BSDCam 2018 Recap

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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.



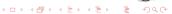
CPU Security

- 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?

