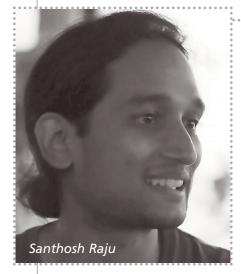# new faces
of FreeBSD

BY DRU LAVIGNE

This column aims to shine a spotlight on contributors who recently received their commit bit and to introduce them to the FreeBSD community. In this installment, the spotlight is on Santhosh Raju, who received his src bit in August.

Santhosh Raju

Tell us a bit about yourself, your background, and your interests.

● I am Santhosh Raju (fox@FreeBSD.org), from India and currently reside in Ecuador, where I also work at the moment. I have been fascinated with computers from quite a young age and am fond of working with them. I got introduced to Linux when I was in college in 2003. But it was not until 2009 that I was introduced to BSD by my friend Cherry G. Mathew. In general, I like to play around with both hardware and software, and most of that is done during spare time as a hobby. I also love to immerse myself in the world of video games when the time allows for it. But I have not engaged in any active gaming due to lack of a machine to play with. My nickname, fox@), comes from an interesting character in one of my favorite video games.

In the world of computers, I have a general interest in writing and working with systems software, though I am yet to have any luck finding a job that fits the hobby. Along with Cherry, I got my first taste of working with kernel internals when we were writing the portable hotplug API for NetBSD: uvm_hotplug(9) [https://www.netbsd.org/gallery/presentations/cherry/eurobsdcon2017/uvm_hotplug.pdf]. I am also interested in formal verification and have worked a little bit with TLA+.

How did you first learn about FreeBSD and what about FreeBSD interested you?

● I was introduced to FreeBSD by Philip Paeps and Tod McQuillin when I met them at HillHacks 2015 [https://hillhacks.in/], a tech conference in the Himalayan foothills. Other than trying out NetBSD once in 2009, I really had not dug deep into other forms of BSD, even though I had heard of FreeBSD. I was encouraged by Philip to try out FreeBSD for hosting an IRC client, as I was running a client locally in my laptop and it was annoying to get dropped off whenever I shut down my laptop. And since I was eager to try out a Raspberry Pi 2, I thought of running FreeBSD/arm 11.0-RELEASE on my RPi2 to set it up as an IRC client using Irssi. It

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was during this time that I got to explore the details of how to use FreeBSD, install packages from either source using the Ports system or the binary package manager. Coming from a Linux background, I thought it might be difficult to set up and configure things. On the contrary, I found the initial setup and configuration was easier and well organized. In the FreeBSD Handbook, there are sufficient guides and details on various steps to set up the system from basic installation and initial configuration to setting up ports for third-party software.

It was during this time I noticed an issue that was preventing me from using FreeBSD: my Irssi setup needed a plugin for connecting to ICB networks, which was not available in the Ports tree. I ended up compiling the package manually from source, but this did not help every time I had to upgrade Irssi. So, with some help from Philip and the FreeBSD Handbook I was able to write my first contribution to the FreeBSD Ports system, the irc/irssi-icb [https://blog.port0.in/2017/04/my-first-freebsd-port] package. Since then, I have been packaging little pieces of software into FreeBSD both as an effort to learn things and to make some contributions. Over a period of time, I eventually set up most of the infrastructure I use in FreeBSD. One of the things I got introduced to by entering into BSD land was how to do networking for conferences with computers on a small-to-medium scale. Playing around with DHCP, DNS, and pf in a FreeBSD-based UniFi controller for the network [https://blog.port0.in/2017/07/networking-like-the-big-boys] was an enjoyable experience and fun exercise.

One of the things I find useful with FreeBSD is the fact there is ample documentation tailored both for a first-timer (FreeBSD Handbook) and an experienced person who wants to look more into kernel development (man pages). In addition, upgrading the system and packages is a breeze; building and deploying packages for security updates is as easy as bumping version numbers in the Ports tree, regenerating the checksum, and installing the update from the package if the fix was urgently needed. I have had good experience in building and running CURRENT in a virtual machine where I do some development and testing of packages. Even when things were half broken: like upgrading an RPi2 over the Internet [https://blog.port0.in/2018/04/updating-freebsd-in-rpi2-remotely]—where Todd helped me to set up the test RPi2 where I reproduced the problem and fixed it—or trying to restore the correct partitions and files for a UniFi controller running on FreeBSD [https://blog.port0.in/2018/07/a-lesson-in-cloning-disks], things were not very painful to fix.

How did you end up becoming a committer?

• After my first contribution in the form of irc/irssi-icb, I became interested in maintaining packages, whether it was packaging something for a friend or something I found useful. Since it was not easy to test changes in my local RPi2 or my low-spec virtual machine running FreeBSD, Philip helped by giving access to his poudriere(8) instance. This is when I truly started to enjoy FreeBSD. Building packages in jails and building dependencies from scratch for different architectures and different versions of FreeBSD using a package-builder software was a very enjoyable experience. This also helped me to test packages I was writing more efficiently and helped to generate patches for other packages I used

that required a fix or a version bump—and all this could be easily tested in poudriere. Cliqz [https://www.freshports.org/www/cliqz] is one of the most time-consuming ports I help maintain. It is based on Firefox and has some kind of interesting issue during every update. However, since it is based on Firefox, I can generally keep up with the www/firefox package to see what needs to be done to make sure it works correctly.

After taking on a new job in Ecuador, I tried to keep active by doing a bit of maintenance work with the packages during the weekends. Philip suggested I should join the ports channel in EFnet and interact with the people there. Even though I lurk there a lot, I occasionally interact with people, asking them questions about Ports. By the end of July, four months after starting the new job, due to some very unfortunate circumstances, I ended up being let go from the company. With a lot of free time in August 2019, I decided to do bug fixes in some packages I used as well as some portlint(1) / portfmt(1) on the packages I maintain. It was during this time Philip proposed a commit bit in Ports and volunteered to be my mentor.

How has your experience been since joining the FreeBSD Project? Do you have any advice for readers who may be interested in also becoming a FreeBSD committer?

● It is a bit too early to summarize my experience since joining the FreeBSD Project, but since I began using FreeBSD and interacting with the community, it has been quite positive. People, in general, are encouraging and helpful and try to answer many of the questions I ask. Sometimes I don't get a response, a sign probably that people are busy or that I might be asking something too trivial. Much of the time I tend to find the answers in the Handbook, man pages, forums, or blogs.

I think I am a bit too inexperienced to give advice to readers who may be interested in becoming a FreeBSD committer, but I could share some things that eventually helped me become a committer.

✶ The Handbook is my go-to place for reference. Sometimes I do miss things, and when I ask questions, I get pointed back to the relevant sections there.
✶ Breaking things is fine; one cannot learn until you break something and, more importantly, fix it. However, break them under controlled circumstances so that the smallest number of people are inconvenienced.
✶ When in doubt, ask questions through available channels, mailing lists, irc, or slack. It is better to have asked something stupid than to have that doubt linger and then do something even more stupid.
✶ Taking up responsibilities and making sure that the responsibilities are met correctly is an important aspect when a person is handed over a commit bit.
✶ A little bit of politeness goes a long way.

DRU LAVIGNE is a FreeBSD doc committer and the author of *BSD Hacks* and *The Best of FreeBSD Basics*.