

BSDCam 2018 Recap

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BSD-PL

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DevSummit

- ▶ 15-17 August 2018;
- ▶ Held at the Department of Computer Science and Technology (formerly Computer Laboratory) of the University of Cambridge;
- ▶ 31 committers (4 from Poland) and 13 guests (4 from Poland);
- ▶ 16 sessions (including talks);
- ▶ Session notes are in the [Wiki](#).



Schedule

Wednesday	
Planning	
Desktop	Storage & ZFS
Developer tools, wiki	Toolchain & build

Thursday	
CPU Security	Patching & deployment
Testing & CI	Transport
Power Management	Software security

Friday	
Meetups & hackathon	ARM & Embedded
Package base	Jails & Hypervisors
Talks	



Storage & ZFS

- ▶ Native Encryption for ZFS on FreeBSD CFT (original commit);
- ▶ Fedor Uporov (fsu@) works on ext4 read/write support;
- ▶ Jakub Klama (jceel@) works on [9p server](#) and [virtio-9p](#);
- ▶ ZFS fault management: automate disk partitioning, handle encryption;
- ▶ Teach installer to be able to use boot environments, deploy an existing ZFS dataset;
- ▶ A utility to manage Boot Environments on ZFS `bect1(8)` and a library for creating, destroying and modifying ZFS boot environments `libbe(3)` were added.
Started as a GSoC 2017 project. Later developed by Kyle Evans (kevans@).



Developer tools, wiki

- ▶ There are many interesting articles in the Wiki that should be part of the documentation;
- ▶ Use OAuth to allow to use GitHub, Google and other accounts to access Wiki, Bugzilla or Phabricator;
- ▶ There is no workflow documentation for Bugzilla which makes it hard to tell what's the usual bug lifecycle;
- ▶ Allow to modify documentation easily to have more contributors;
- ▶ Documentation entries should have expiration dates;
- ▶ Let git users to contribute easier.



CPU Security

- ▶ We have Intel SGX support since the last year thanks to Ruslan Bukin (br@). It would be nice to have use cases in userland (e.g. OpenSSH);
- ▶ Linux has support for [Multikey Total Memory Encryption \(MKTME\)](#);
- ▶ Type-aware copyin(9) and copyout(9) implementation;
- ▶ [r336876 Use SMAP on amd64](#);
- ▶ ASLR is still waiting for a review.



Transport

- ▶ Improve IPv6 performance and implement missing RFCs;
- ▶ [TCP reassembly vulnerability](#);
Kernel created long linked lists for out-of-order TCP segments and fragment chains. The current workaround is to have a low limit.
- ▶ Alternate TCP/IP stacks:
 - ▶ Allow different TCP stacks concurrently (side-by-side);
 - ▶ Use `setsockopt()` to assign individual sockets to the alternative stacks;
 - ▶ Live-patching by loading a newer version of a stack without rebooting.
- ▶ [r334804](#) [This commit](#) brings in a new refactored TCP stack called [Rack](#).
Most video traffic at Netflix uses [RACK](#).



Software security

- ▶ Capsicum built unconditionally;
Might affect image size and performance on embedded platforms. This requires testing.
- ▶ `fdunlinkat(2)` - unlink an already opened file;
- ▶ It would be nice to capsicumize some interesting ports:
Chromium, Firefox, Git server, SVN server, ffmpeg, vlc?
- ▶ Document examples of Capsicum applications;
netdump server could be used as an example.
- ▶ We're going to have CA certificates in base.



Meetups & hackathon

- ▶ BSD-PL is awesome;
- ▶ So as other BSD user groups, e.g. BSD Users Stockholm, Colorado BUG, SANE User Group (London), BSD NRW (Düsseldorf), HELBUG (Helsinki), Subcarpathian BSD;
- ▶ We're going to have a hackathon in Aberdeen, Scotland in April 2019;
- ▶ There were a few ideas how to build a community: office hours, podcast, live coding, code reading, small hackathons.



Package base

- ▶ Around 700 base packages for amd64;
- ▶ Testers needed;
- ▶ It would be nice to have official infrastructure with a package base repository;
- ▶ Brad Davis (brd@) would like to have package base in FreeBSD 12.



Talks

- ▶ bhyvearm64 (Alexandru Elisei), current status of bhyve on ARM;
- ▶ ARMv8.3 Pointer Authentication (Mark Rutland);
- ▶ HWPMC tracing support (Ruslan Bukin), support for Intel PT and ARM Coresight;
- ▶ FreeBSD/RISC-V (Ruslan Bukin), status update;
- ▶ eBPF update (Hiroki Sato);
- ▶ Booting Faster (Colin Percival);
r338316 Speed up vt(4) by keeping a record of the most recently drawn character and the foreground and background colours. (reduces boot time by about 500 - 800ms)
- ▶ Google Summer of Code (Gavin Atkinson).



Questions?

