The second goal we are aiming to achieve is reaching 2000 donors over the course of the year.

Why do we have this goal? First, it shows the world that we have a strong community supporting FreeBSD. Second, it helps us pass the IRS public charity test. The IRS requires that at least 33% of our contributions come from multiple individuals and organizations instead of being funded by one or two large donors.

We are thrilled to have met our minimum financial goal of raising over \$1,250,000! Why do we need more? This amount sustains the level of support we've provided to FreeBSD for the past couple of years. However, there are areas of FreeBSD that we would like to add support for, including improving developer infrastructure and tools, improving the onboarding process for new contributors, FreeBSD training, more software development projects, and increasing face-to-face opportunities around the world.

In addition to helping us meet our IRS requirements, your donations will directly impact FreeBSD by allowing us to continue to:

- Accelerate OS improvements
- Provide a full-time Release Engineer
- Build and Improve FreeBSD Infrastructure
- Provide FreeBSD Outreach, Education, and Advocacy
- Support Face-to-Face Opportunities
- Provide Legal Support for the Project

Please consider [making a donation](#) today to ensure the success of FreeBSD and make it the best platform for education, computing, research, product development, and gaining real-world skills.

Thank you for your support!

-- contributed by Deb Goodkin

FreeBSD Outreach in China in 2016

Thanks to the efforts of new Foundation Board Director, Kylie Liang, members of the Foundation board presented at a number of Chinese conferences and meetups this year to help increase the awareness and adoption of FreeBSD in China. Below you'll find her recap of some of these events.

Conferences:

OSC 2016: The Annual Open Source Conference

employs many active FreeBSD developers that continually contribute to the FreeBSD project to further its development as a leading operating system."

– Naren Prabhu, Vice President
Foundation Technologies, [Juniper Networks](#)

The annual Open Source Conference is organized by OSChina and took place December

4. OSChina is the No.1 open source community in

China. It has 2.8 million community members, and 5 million page views every day. They also have a goal to help local open source projects expand within the country. During the event, Foundation Board Director George Neville-Neil presented "FreeBSD is NOT a Linux Distro" to around 400+ attendees. Those at the session were not only very interested in specific topics such as Jails, Dtrace and ZFS, but the final question of the session was about how to become a src committer.



COSCon 2016

The China OpenSource Conference took place in Beijing on October 15



and 16, 2017. This was the first annual conference sponsored by the open source organization, Kaiyuanshe. Foundation Board Director Hiroki Sato presented an Introduction to FreeBSD to around 300 attendees. Hiroki's presentation focused on the history of FreeBSD, how it

compares to Linux and who is using it in the industry. Following the presentation, about 30 people joined Hiroki in a WeChat group for BSD.

BSD Meetups

Shanghai

Around 50 people attended the BSD Meetup in Shanghai. Board Director Robert Watson delivered a presentation on "Cambridge L41: Teaching Advanced Operating Systems with FreeBSD" through audio conference, and FreeBSD Src Committer, Yanmin Qiao presented on "FreeBSD and BSD based Virtual Appliance in Microsoft Azure".



Beijing

Around 45 people attended BSD Meetup at Beijing. George Neville-Neil again delivered his "FreeBSD is Not a Linux Distro", Zhengl Fu of Array Networks shared "FreeBSD development @ Array" and Yanmin Qiao talked on "FreeBSD



and BSD based Virtual Appliance in Microsoft Azure". Some attendees were excited to meet George in person. Most questions were related to FreeBSD's role in Cloud App, FreeBSD's container technology, and the benefit to use FreeBSD as a base of VPN product comparing with Linux.

-- contributed by Kylie Liang

Recap of Advocacy Efforts in 2016



As we've mentioned before, if you've ever been to a FreeBSD Developer Summit, or read any of the Foundation entries in the quarterly status report, you've heard us talk about how advocating for FreeBSD is an important part of how we support the Project. Advocacy takes many forms, from attending conferences to promote the Project, to creating literature to educate and inform on the latest FreeBSD efforts.

In addition, we talk about the latest developments on social media, interview community members about their experiences with FreeBSD, and work with companies to share why FreeBSD is their operating system of choice. [Check out the list](#) of just some of the advocacy work your support has helped us accomplished in 2016. Thanks to your ongoing generosity, we look forward to expanding our efforts in 2017!

-- contributed by Anne Dickison

FreeBSD Infrastructure Support in 2016

If you have ever used or contributed to FreeBSD, you have benefited from one of our programs to support the Project. In this blog post, I want to share with you how we support the FreeBSD infrastructure.

FreeBSD infrastructure includes all the hardware, software, hosting facilities, and people that support the build process, continuous integration efforts, automated testing, performance testing, mirrors, hosting facilities, and various architectures, just to name a few.



We also provide support for the infrastructure by having a cluster administrator on our staff. This position allows someone to be more readily available as volunteers become tied down in their day jobs.

The process for determining what hardware will be needed or desired each year, is mostly driven by the Foundation asking Project teams what hardware they need to improve their processes. We then take that input to help determine the hardware budget for the year.

In addition, as a 501c3, we can engage in service and other forms of legal agreements for companies to host the hardware.

Here's a list of some of the hardware we purchased in 2016:

- One server to reduce the build time from over an hour to 20 minutes, in the continuous integration process. You can find out more information [here](#).
- Two ThunderX servers for native package builds for the FreeBSD/arm64 architecture.
- Two servers to improve release engineering builds.
- Four servers to improve package builds.
- Four servers as build slaves to increase the number of builds in the continuous integration process.

Go [here](#) to find out more information about some of the FreeBSD infrastructure.

The list of companies providing co-location facilities for the Project can be found at the bottom of [this page](#).

-- contributed by Deb Goodkin

Update on the TeachBSD Initiative

Developed by FreeBSD Foundation board members George Neville-Neil and Robert Watson, the TeachBSD initiative offers a set of reusable course materials designed to allow others to teach both university students and software practitioners FreeBSD operating system fundamentals.

Over the past year, Dr. Graeme Jenkinson and Dr. Robert Watson at the University of Cambridge have been working on a substantial update to the Cambridge masters-level L41 Advanced Operating Systems course to extend hands-on laboratory teaching material. The existing course design runs FreeBSD on an ARM-based BeagleBone Black, using tools as DTrace and Hardware Performance Counters (HWPMC) to analyze OS behavior and performance. In the extended course design, Python Jupyter Notebooks, a web-based UI, runs on the BeagleBone Black providing an easy-to-use web-based interface to run benchmarks as well as analyze and plot resulting data. This reduces the amount of time students spend on data management and collection, allowing them to focus on learning about performance measurement, data analysis, and OS design. We will be releasing an updated version of the course material as open source on teachbsd.org once the current run of the course wraps up in February 2017.

Work also continues on the undergraduate course, which will be taught in a 2 week intensive version at the Technical University of Darmstadt in

late February 2017. George Neville-Neil has continued to promote all of the course material at various institutions, including National Chiao Tung University (NCTU), who recorded the presentation "[Teaching Systems Software with FreeBSD and Tracing](#)" and National Taiwan University (NTU), both in Taiwan.

-- contributed by Dr. Robert Watson and George Neville-Neil

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